



Literature Review on Internal Control and Business Efficiency in Academic Research

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ABSTRACT:

Internal control helps managers prevent, detect, and promptly limit errors that may occur during business operations. When a business builds a good internal control system, it means improving the business's operating capacity and increasing business efficiency. This article aims to evaluate research trends in the application of internal control and business efficiency in businesses based on documents in the Google Scholar database in the years 2013–2023. The results show growing interest in using internal controls and business performance as strategic management tools in hospitals, with 2023 being the year with the highest number of publications, and many journals have published up to 30 publications on this issue. Finally, the keyword analysis identified a variety of content that will be important research points for future research.

Keywords: Internal control, business efficiency, systematic document review, VOSviewer.

1. Introduction

In a competitive environment, businesses always face risks in the production and business process, such as disease risks, resource quality risks, market share risks, etc. To address this risk, businesses need to design processes to monitor, identify, and assess risks to take timely corrective measures, adapt to changes in the economy, and increase competitiveness to achieve business development goals. At that time, the internal control system in the enterprise must be established effectively.

Therefore, in recent years, general studies have often chosen internal control and business efficiency in enterprises for synthesis and analysis. Providing a comprehensive picture of research on internal control and business efficiency in enterprises from 2013 to the present is necessary to fill previous research gaps.

The article clarifies the following research questions, including Q1: What is the number of articles on internal control and business efficiency in enterprises published from 2013 to 2023? Q2: Which journals have the most publications related to this content? Q3: What topics are the keywords used grouped into? Q4: And have these keywords changed and gained strength over time?

To answer the above questions, the study reviewed 184 articles published in the period 2013–2023. Research conducted through bibliometric analysis makes a great contribution to the research community because, through bibliometrics, a valuable amount of information can be collected about a topic. By reflecting on what has been done and what needs future research, the article aims to add to the literature on different methods and contexts to assist internal control and performance researchers business within the enterprise. The research is divided into parts: defining the conceptual foundation, applied methods, research results, and concluding remarks.

2. Theoretical basis

Internal control

According to Moeller (2009), internal control is a process designed and applied by managers in an organization to provide reasonable information about Financial information and operational information; Comply with policies, procedures, rules, regulations, and laws; Protect your assets; Realize the mission, goals, and results of the operating unit cycle; Guaranteed integrity and value. Moeller further developed COSO's ethics and added several goals that internal control should achieve: ensuring integrity and shared values. Internal controls are processes designed and implemented by management and other personnel to provide reasonable assurance regarding the achievement of the relevant entity's objectives, financial reporting, results of operations, operational efficiency, and compliance with current legal regulations (Mwindi, 2008).

According to Feng et al. (2009), the quality of internal control has a large influence on the accuracy of regulations established by managers. Businesses that establish ineffective internal controls will make more errors than businesses that establish effective internal control systems. Schneider and Church (2008) argued that the effectiveness of internal control affects corporate earnings. At that time, internal control plays an important role in the success of the business.

Business efficiency

A corporation's or department's accomplishments can be summed up as business performance. A system of measurement indicators is used to express an enterprise's business performance results. Businesses can examine their operating outcomes and financial potential to gain a comprehensive understanding of their current state and make the required modifications to improve their business success later on. According to Hult and associates (2008), there are two categories of performance outcomes that are employed: operational performance and financial performance.

Hult et al. (2008) state that the most often used metrics for gauging financial performance are revenue targets (44%) and return on total assets, or ROA (40%); Market share is the most widely used metric to assess performance (47%); Additionally, reputation (30%) is the most widely used statistic to gauge overall performance. Additionally, according to Hult and his colleagues, 44.8% of research concentrated on employing financial indicators to gauge the performance of enterprises as well as collecting and surveying data at the enterprise level.

However, the financial aspect only partly reflects the operating efficiency of the business; in many cases, the long-term survival and development of the business lies in customer satisfaction and the development of employee skills or the improvement of internal management processes. Therefore, in modern management, measuring performance on non-financial aspects is increasingly focused on both theory and practice. Typically, the birth of the balanced scorecard model by Kaplan and Norton (1996) and the pyramid model by Lynch and Cross (1991). Specifically, Kaplan and Norton (1996) use a combination of four aspects: customers, finance, internal processes and learning and development to reflect business performance. The combination of financial results with non-financial results will help businesses operate more stably in the long term as well as better implement strategic business plans.

The impact of internal control on business performance

In a study in educational institutions in Nigeria in 2001, Whittington & Pany (2001) stated that there is no relationship between internal control and business performance. On the contrary, in a study in Uganda by Ssuuna (2008), the results showed that the factors of internal control, including control environment, internal control, and control activities have a positive impact on effectiveness financial performance of universities. Mwaki and colleagues (2014) studied sugarcane companies in Kenya, the results showed the elements of internal control, including control environment, risk assessment process, information system, and Control activities have a positive impact on financial performance in Kenya sugarcane company.

3. Method

This study uses the systematic literature review method SLR (Systematic Literature Review) of Tranfield et al. (2003). Sample selection for the study was based on PRISMA (priority items for systematic reviews and meta-analyses) originally proposed by Liberati et al. (2009) and updated in 2021 by Page et al. (2021). The PRISMA flow diagram is based on three steps: identification, screening, and study inclusion

Step 1: The author synthesizes previously published overview documents related to internal control and business efficiency in enterprises and introductory documents on the nature and role of internal control and business efficiency in enterprises from data sources on Google Scholar. This collection aims to explain the urgency of the research, overview the research, and point out research gaps. Data was collected on October 10, 2023, with the use of the following keywords "internal control" and "business performance". A total of 200 results were found on the Google Scholar site from 2013 to 2023.

Step 2: The author group has screened to remove inappropriate documents through technical screening and content screening. For technical screening, documents are in the form of an encyclopedia, Editorials, Short communications, Mini-reviews, and Book chapters will be eliminated. For content screening, documents are pre-read to remove documents with irrelevant content even though they contain search keywords. The results after filtering showed that 184 results met the filtering conditions for inclusion in the study.

Step 3: The number of remaining documents after the two steps is analyzed by the SLR (systematic literature review) document system and put into VosViewer software to analyze keywords and co-citation analysis. The results of the SLR analysis are presented in tables and graphs. The results of the bibliometric analysis will be presented in visual form. From the analysis results, the study finds popular research directions, names the research directions, and suggests future research directions.

4. Results

4.1 Statistics on year of publication

From 2013 to 2023, a total of 184 articles on internal control and business performance in enterprises were indexed in Google Scholar with an average of 16.7 articles published each year. The highest number of articles is in 2022 and 2023 (27 and 30 articles published per year, respectively). And 2013 and 2014 were the years with the least number of articles published, corresponding to 8 articles per year. Statistical results of the year of publication show that researchers are paying a lot of attention to internal control and business efficiency in enterprises over time.

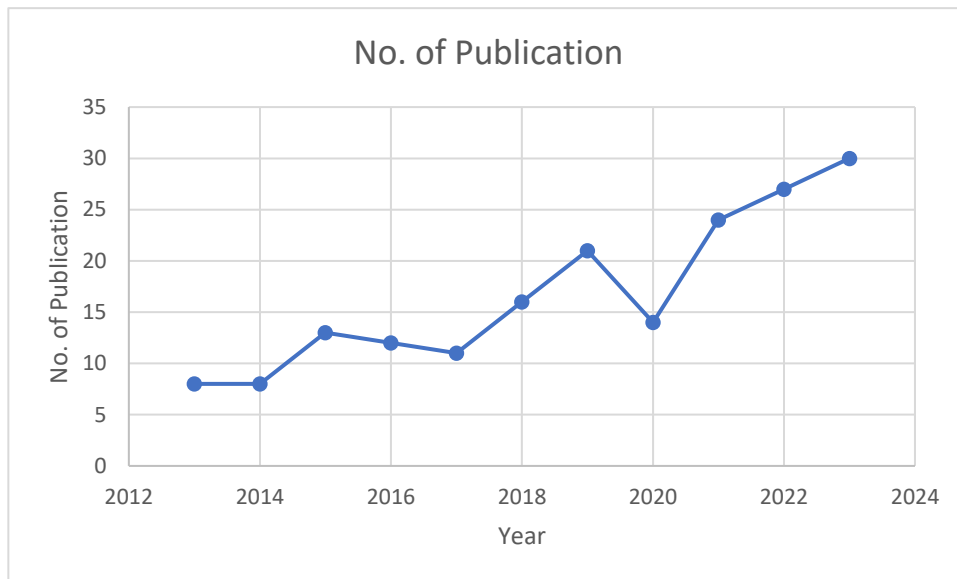


Figure 1. Chart of the number of studies over the years

Regarding citation statistics, articles published within 10 years were cited 2,286 times. The article with the most citations is "The impact of internal audit attributes on the effectiveness of internal control over operations and compliance" by the author group YT Chang, H Chen, RK Cheng, W Chi, published in 2019 by the publisher Elsevier version with 224 citations. Next is the article "Internal control and operational efficiency" by the author group Q Cheng, BW Goh, JB Kim, published in 2018 by Wiley Online Library with 215 citations. The articles with the most citations are in the period from 2016 - 2021.

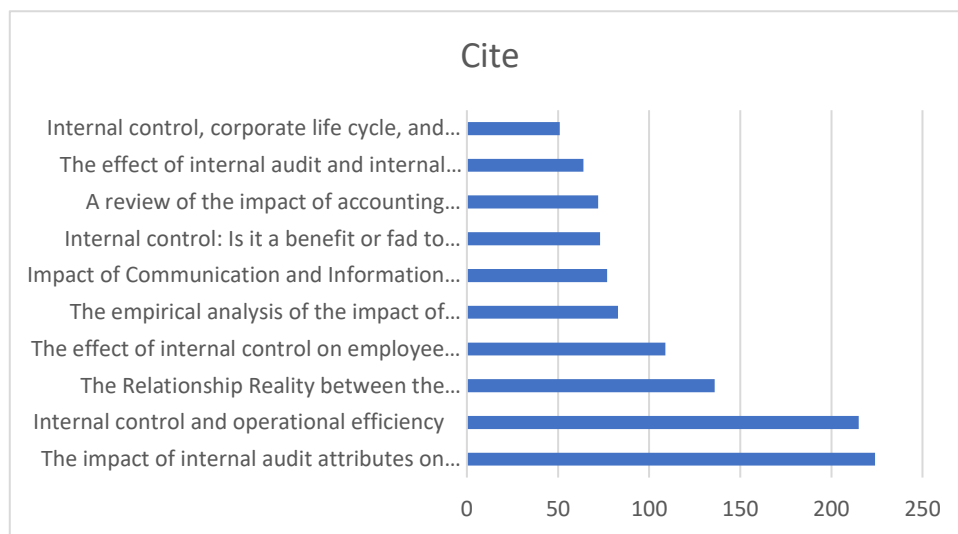


Figure 2. Chart of publications with high number of citations

4.2 Keyword analysis results

In the keyword analysis section, research and select keywords that appear 10 times or more. Keywords are evaluated by the software based on the number of occurrences and total link strength. Keyword analysis results can be exported into files as images. The keyword analysis results are as follows:

Selected	Term	Occurrences	Relevance
<input checked="" type="checkbox"/>	internal control	269	2.64
<input checked="" type="checkbox"/>	operational efficiency	219	2.61
<input checked="" type="checkbox"/>	process	16	1.14
<input checked="" type="checkbox"/>	financial performance	10	1.07
<input checked="" type="checkbox"/>	accuracy	11	1.02
<input checked="" type="checkbox"/>	internal control system	132	1.02
<input checked="" type="checkbox"/>	internal control quality	14	1.01
<input checked="" type="checkbox"/>	financial reporting	15	0.99
<input checked="" type="checkbox"/>	efficiency	22	0.84
<input checked="" type="checkbox"/>	asset	15	0.80
<input checked="" type="checkbox"/>	management	30	0.67
<input checked="" type="checkbox"/>	firm	17	0.66
<input checked="" type="checkbox"/>	research	14	0.64
<input checked="" type="checkbox"/>	nigeria	18	0.63
<input checked="" type="checkbox"/>	reliability	15	0.54
<input checked="" type="checkbox"/>	information	15	0.41
<input checked="" type="checkbox"/>	analysis	13	0.31

Figure 3. Keywords repeated many times

Out of 931 keywords, only 29 keywords met the criteria to appear at least 13 times. The keyword “internal control” has appeared the most with 269 times. The keywords operational efficiency and internal control system appeared 219 times and 132 times, respectively.

Related keywords are grouped into groups, each group is a separate color. Note that the larger the circle, the more times it appears; the thicker the line connecting the two keywords, the greater the frequency of occurrences. Related keywords are grouped into groups, each group is a separate color. Looking at the image, it can be seen that the keywords are divided into 5 groups with 17 items, 96 links and total link strength of 1272. Group 1 is represented by red links with the keywords accuracy, asset, information, internal control, process, reliability, and research. Group 2 is represented by green links with the keywords financial performance, financial reporting, firm, internal control system, Nigeria, and operational efficiency. Group 3 is represented by green links with the analysis and efficiency of the keyword. Group 4 is represented by yellow links with the keyword internal control quality. Group 5 is represented by purple links with the keyword management. With 5 research directions and 17 popular keywords, the results show that research content on the relationship between internal control and business performance in enterprises is of interest. Future studies can base on that to choose research directions to fill the gap, or analyze more deeply.

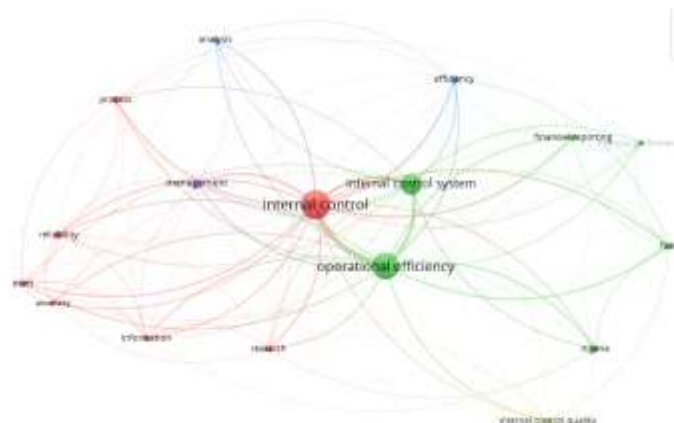


Figure 4. Keyword statistics

In addition, the results from the VOSviewer tool have shown the time of keywords appearing. Dark colors represent keywords researched from the first years (2013), in recent studies, keywords have appeared in brighter colors. The keyword appearance time chart shows that internal control and business efficiency are the most interesting keywords, and assessing the level of interest over time, this keyword is of most interest in the period 2018-2021.

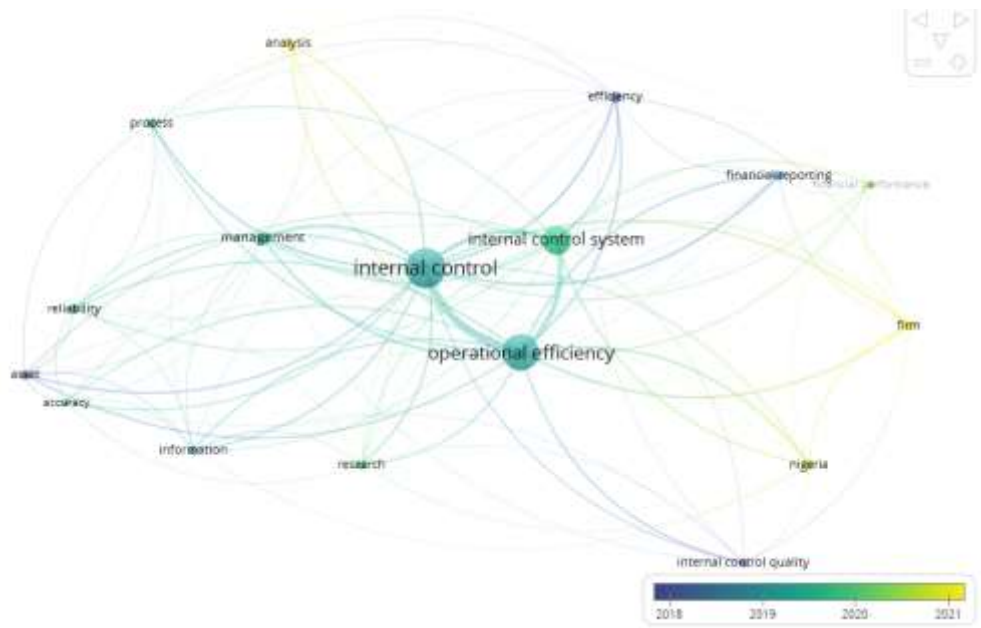


Figure 5. Keyword statistics over time

4.3 Co-authorship analysis

To explore the tendency to cooperate in researching the relationship between internal control and business performance in enterprises, this study analyzed co-authorship relationships between individual authors. According to Benoit et al. (2018), the analysis results help improve understanding of research collaboration and help discover influential researchers. Of the total 184 publications reviewed, 377 authors contributed to the article. Among them, 16 authors have participated in writing 2 or more articles. Figure 6 presents the co-authorship network map. The link between two nodes represents the collaborative relationship between the two authors, and the thickness of the link represents the intensity of the collaboration. Authors BW Goh and JB Kim are two authors who participated in writing 5 articles during the research period from 2013 - 2023.

Verify selected authors			
Selected	Author	Documents	Total link strength
<input checked="" type="checkbox"/>	goh, bw	5	9
<input checked="" type="checkbox"/>	kim, jb	5	9
<input checked="" type="checkbox"/>	cheng, q	4	8
<input checked="" type="checkbox"/>	bastoi, s	2	4
<input checked="" type="checkbox"/>	chen, h	4	4
<input checked="" type="checkbox"/>	oliveira, hc	2	4
<input checked="" type="checkbox"/>	perera, c	2	4
<input checked="" type="checkbox"/>	chang, yt	2	3
<input checked="" type="checkbox"/>	cheng, rk	2	3
<input checked="" type="checkbox"/>	eton, m	2	2
<input checked="" type="checkbox"/>	murezi, c	2	2
<input checked="" type="checkbox"/>	zhang, c	2	2
<input checked="" type="checkbox"/>	fraser, l	2	0
<input checked="" type="checkbox"/>	phomiphatrachakorn, k	2	0
<input checked="" type="checkbox"/>	shobaki, mj al	3	0
<input checked="" type="checkbox"/>	zhou, s	2	0

Figure 6. Author has many articles

Related authors are grouped into groups, each group is a separate color. Note that the larger the circle, the greater the relationship between the authors; the thicker the line connecting two keywords, the greater the intensity of appearance. Related authors are grouped into groups, each group is a separate color. Looking at the image, it can be seen that the authors are divided into 2 groups with 2 items. Group 1 with red link includes 2 items (C Zhang, H Chen). Group 2 with blue link includes 2 items (YT Chang, RK Cheng).

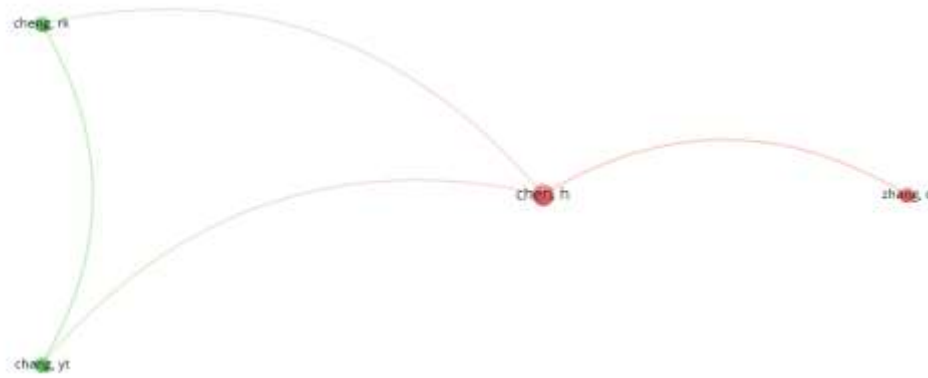


Figure 7. Author statistics

In addition, the results from the VOSviewer tool have shown the time the authors spent writing the article. The author appearance time chart shows that authors with many articles on the relationship between internal control and business efficiency in enterprises focused on publishing articles in the period from 2018 to 2020.

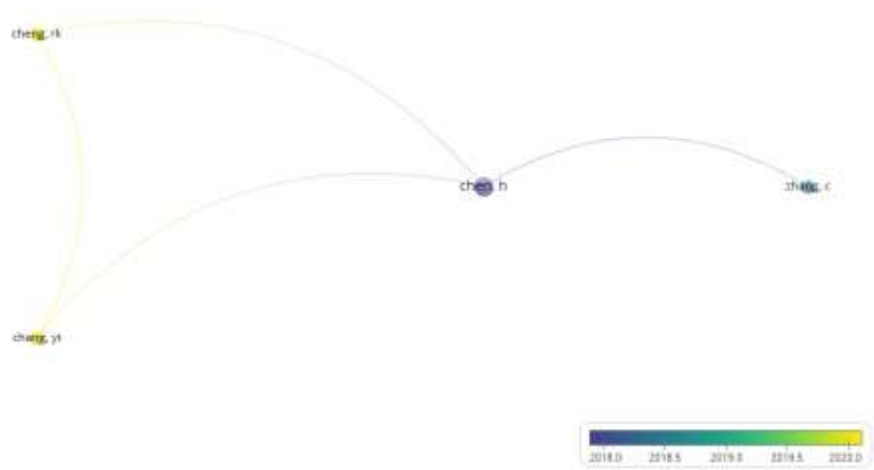


Figure 8. Author statistics over time

5. Conclusion

In this study, we evaluated global publications on Internal Control and Business Performance indexed in the Google Scholar database published between 2013 and 2023 to provide information. details about the number of publications, journal of publication, keyword network and co-authorship network. This study used the bibliometric method with the help of a number of statistical and data visualization applications to explore research trends in the content of the relationship between internal control and business efficiency in enterprises.

Research results show that there have been a total of 184 articles on internal control and business efficiency in enterprises indexed in Google Scholar from 2013 to 2023. Statistical results show that this is an important topic attention in recent years, this is reflected in the high number of publications appearing in the period 2018-2023. In particular, there are many referenced articles and a large number of citations. In terms of keywords, there are 3 keywords of great interest: "internal control, operational efficiency and internal control system", these are keywords that appear nearly 200 times. In addition, there are also many authors who have participated in writing many articles, including authors BW Goh and JB Kim who have participated in writing 5 articles.

The research results have contributed to the general theoretical basis, serving as a basis for reference studies on the relationship between internal control and business performance in enterprises. Data collected from richer sources such as Scopus or Web of Science are suggestions for further research on the relationship between internal control and business performance in enterprises.

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