

Systematic Mapping of Corporate Social Responsibility Topics for 2015-2021 Based on Bibliometric Analysis

Dirvi Surya Abbas^{1*}, Tubagus Ismail², Helmi Yazid², Muhamad Taqi²

¹Department of Accounting, Universitas Muhammadiyah Tangerang, Banten, Indonesia

²Department of Accounting, Universitas Sultan Ageng Tirtayasa, Banten, Indonesia

*Correspondence: abbas.dirvi@gmail.com

Research aims: This study used bibliometric analysis to produce a comprehensive mapping of Corporate Social Responsibility research. This study examined changes in citations, publication trends, author collaboration, trend title, trend author keywords, trend abstract, nations, dominating factors, research development, and future research in corporate social responsibilities papers from the Scopus index with a range of 2015-2021.

Design/Methodology/Approach: This research employed bibliometric analysis methods. The research sample used was 1,567 articles with the keyword "Corporate Social Responsibility." The articles used were sourced from Scopus-indexed journals for 2015-2021, with the help of Publish or Perish (PoP). This bibliometric analysis utilized VOSviewer (VV).

Research findings: The year with the most citations, according to statistics, was 2016, with 8,549 citations. Regarding publication trends, most of the papers were published in 2020, namely 352. Mohammad Irfan and Bilal Afsan are the authors with the most networks/collaboration, as many as 332. The term 'Corporate Social Responsibility' is the most commonly used keyword in Corporate Social Responsibility articles. Four countries linked Corporate Social Responsibility to the research: 1) Pakistan, 2) Malaysia, 3) Italy, and 4) Indonesia. Co-occurrence network visualization explains the network or relationship from one term to another in research in the field of Corporate Social Responsibility for the 2015-2021 period. While the visual overlay represents keywords indicating the year of publication, the density visualization signifies research on a topic that is still very broad to be studied.

Theoretical contribution/Originality: These findings also indicate that it is essential to recognize the approaches and theories behind the development of Corporate Social Responsibility to determine the gradual nature of the aspects involved within it.

Practitioner/Policy implication: This article calls for greater engagement among academics and Corporate Social Responsibility researchers to more explicitly consider how their research can contribute to the understanding of Corporate Social Responsibility.

Research limitation/Implication: The limitation of this study is that it only used observation years from 2015-2021, preferably for future researchers to be able to add the most recent observation year. In addition, this study has not explored the application of the literature used; thus, the next researchers are preferably to develop this literature review with the help of other applications, such as Bliiblioshiny or R.

Keywords

Bibliometric;
Corporate Social
Responsibility; Digital
Library; Scopus

History

Submitted:
February, 11 2024

Revised:
February, 06 2024
February, 22 2024

Accepted:
February, 26 2024

DOI:
[10.18196/pas.v1i2.2](https://doi.org/10.18196/pas.v1i2.2)

Citation: Abbas, D. S., Ismail, T., Yazid, H., & Taqi, M. (2024). Systematic Mapping of Corporate Social Responsibility Topics for 2015-2021 Based On Bibliometric Analysis. *Public Accounting and Sustainability*, 2(1), 1-19.

Introduction

Scientometrics, often known as bibliometric methods, is a growing sort of methodology for appraising research from many sources of scientific publications (Abbas et al., 2021; Ellegaard & Wallin, 2015). Abbas et al (2021) and Reuters (2008) argue that the bibliometric technique, which employs a statistical methodology to incorporate quantitative analysis from literary sources, can provide the measurement. Citations reveal the impact of the research that has been conducted; thus, the study results indicate that these journals have functioned successfully, and researchers are expected to take these features into account (Abbas et al., 2021; De-Moya-Anegón et al., 2004; López-Robles et al., 2019). To examine portions or subjects of the bibliography

(metadata), bibliometric methods such as citation analysis (IF), publishing trends, author collaboration, agency collaboration, trend terms title, abstract, author keywords, country statistics, field trends studies, journals, and the public are used (Abbas et al., 2021; Taqi et al., 2021; Ye et al., 2020; Żarczyńska, 2012).

Despite the abundance of literature on Corporate Social Responsibility issues available through various research methods, no comprehensive study of bibliometrics has been published in Scopus-indexed journals. No bibliometric studies show that improving the quality of publications will enhance the quality of publications in the field. For this reason, bibliometric analysis is excellent and necessary to do (Ramos et al., 2004). Bibliometric analysis has been employed to map the number of published publications and citations from various literature (De-Moya-Anegón et al., 2004; Efron et al., 2012). The topics were investigated and explained qualitatively and quantitatively in bibliometric analysis (Velasco et al., 2012).

Because bibliometric research on Corporate Social Responsibility issues remains uncommon, finding examples of problem-posing analyses on bibliometric topics can be difficult. Assume one is interested in the most recent and far-reaching international development of articles on Corporate Social Responsibility from 2015 to 2021. In that case, the method used in the form of bibliometric analysis contributes to the novelty of the research assembled. Based on the preceding, the problem formulation for the research question is as follows:

- RQ₁:** What about the citations in the 2015-2021 Corporate Social Responsibility article?
- RQ₂:** What are the trends in the publication of Corporate Social Responsibility articles in 2015-2021?
- RQ₃:** How did authors collaborate on Corporate Social Responsibility articles in 2015-2021?
- RQ₄:** What are the trend terms in the title of the Corporate Social Responsibility articles in 2015-2021?
- RQ₅:** What are the trend terms of author keywords in Corporate Social Responsibility in 2015-2021?
- RQ₆:** What are the trend terms of abstracts in the Corporate Social Responsibility article in 2015-2021?
- RQ₇:** Which country conducts Corporate Social Responsibility research most frequently in 2015-2021?
- RQ₈:** What factors dominantly influence Corporate Social Responsibility articles for 2015-2021?
- RQ₉:** How is the development of Corporate Social Responsibility article research in 2015-2021?
- RQ₁₀:** What are the future research's objects regarding Corporate Social Responsibility?

Methodology

According to Kitchenham et al. (2010), a systematic literature review is defined as a process that identifies, evaluates, and interprets available research evidence to provide specific answers to research questions. A systematic literature review is also a method of investigating a body of scientific literature to generate insights, critical reflection, future research directions, and research questions (Dumay et al., 2016). Hahn and Kühnen (2013) advise on the five steps required to conduct a systematic literature review. Research questions come first, followed by material collection, selection and evaluation, synthesis and descriptive analysis, and results. This systematic literature review was created in stages, beginning with electronic article searches to identify a number of research journals from various scientific journal provider sites, in this case, Scopus.

Research Design

Bibliometrics uses mathematical and statistical methods to investigate patterns in the publication and use of materials like textbooks, journal articles, student dissertations, and other sources (Rohanda & Winoto, 2019). As part of a framework for discovering emerging technologies, institutional and international collaboration is encouraged (Russell & Rousseau, 2002).

Research Procedure

The search stage, filtering stage, bibliometric attribute inspection, and bibliometric analysis are the four stages of bibliometric analysis (Julia et al., 2020). The research was carried out in the following stages.

Examination Procedure Stage

Publish or Perish is a software or a search engine tool used to locate bibliographies as a starting point for data collection (Abbas et al., 2021). In this study, Scopus served as the primary data source for Publish or Perish (PoP) searches. As a result, Scopus has become one of the largest and most prestigious databases for peer-reviewed literature and publications. The bibliography for this study was limited in several ways. The first types of bibliographies used were journal articles, series books, novels, and conference papers. The second was "Corporate Social Responsibility." The chosen keywords were referred to as "Social Corporate." The search was restricted to the years 2015 to 2021.

Bibliography Selection Stage

It was carried out to sort or select the journals evaluated. The types of data that were downloaded and used were journal articles indexed by Elsevier and Emerald. In its initial search results, the PoP program returned 1,357 bibliographies (see Table 1). A total of 1,357 bibliographies were then selected for investigation. Some bibliographies were not chosen because they did not meet the requirements.

Table 1 Bibliographic Selection Results

Publication Year	Selected	Non-Selected	Total
2015	204	0	204
2016	222	0	222
2017	158	0	158
2018	226	0	226
2019	167	0	167
2020	352	0	352
2021	28	0	28
Total	1,357	0	1,357

Bibliographic Attribute Stage

The Mendeley program was utilized to save files from library reference sources for later review. The bibliographic metadata was double-checked and found to be complete for bibliographic analysis. Filters were then verified for author name, article title, author keywords, abstract, year, volume, issue number, page, country, number of citations, article links, and publisher. After the metadata was completed, the bibliometric analysis began.

Bibliometric Analysis Stage

The wording of the identified problem was used as the criterion for bibliometric analysis. VOSviewer can be used to run a bibliometric analysis and display the results. VOSviewer was used because it is safe and efficient when dealing with large amounts of data and can provide a variety of visuals for presentations, investigations, and other purposes.

Results and Discussions

Citation Analysis

In scientific academia, the value of publishing scientific works can be measured in several ways, one of which is by the number of times other scholars mentioned the works; only then could the work be considered useful. The majority of works mentioned or occasionally cited reveal the work as a topic of debate or discussion among researchers. According to the findings of this study's citation analysis, there were 33,372 citations per year from 2015 to 2021. Citation patterns exposed a wide range of patterns. In addition, the year with the most citations was 2016, with 8,549 citations, followed by 2015 (8,120 citations), 2017 (6,545 citations), 2019 (4,343 citations), 2018 (4,020 citations), 2020 (1,249 citations), and 2021 (546 citations). Moreover, S. Saedi's paper received 497 citations, K.V. Lins' paper received 452 citations, and C. Flammer's paper received 360 citations. There were several articles with an average of 254 citations that had not yet been cited.

Publication Trend Analysis

Determining the quantity is the purpose of computing the number of studies published in scientific journals and periodicals by productive researchers and authors (Taqi et al., 2021; Velasco et al., 2012). In general, there has been a decrease and increase in the publication of articles on Corporate Social Responsibility over the previous five years. This pattern indicates that article authors from various countries are increasingly interested in the topic of Corporate Social Responsibility.

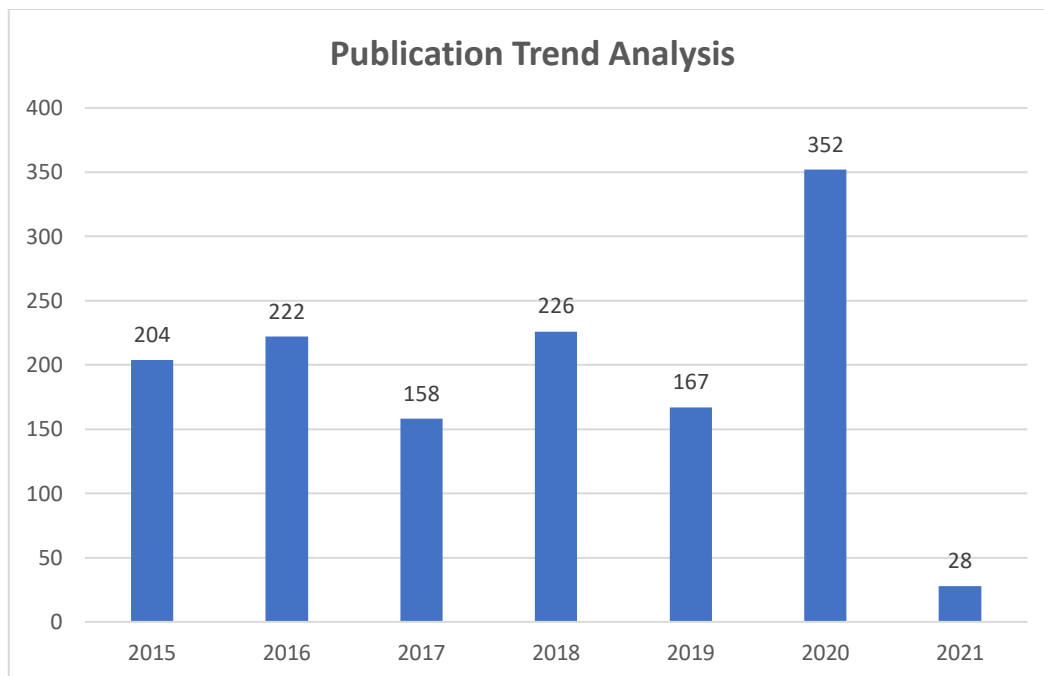


Figure 1 Publication of Corporate Social Responsibility Articles from 2015-2021

Based on figure 1, it is known that there are three clusters of publication trends with the theme Corporate Social Responsibility from 2015 – 2021. The first type of cluster, occurred in 2017, 2019 and 2021, with low publication rates. The second cluster, occurring in 2015, 2016 and 2018, with moderate publication rates. The third cluster, occurring in 2020, with a high publicity rate.

Author Collaboration Analysis

Because research is not usually done independently, collaborative writing is required (Ellegaard & Wallin, 2015; Rohanda & Winoto, 2019). As a result, there is the opportunity for researchers and agencies to

collaborate on ideas, resources, and facilities, as well as share information, skills, and specific approaches in science (Ellegaard & Wallin, 2015).

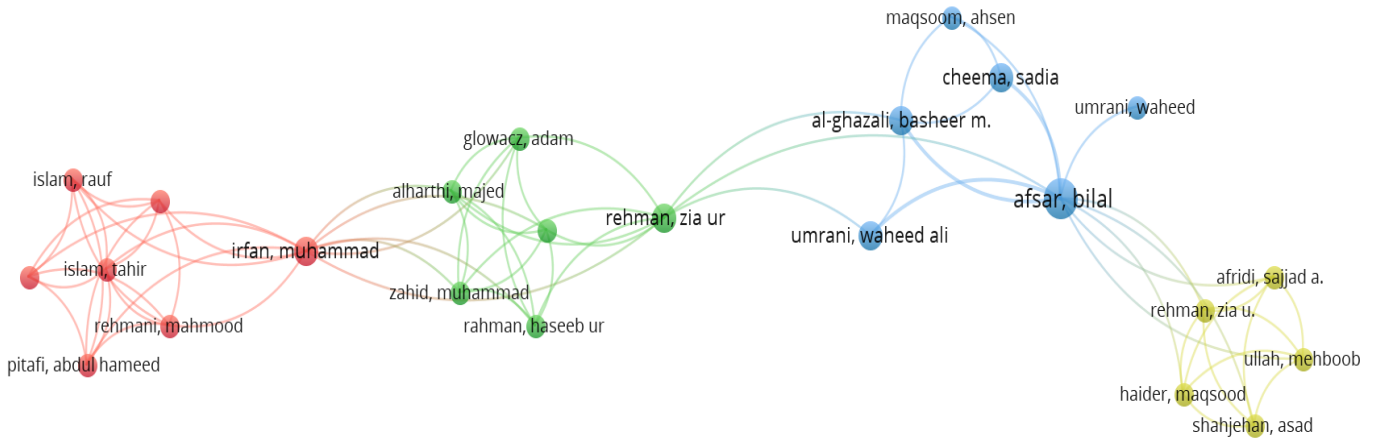


Figure 2 Author collaboration visualization

Among the 1,758 writers in this study, Mohammad Irfan, Zia ur Rehman and Bilal Afsan showed a strong correlation (See Figure 2). Each author is a member of one of the various networking groups. The author with the most networking was Mohammad Irfan.

Trend Analysis of Title Terms

This study examined the content, patterns, and trends of a collection of documents by analyzing the strength of phrases and counting the number of keywords from a research paper at the same time (Abbas et al., 2021; Chen, 2003; Russell & Rousseau, 2002).

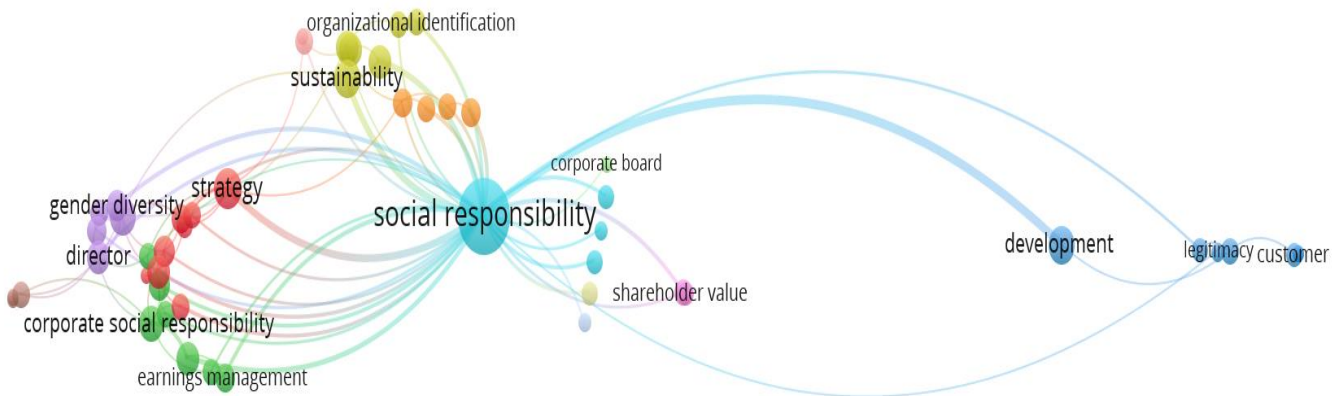


Figure 3 Visualization of terms in the articles titled Corporate Social Responsibility

Based on the minimal number of occurrences of each criterion, the findings were deemed to be 1.525 relevant. The word "social responsibility" in the headline was the most frequently used in Corporate Social Responsibility articles, with 1.525 occurrences (see Figure 3).

The Country That Most Frequently Conducts Corporate Social Responsibility Research

Based on the search results in titles and abstracts with 10,346 items and a minimum of 10 events, 267 keywords were generated in titles and abstracts by identifying four countries with strong ties to the most recent Corporate Social Responsibility discussions (Figure 6). The author most frequently used the term 'Indonesia and Italy' with ten events, followed by the term 'Malaysia' with 19 events, and the country of Pakistan with 49 events.



Figure 6 Visualization of countries that most frequently conduct Corporate Social Responsibility research

Analysis of the Dominant Factors Influencing Corporate Social Responsibility

In this stage, the dataset was stored in the RIS (Research Information Systems) type using Publish or Perish metadata. The dataset was then analyzed utilizing the VOSviewer application by selecting the data option 'create a map based on text data' with the aim of creating networks or term relationships based on text data. The field of terms was extracted based on the title and abstract, while the method used to calculate the dataset was a full calculation with the aim of gauging in accordance with research related to the field of Corporate Social Responsibility that had been carried out. The minimum number of occurrences in a term was 445 documents with an occurrence relationship.

Typically, bibliometric analysis is carried out by creating visualizations in the form of network, overlay, and density, which aims to determine the bibliometric network between articles or online publications from metadata that has been downloaded. A bibliometric network consists of nodes in the form of spheres or circles that represent keywords, while edges or network nodes represent relationships between pairs of nodes. Mapping and clustering in bibliometric analysis through VOSviewer software are complementary, which means they complement each other. This mapping can be used to get a detailed picture of the structure of a bibliometric network. In addition, clustering is used to show an overview or insight into bibliometric groupings.

Figure 7 depicts network visualization in co-occurrence, explaining networks or relationships from one term to another in research in the field of Corporate Social Responsibility in the period 2015 – 2021. Of the 445 articles indexed by Scopus, they could be grouped into nine clusters that could be identified by the color of each keyword's node (see Table 2).

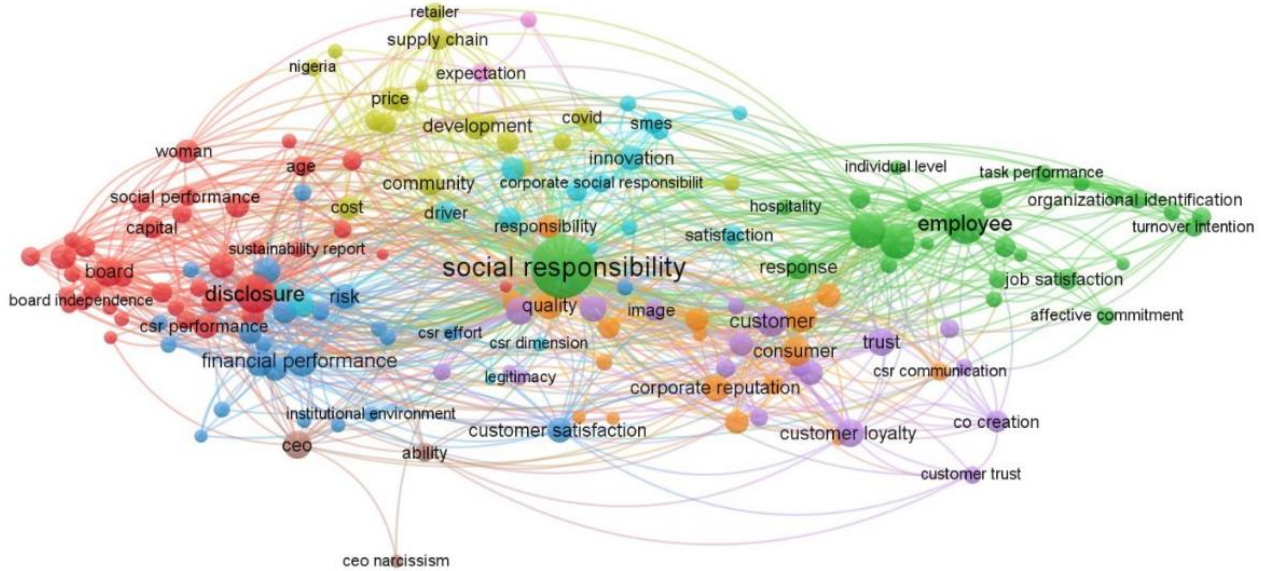


Figure 7 Network visualization in co-occurrence

Table 2 Cluster Variables Based on Co-occurrence








Cluster	Node Color	Item	Sources Total
Cluster-1		Age, board, board characteristic, board composition, board diversity, board gender diversity, board independence, board size, brand equity, capital, CEO power, CEO tenure, corporate governance mechanism, corporate social performance, Corporate Social Responsibility disclosure, CSR commitment, CSR performance, CSR reporting, director, disclosure, diversity, environmental performance, family, family firm, female director, firm size, firm-year observation, gender, gender diversity, independent director, Indonesia, Malaysia, ownership structure, presence, shareholder, social performance, stakeholder engagement, sustainability report, and woman	39
Cluster-2		Affective commitment, behavior, brand attitude, CSR perception, employee, employee engagement, ethical leadership, hospitality, individual level, job performance, job satisfaction, managerial implication, organizational citizenship behavior, organizational commitment, organizational identification, organizational performance, organizational pride, perception, response, social identity theory, social responsibility, structural equation, task performance, turnover intention, and university	25
Cluster-3		Asset, corporate financial performance, corporate social irresponsibility, CSR action, CSR effort, customer satisfaction, equity, ESG, financial performance, firm financial performance, firm performance, firm value, firms' financial performance, institutional environment, investment, investor, managerial summary, market value, profitability, return, risk, shareholder value, and social capital	23

Table 2 Cluster Variables Based on Co-occurrence

Cluster	Node Color	Item	Sources Total
Cluster-4		Challenge, community, corporate sustainability, cost, COVID, demand, development, human resource management, marketing, Nigeria, opportunity, pandemic, price, product, profit, region, retailer, rural woman, social sustainability, supplier, and supply chain	21
Cluster-5		Bank, brand image, co-creation, conceptual model, corporate image, Corporate Social Responsibility initiative, customer, customer company identification, customer loyalty, customer trust, hotel, image, Islamic bank, legitimacy, loyalty, Pakistan, structural equation modeling, tourism industry, and trust	19
Cluster-6		Collaborative innovation, construction industry, corporate governance, Corporate Social Responsibility practice, CSR dimension, driver, earnings management, enterprise, environmental management, environmental responsibility, innovation, medium-sized enterprise, motivation, SME, SMEs, and sustainable development	16
Cluster-7		Attitude, awareness, consumer, corporate brand, corporate reputation, credibility, CSR communication, engagement, environmental concern, intention, Italy, public, quality, responsibility, and social medium. Cluster 8, symbolized by the color brown, consists of terms such as ability, CEO, and CEO narcissism.	15
Cluster-8		Ability, CEO, CEO narcissism	3
Cluster-9		Expectations and gender difference	2

Note: Selected variables influencing “Corporate Social Responsibility” based on network visualization in co-occurrence, explaining networks or relationships from one term to another in research in the field of Corporate Social Responsibility in the period 2015 – 2021

The Development Analysis of Research





After identifying the mapping and clustering of the field of Corporate Social Responsibility using network visualization, the next step was to map and cluster Corporate Social Responsibility research trends based on historical traces or the year of publication of the research. Information was obtained from the results of overlay visualization in Figure 8. It could be used as a reference to identify and detect the state of the art from research in the field of Corporate Social Responsibility conducted in the period 2015 – 2021.

From the results of bibliometric analysis through Publish or Perish metadata imported into VOSviewer software, an Overlay visualization was produced. In this visualization, the colors in the nodes represent keywords indicating the year published.

Table 3 Publication of Variables Based on Co-occurrence (Cont.)

Node Color	Year of Publication	Item	SourcesTotal
	2020	Board independence, board size, brand equity, CEO tenure, corporate governance mechanism, CSR commitment, CSR performance, environmental performance, gender, Malaysia, ownership structure, presence, shareholder, social performance, CSR perception, hospitality, organizational pride, structural equation, task performance, firm financial performance, firms financial performance, shareholder value, Nigeria, rural woman, supplier, supply chain, co-creation, customer company identification, customer loyalty, hotel, Islamic bank, Pakistan, CSR dimension, environmental management, sustainable development, environmental concern, social medium. ability, CEO,	39
	2021	Brand attitude, covid, pandemic, customer trust, collaborative innovation,	5

Source: Selected variables influencing "Corporate Social Responsibility" based on overlay visualization in co-occurrence, representing keywords that indicate the year published.

For example in Table 3, the keywords 'Board composition, board diversity, board gender diversity, CEO power and 70 other designations' have colored nodes . This means that articles containing these keywords were published between 2017 and 2018. Another example is the term 'Age, board, board characteristic, capital and 40 other designations,' which is depicted as having colored nodes  in the overlay visualization. This indicates that researchers discussed Corporate Social Responsibility in 2019. Another one is the keyword 'Board independence, the board size, brand equity, CEO tenure, and 35 other designations,' with the node color . In other words, the terms have already been attached to the field of Corporate Social Responsibility and began to be discussed by researchers in 2019-2020. Finally, the keywords 'Brand attitude, COVID, pandemic, customer trust, and collaborative innovation,' which has a node color , were the designations that researchers began discussing in 2021.

Here, brand attitude is a comprehensive assessment of consumers or a company advantage that is valued well by the community. Companies with corporate advantages are always consistent in conducting social activities. In addition, COVID and the pandemic are phenomena that occurred in 2019-2021, which has resulted in many losses throughout the country, especially in health and economic aspects. Many companies at that time carried out social activities with the aim of being humanitarian and helping the country's problems. Then, customer trust is consumer confidence in the company's ability to provide the best product or service. Not a few companies between countries cooperated with the aim of finding vaccines and improving the economy in their respective countries through social assistance when the COVID pandemic hit various countries. Next, collaborative innovation is an innovation combination of activities, such as research, exchange, product prototyping, testing, and product development. After the post-COVID pandemic has been passed, collaborative innovation between cross-border companies is still being carried out. This aims to carry out product development and social activities.

The Analysis of Future Research Object

The following is a bibliometric analysis using density visualization. From the visualization illustrated in Figure 9, it can be identified that there were dense or high-density areas on one node with another. The saturation level identified in the number of keywords marked in yellow means that the area is a topic that has been widely researched and indexed by Scopus, such as the keywords disclosure, corporate governance, development, response, employee, and customer engagement. Meanwhile, nodes marked with dark colors

Table 4 The Topic of Variables Based on Co-occurrence with Very Broad Potential to be Researched (Cont.)

Keyword	Year	Title	Authors	Description
CSR communication	2018	The role of Corporate Social Responsibility (CSR) and internal CSR communication in predicting employee engagement: Perspectives from the United Arab Emirates (UAE)	Duthler and Dhanesh, 2018	Journal Name: Public Relations Review Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85045101229&origin=inward
	2019	The Process Model of Corporate Social Responsibility (CSR) Communication: CSR Communication and its Relationship with Consumers' CSR Knowledge, Trust, and Corporate Reputation Perception	Kim, 2019	Journal Name: Journal of Business Ethics Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85009796970&origin=inward
	2020	Consumers' engagement with Corporate Social Responsibility (CSR) communication in social media: Evidence from China and the United States	Chu et al., 2020	Journal Name: Journal of Business Research Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85078813539&origin=inward
Co-creation	2019	Customer value co-creation in the business-to-business tourism context: The roles of Corporate Social Responsibility and customer empowering behaviors	Tuan et al., 2019	Journal Name: Journal of Hospitality and Tourism Management Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85063760207&origin=inward
	2020	Co-creation: A Key Link Between Corporate Social Responsibility, Customer Trust, and Customer Loyalty	Iglesias et al., 2020	Journal Name: Journal of Business Ethics Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85053600156&origin=inward
	2020	How Co-creation Increases Employee Corporate Social Responsibility and Organizational Engagement: The Moderating Role of Self-Constraint	Simpson et al., 2020	Journal Name: Journal of Business Ethics Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85062985517&origin=inward

Table 4 The Topic of Variables Based on Co-occurrence with Very Broad Potential to be Researched (Cont.)

Keyword	Year	Title	Authors	Description
Brand attitude	2019	Business ethics, Corporate Social Responsibility, and brand attitudes: An exploratory study	Ferrell et al., 2019	Journal Name: Journal of Business Research Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85050921024&origin=inward
	2020	Impact of corporate social responsibilities on customer responses and brand choices	Han et al., 2020	Journal Name: Journal of Travel and Tourism Marketing Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85083506108&origin=inward
	2020	Perceived Corporate Social Responsibility and customers' behaviors in the ridesharing service industry	Jeon et al., 2020	Journal Name: International Journal of Hospitality Management Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85069635367&origin=inward
COVID, pandemic	2020	Corporate Social Responsibility during COVID-19 pandemic	García-Sánchez and García-Sánchez, 2020	Journal Name: Journal of Open Innovation: Technology, Market, and Complexity Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85094637098&origin=inward
	2021	Can Corporate Social Responsibility protect firm value during the COVID-19 pandemic?	Qiu et al., 2021	Journal Name: International Journal of Hospitality Management Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85096857371&origin=inward
	2021	Corporate Social Responsibility Amid Social Distancing During the COVID-19 Crisis: BRICS vs. OECD Countries	Popkova et al., 2021	Journal Name: Research in International Business and Finance Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85090050241&origin=inward
Customer trust	2020	'To trust or not to trust': The impact of social media influencers on the reputation of corporate brands in crisis	Singh et al., 2020	Journal Name: Journal of Business Research Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85083165405&origin=inward

Table 4 The Topic of Variables Based on Co-occurrence with Very Broad Potential to be Researched (Cont.)

Keyword	Year	Title	Authors	Description
Collaborative innovation	2020	Co-creation: A Key Link Between Corporate Social Responsibility, Customer Trust, and Customer Loyalty	Iglesias et al., 2020	Journal Name: Journal of Business Ethics Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=8505360156&origin=inward
	2019	Perceived Corporate Social Responsibility's Impact on the Well-being and Supportive Green Behaviors of Hotel Employees: The mediating role of the employee-corporate relationship	Su and Swanson, 2019	Journal Name: Tourism Management Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85060078541&origin=inward
	2020	Corporate Social Responsibility and collaborative innovation: The role of government support	Ji and Miao, 2020	Journal Name: Journal of Cleaner Production Journal Link: https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85081647720&origin=inward

Note: Selected variables influencing “corporate social responsibility” based on density visualization in co-occurrence, representing research on the topic that is still very broad to be studied.

Based on table 4, several keyword variables can be described which indicate that research on Corporate Social Responsibility related to these variables is still relatively low, thus making studies on this topic can be investigated widely. The following is an explanation related to the study of these variables. First, the CEO narcissism variable, the discussion of the relationship of the CEO narcissism variable to corporate social responsibility can refer to Tang et al (2018) and Al-Shammari et al (2019). Second, corporate brand variables, discussion of the relationship of corporate brand variables to corporate social responsibility can refer to Tuškej and Podnar (2018). Third, CSR communication variables, discussion of the relationship of CSR communication variables to corporate social responsibility can refer to Duthler and Dhanesh (2018), Kim (2019), Chu et al. (2020). Fourth, variable co-creation, discussion of the relationship of variable co-creation to corporate social responsibility can refer to Tuan et al. (2019), Iglesias et al. (2020), and Simpson et al. (2020). Fifth, variable brand attitude, discussion of the relationship of variable brand attitude to corporate social responsibility can refer to Ferrell et al. (2019), Han et al. (2020), and Jeon et al. (2020). Sixth, COVID-19 variables, discussion of the relationship of COVID-19 variables to corporate social responsibility can refer to García-Sánchez & García-Sánchez (2020), Qiu et al. (2021) and Popkova et al. (2021). Seventh, Customer Trust Variable, Discussion of the Variable Relationship of Customer Trust to Corporate Social Responsibility can refer to Singh et al (2020) and Iglesias et al. (2020). Eighth, Collaborative Innovation Variable, Discussion of the Relationship of Collaborative Innovation Variable to Corporate Social Responsibility can refer to Su and Swanson (2019), and Ji and Miao (2020).

The analysis object future research

Based on the visualization results in Figure 9, CEO narcissism, corporate brand, CSR communication, co-creation, brand attitude, COVID-19, pandemic, customer trust, and collaborative innovation were variables that were still slightly correlated with Corporate Social Responsibility. This is reinforced by the visualization in Figure 10, marked by the small number of nodes for each variable.



Figure 10 Visualization of future research's object

Conclusion

This bibliometric research presents quantitative description research. Therefore, this study can only present a general view of the performance of Corporate Social Responsibility research. For bibliometric reviews and producing higher quality research results, there should be no waste in or waste out; determining inclusion and exclusion criteria and the quality of research included in the review must be strict. According to citation analysis, there were increases and decreases in citations for Corporate Social Responsibility publications from 2015 to 2021. In 2016, the maximum number of citations was recorded, but in 2021, the number of citations decreased drastically. Over the previous seven years, there has been an overall reduction and increase in the number of articles published on Corporate Social Responsibility. The largest number of papers published was in 2020, while the lowest was in 2021.

The author's involvement in the article on Corporate Social Responsibility is sufficient. Among the 1,758 writers in this study, Mohammad Irfan and Bilal Afsan showed a strong correlation. 'Social responsibility' was the phrase in the title that appeared the most in Corporate Social Responsibility publications, with 1,525 occurrences. With 332 channels, the term 'Corporate Social Responsibility' is the most commonly used keyword in the articles. With 602 occurrences in the abstract, the phrase 'CSR' is the most commonly used in articles on Corporate Social Responsibility. In addition, four countries linked Corporate Social Responsibility to research: Pakistan, Malaysia, Italy, and Indonesia.

Network visualization in co-occurrence explains networks or relationships from one term to another in research in the field of Corporate Social Responsibility in the period 2015 – 2021. Of the 445 articles indexed by Scopus, they could be grouped into nine clusters that could be identified by the color of each keyword's node: Cluster-1, with 39 sources; Cluster-2, with 25 sources; Cluster-3, with 23 sources; Cluster-4, with 21 sources; Cluster-5, with 19 sources; Cluster-6, with 16 sources; Cluster-7, with 15 sources; Cluster-8, with 3 sources; and Cluster-9, with 2 sources.

Moreover, mapping and clustering corporate social responsibility research trends were based on historical traces or years of publication of research. The information obtained from the overlay visualization results could later be used as a reference to identify and detect the state of the art from research in the field of Corporate Social Responsibility conducted in the period 2015 – 2021. The overlay visualization results revealed that 74 sources were used as keywords related to Corporate Social Responsibility in 2018. In 2019, 43 sources were used as keywords related to Corporate Social Responsibility. In 2020, 39 sources were used as keywords related to corporate social responsibility, and in 2021, five sources were used as keywords related to corporate social responsibility.

Further, density visualization can identify dense or high-density areas on one node with another. The saturation level identified in the number of keywords marked in yellow means that the area is a topic that has been widely researched and indexed by Scopus, such as the keywords disclosure, corporate governance, development, response, employee, and customer engagement. In comparison, nodes marked with dark colors indicate that these topics are still not widely studied. This can foster opportunities to conduct research on these topics, i.e., the keywords of CEO narcissism, corporate brand, CSR communication, co-creation, brand attitude, COVID-19, pandemic, customer trust, and collaborative innovation connected to the field of Corporate Social Responsibility. With bibliometric analysis on density visualization displaying low strain and intensity, it signifies that research on Corporate Social Responsibility related to these variables remains relatively low. In other words, this makes studies on the topic still very broad and needs to be scrutinized.

The limitation of this study is that it only used observation years from 2015 to 2021. Hence, future researchers should preferably add the most recent observation year. In addition, this study has not explored the application of the literature used. For that, the next researcher is recommended to develop this literature review with the help of other applications, such as Biblioshiny or R.

Acknowledgment

The authors thank the editor and anonymous reviewers of public accounting and sustainability for their useful suggestions.

References

- Abbas, D. S., Ismail, T., Taqi, M., & Yazid, H. (2021). Systematic Mapping In The Topic Of Knowledge Management: Based On Bibliometric Analysis 2015 - 2021. *Library Philosophy and Practice (e-Journal)*, *Spring (2021)*, 6242.
- Al-Shammari, M., Rasheed, A., & Al-Shammari, H. A. (2019). CEO narcissism and corporate social responsibility: Does CEO narcissism affect CSR focus? *Journal of Business Research*, *104*, 106–117. <https://doi.org/10.1016/j.jbusres.2019.07.005>
- Chen, C. (2003). Mapping the Mind. In *Mapping Scientific Frontiers: The Quest for Knowledge Visualization*, 51(08), 67–99. Springer London. https://doi.org/10.1007/978-1-4471-0051-5_3
- Chu, S. C., Chen, H. T., & Gan, C. (2020). Consumers' engagement with corporate social responsibility (CSR) communication in social media: Evidence from China and the United States. *Journal of Business Research*, *110*, 260–271. <https://doi.org/10.1016/j.jbusres.2020.01.036>
- De-Moya-Anegón, F., Chinchilla-Rodríguez, Z., Corera-Álvarez, E., Muñoz-Fernández, F. J., & Navarrete-Cortés, J. (2004). Indicadores bibliométricos de la actividad científica española:(ISI, Web of science, 1998-2002). FECYT-Ministerio de Educación y Ciencia, Spain.
- Dumay, J., Bernardi, C., Guthrie, J., & Demartini, P. (2016). Integrated reporting: A structured literature review. *Accounting Forum*, *40*(3), 166–185. <https://doi.org/10.1016/j.accfor.2016.06.001>
- Duthler, G., & Dhanesh, G. S. (2018). The role of corporate social responsibility (CSR) and internal CSR communication in predicting employee engagement: Perspectives from the United Arab Emirates (UAE). *Public Relations Review*, *44*(4), 453–462. <https://doi.org/10.1016/j.pubrev.2018.04.001>
- Efron, N., Brennan, N. A., & Nichols, J. J. (2012). Citation analysis of the contact lens field. *Optometry and Vision Science*, *89*(1), 70–79. <https://doi.org/10.1097/OPX.0b013e318236dcca>
- Ellegaard, O., & Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact? *Scientometrics*, *105*(3), 1809–1831. <https://doi.org/10.1007/s11192-015-1645-z>
- Ferrell, O. C., Harrison, D. E., Ferrell, L., & Hair, J. F. (2019). Business ethics, corporate social responsibility, and brand attitudes: An exploratory study. *Journal of Business Research*, *95*(July), 491–501. <https://doi.org/10.1016/j.jbusres.2018.07.039>
- García-Sánchez, I. M., & García-Sánchez, A. (2020). Corporate social responsibility during COVID-19 pandemic. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 1–21. <https://doi.org/10.3390/joitmc6040126>

- Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, 59, 5–21. <https://doi.org/10.1016/j.jclepro.2013.07.005>
- Han, H., Yu, J., Lee, K. S., & Baek, H. (2020). Impact of corporate social responsibilities on customer responses and brand choices. *Journal of Travel and Tourism Marketing*, 37(3), 302–316. <https://doi.org/10.1080/10548408.2020.1746731>
- Iglesias, O., Markovic, S., Bagherzadeh, M., & Singh, J. J. (2020). Co-creation: A Key Link Between Corporate Social Responsibility, Customer Trust, and Customer Loyalty. *Journal of Business Ethics*, 163(1), 151–166. <https://doi.org/10.1007/s10551-018-4015-y>
- Jeon, M. M., Lee, S., & Jeong, M. (2020). Perceived corporate social responsibility and customers' behaviors in the ridesharing service industry. *International Journal of Hospitality Management*, 84. <https://doi.org/10.1016/j.ijhm.2019.102341>
- Ji, H., & Miao, Z. (2020). Corporate social responsibility and collaborative innovation: The role of government support. *Journal of Cleaner Production*, 260. <https://doi.org/10.1016/j.jclepro.2020.121028>
- Julia, J., Supriatna, E., Isrokatur, I., Aisyah, I., Nuryani, R., & Odeode, A. A. (2020). Moral Education (2010-2019): A Bibliometric Study (Part 1). *Universal Journal of Educational Research*, 8(6), 2554–2568. <https://doi.org/10.13189/ujer.2020.080639>
- Kim, S. (2019). The Process Model of Corporate Social Responsibility (CSR) Communication: CSR Communication and its Relationship with Consumers' CSR Knowledge, Trust, and Corporate Reputation Perception. *Journal of Business Ethics*, 154(4), 1143–1159. <https://doi.org/10.1007/s10551-017-3433-6>
- Kitchenham, B., Pretorius, R., Budgen, D., Brereton, O. P., Turner, M., Niazi, M., & Linkman, S. (2010). Systematic literature reviews in software engineering—A tertiary study. *Information and Software Technology*, 52(8), 792–805. <https://doi.org/10.1016/j.infsof.2010.03.006>
- López-Robles, J. R., Guallar, J., Otegi-Olaso, J. R., & Gamboa-Rosales, N. K. (2019). El profesional de la información (Epi): Bibliometric and thematic analysis (2006-2017). *Profesional de La Informacion*, 28(4), 1–23. <https://doi.org/10.3145/epi.2019.jul.17>
- Popkova, E., DeLo, P., & Sergi, B. S. (2021). Corporate Social Responsibility Amid Social Distancing During the COVID-19 Crisis: BRICS vs. OECD Countries. *Research in International Business and Finance*, 55. <https://doi.org/10.1016/j.ribaf.2020.101315>
- Qiu, S. (Charles), Jiang, J., Liu, X., Chen, M. H., & Yuan, X. (2021). Can corporate social responsibility protect firm value during the COVID-19 pandemic? *International Journal of Hospitality Management*, 93. <https://doi.org/10.1016/j.ijhm.2020.102759>
- Ramos, J. M., Gutiérrez, F., Masía, M., & Martín-Hidalgo, A. (2004). Publication of European Union research on infectious diseases (1991-2001): A bibliometric evaluation. *European Journal of Clinical Microbiology and Infectious Diseases*, 23(3), 180–184. <https://doi.org/10.1007/s10096-003-1074-4>
- Reuters, T. (2008). Whitepaper Using Bibliometrics : Thomson Reuters, 12.
- Rohanda, R., & Winoto, Y. (2019). Analisis Bibliometrika Tingkat Kolaborasi, Produktivitas Penulis, Serta Profil Artikel Jurnal Kajian Informasi & Perpustakaan Tahun 2014-2018. *Pustabiblia: Journal of Library and Information Science*, 3(1), 1. <https://doi.org/10.18326/pustabiblia.v3i1.1-16>
- Russell, J. M., & Rousseau, R. (2002). Bibliometrics And Institutional Evaluation. *Science And Technology Policy*, 11, 42–46. http://www.vub.ac.be/BIBLIO/itp/lecturers/ronald_rousseau/ronald_rousseau_stim1_bibliometrics_russell.pdf <http://www.eolss.net/Sample-Chapters/C15/E1-30-04-04.pdf>
- Simpson, B., Robertson, J. L., & White, K. (2020). How Co-creation Increases Employee Corporate Social Responsibility and Organizational Engagement: The Moderating Role of Self-Constraint. *Journal of Business Ethics*, 166(2), 331–350. <https://doi.org/10.1007/s10551-019-04138-3>
- Singh, J., Crisafulli, B., Quamina, L. T., & Xue, M. T. (2020). 'To trust or not to trust': The impact of social media influencers on the reputation of corporate brands in crisis. *Journal of Business Research*, 119, 464–480. <https://doi.org/10.1016/j.jbusres.2020.03.039>
- Su, L., & Swanson, S. R. (2019). Perceived corporate social responsibility's impact on the well-being and supportive green behaviors of hotel employees: The mediating role of the employee-corporate relationship. *Tourism Management*, 72, 437–450. <https://doi.org/10.1016/j.tourman.2019.01.009>
- Tang, Y., Mack, D. Z., & Chen, G. (2018). The differential effects of CEO narcissism and hubris on corporate social responsibility. *Strategic Management Journal*, 39(5), 1370–1387. <https://doi.org/10.1002/smj.2761>
- Taqi, M., Rahmawati, R., Bandi, B., Payamta, P., & Rusydiana, A. S. (2021). Audit Quality Research: A Bibliometric Analysis. *Library Philosophy and Practice (e-Journal) and Practice*, 5221.

- Tuan, L. T., Rajendran, D., Rowley, C., & Khai, D. C. (2019). Customer value co-creation in the business-to-business tourism context: The roles of corporate social responsibility and customer empowering behaviors. *Journal of Hospitality and Tourism Management*, 39, 137–149. <https://doi.org/10.1016/j.jhtm.2019.04.002>
- Tuškej, U., & Podnar, K. (2018). Consumers' identification with corporate brands: Brand prestige, anthropomorphism and engagement in social media. *Journal of Product and Brand Management*, 27(1), 3–17. <https://doi.org/10.1108/JPBM-05-2016-1199>
- Velasco, B., Eiros Bouza, J. M., Pinilla, J. M., & San Román, J. A. (2012). The use of bibliometric indicators in research performance assessment. *Aula Abierta*, 40(2), 75–84. <http://dialnet.unirioja.es/servlet/articulo?codigo=3920967&info=resumen&idioma=ENG>
- Ye, N., Kueh, T. B., Hou, L., Liu, Y., & Yu, H. (2020). A bibliometric analysis of corporate social responsibility in sustainable development. *Journal of Cleaner Production*, 272. <https://doi.org/10.1016/j.jclepro.2020.122679>
- Żarczyńska, A. (2012). Nicola De Bellis: bibliometrics and citation analysis, from the science citation index to cybermetrics, Lanham, Toronto, Plymouth 2009. *Toruńskie Studia Bibliologiczne*, 8(1), 155-157. <https://doi.org/10.12775/TSB.2012.009>

About the author(s)

Dirvi Surya Abbas (D.S.A.) is a lecturer at Department of Accounting, Universitas Muhammadiyah Tangerang, Indonesia. His research interest covers Accounting, Finance, Tax, Audit, Accounting Sector Public and Islamic accounting, Sustainability responsibility. Email address: abbas.dirvi@gmail.com

Tubagus Ismail (T.I) is a lecturer at Department of Accounting, Universitas Sultan Ageng Tirtayasa, Indonesia. His research interest covers Management Control System, Audit, Finance, Tax, and Accounting. Email address: adeismail73@gmail.com

Helmi Yazid (H.Y) is a lecturer at Department of Accounting, Universitas Sultan Ageng Tirtayasa, Indonesia. His research interest covers Audit, Finance, Tax, and Islamic accounting. Email address: helmiyazid@untirta.ac.id

Muhamad Taqi (M.T) is a lecturer at Department of Accounting, Universitas Sultan Ageng Tirtayasa, Indonesia. His research interest covers Audit, Finance, Tax, and Corporate Governance. Email address: muhamad.taqi@untirta.ac.id

Author(s) contributions

Conceptualisation, D.S.A., T.I, H.Y, and M.T.; Methodology, D.S.A and T.I.; Investigation, D.S.A and M.T.; Analysis, D.S.U and H.Y.; Original draft preparation, D.S.A.; Review and editing, D.S.A.; Visualization, D.S.A.; Supervision, T.I, H.Y, and M.T.; Project administration, D.S.A., T.I, H.Y, and M.T.; Funding acquisition, D.S.A., T.I, H.Y, and M.T.

Conflicts of interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.