Characterization of CSR, ESG, and Corporate Citizenship through a Text Mining-Based Review of Literature

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Abstract: As the social and environmental roles of companies have been emphasized by various stakeholders, the concepts of CSR (corporate social responsibility), ESG (environmental, social, governance), and corporate citizenship have received a great deal of attention in academia and industry. To understand and distinguish corporate responsibility approaches in the literature, this study employs text mining techniques to comprehensively analyze the summary information of 1235 articles (i.e., title, abstract, and keywords) on CSR, ESG, and corporate citizenship. First, frequently occurring terms in text datasets related to CSR, ESG, and corporate citizenship are analyzed to extract conceptual commonalities and differences. Then, correlated topic modeling is applied to the collected text datasets to identify underlying topics widely discussed in CSR, ESG, and corporate citizenship related studies. The results of this study show that corporate citizenship is not only a high-level concept that encompasses ESG and CSR, but also a broad concept with missions that are associated with various societal areas. The findings from this study also reveal that employees, as the principal agents of corporate citizenship practice, are more critical than other stakeholders of corporate citizenship practice.

Keywords: corporate citizenship; CSR; ESG; text mining; correlated topic modeling

1. Introduction

Recently, the concept of corporate citizenship that discusses corporate responsibilities and roles has received increasing attention from academia and corporate leaders. Corporate citizenship has been conceptualized with various definitions in the literature. For example, corporate citizenship was addressed as the fulfillment of responsibilities for four faces (i.e., economic, legal, ethical, and philanthropic faces) [1], the extent to which companies satisfy economic, legal, ethical, and discretionary responsibilities associated with stakeholders [2], understanding and managing an organization to minimize negative and maximize positive societal impacts [3], and connecting corporate activities to social accountability for mutual benefits [4].

Although the concepts of corporate citizenship in the literature have subtle differences across the definitions, they are generally related to concepts such as social responsiveness, social contribution, sustainability, and relationship [5–7]. However, these concepts require further clarification for companies and amplify the abstract conceptualization of corporate citizenship. This hampers companies to successfully implement the role of corporate citizenship for various stakeholders. Moreover, other corporate values closely associated with corporate citizenship such as CSR (Corporate Social Responsibility), sustainable management, ESG (Environmental, Social, and Governance), social value [8] make understanding corporate citizenship more difficult in companies.
Nowadays, corporate citizenship has become an integral part of doing business that can be seen as a broad spectrum of business roles in societies beyond existing approaches such as sustainability, CSR, and ESG [9]. Despite the importance of corporate citizenship, research for the conceptualization and characterization of corporate citizenship from an academic point of view is still insufficient due to conceptual abstraction and various proximity concepts regarding corporate citizenship. This is not irrelevant to the fact that the use of the corporate citizenship term was mainly initiated by business practitioners [10]. In addition, the main contexts and keywords using various terms referring to corporate citizenship were defined differently by each research field and scholar [8]. This is because scholars in various fields conceptualized corporate citizenship in various ways according to changes in social structures and business environments from their viewpoints in business.

In order to expand and develop corporate citizenship to a higher level, it is necessary to scrutinize latent contexts and concepts accumulated in existing corporate citizenship research. To facilitate this process, this study aims to characterize corporate citizenship and its two close concepts (i.e., CSR and ESG) through the text mining of relevant research articles; this research contributes to expand the scope of academic research on corporate citizenship by extracting underlying meanings and topics addressed in an abundant collection of relevant research articles. For this, each text dataset (i.e., title, keywords, and abstract) of research articles for CSR, ESG, and corporate citizenship is respectively modeled to extract frequently occurring terms and latent topics. Then, differences and commonalities among CSR, ESG, and corporate citizenship are investigated based on text mining results to propose more general and comprehensive concepts and characteristics of corporate citizenship for future uses in practice.

2. Literature Review

CSR has been discussed for more than half a century. Carroll [11] proposed a pyramid model of CSR that points out firms’ legal, ethical, and philanthropic responsibilities based on economic responsibility. After Carroll’s seminal work, the definition of CSR often includes managerial and social terms such as influence, social impact, system, and strategy. For example, Aguilera et al. [12] addressed that CSR is a long-term strategy to realize universal values in strategy and management. It means that CSR is a leading business activity to go beyond simple charity because it is a task that fundamentally changes strategy, management, corporate culture, and even corporate identity.

Various definitions of CSR in the literature also take a viewpoint of harmonious development for economy, society, and environment by emphasizing non-financial performance in common [13,14]. The key elements of non-financial performance are characterized as ESG, which consists of environmental, social, and governance criteria and their sub-factors to evaluate investments based on companies’ responsible impacts [15]. The importance of ESG performance has been emphasized in recent practice in that non-financial performance based on ESG factors positively impacts corporate sustainability [16–18]. Barko et al. [19] argued that when a company does not consider all economic, social, and environmental aspects, it will engage in unsustainable management and be at risk.

In recent years, the discourse that demands publicity and ethical and philanthropic responsibility as social responsibility for companies is expanding socially, and the focus of CSR is gradually expanding to the concept of corporate citizenship. The concept of corporate citizenship includes an assumption that companies have an obligation to devote themselves to public goods like citizens in modern society [5]. Therefore, corporate citizenship refers to a series of socio-economic activities that firms perform to fulfill its roles and obligations as a member of society [6]. Previous studies interchangeably used the terms CSR and corporate citizenship (e.g., [9,20,21]) as an equivalent view between the two concepts proposed by Matten and Crane [5].

Several academic studies and practitioners’ articles have attempted to analyze similarities and differences between CSR and corporate citizenship and between CSR and ESG. For example, corporate citizenship emphasizes management of internalities (i.e., companies’
rights and duties), while CSR focuses on management of externality for companies [10]. ESG helps measure or quantify social initiatives, while CSR makes companies accountable for their social commitments in a qualitative way [22]. Rendtorff [23] discussed corporate citizenship, CSR, corporate governance in terms of business legitimacy by emphasizing different stages of cognitive, pragmatic, moral legitimacy for proactive corporate citizenship. Costa et al. [24] considered ESG as a tool to control sustainability practices, and claimed that CSR along with environmental management and value creation are interconnected to achieve corporate sustainability.

As various concepts and approaches relevant to corporate sustainability have been addressed in the literature, there have been attempts to employ text mining to effectively characterize sustainability concepts in a large set of relevant articles or documents. Mazza et al. [25] identified 11 CSR related topics by applying the Latent Dirichlet Allocation (LDA) method to CSR communication data of five energy companies on Twitter. Goloshchapova et al. [26] analyzed European and United Kingdom CSR reports through LDA to extract underlying topics, and they identified commonly addressed topics as well as sector-specific topics in CSR reports. Kiriu and Nozaki [27] employed text mining based on word frequency and divergence to characterize ESG activities stated in Japanese CSR reports. Parra et al. [28] employed supervised and unsupervised machine learning methods for text data in corporate citizenship reports of seven major American companies to identify how corporate citizenship issues have been handled over time.

The aforementioned efforts to build a distinction of different corporate sustainability terminologies helped researchers understand various social responsibility and accountability concepts. However, previous studies subjectively defined those concepts and assigned related corporate sustainability theories to each terminology based on perceived theoretical similarities and differences from each author’s individual point of view. Therefore, unclear boundaries across CSR, ESG, and corporate citizenship are still a major concern due to the lack of in-depth discussion of comprehensively structuring those concepts from objective point of view. In this regard, this study uses a more scientific and quantitative approach—text mining for analyzing a number of research articles associated with three different labels—CSR, ESG, and corporate citizenship—to effectively and objectively capture underlying concepts addressed in CSR, ESG, and corporate citizenship research fields.

3. Methods

This study characterizes distinct properties of CSR, ESG, and corporate citizenship by extracting keywords and latent topics in the relevant literature through the term-frequency analysis [29] and CTM (Correlated Topic Modeling) [30] of text mining. CTM is useful to extract latent topics in a document set by considering possible correlations between latent topics based on the probabilistic modeling of term frequency in the document set [30]. The meta-analysis of existing literature review methods mostly categorizes and conceptualizes key topics in a literature set through an ad-hoc manner or prior knowledge as a top-down approach [31]. In contrast, a text-mining approach can derive underlying characteristics and topics in a literature set based on the object text information of an abundant literature set; meaningful contexts in a large document set that are difficult to be manually captured can be effectively extracted for analysis. From this point of view, this study analyzes concepts and contexts for corporate citizenship, CSR, and ESG based on text information in relevant large literature sets through text mining. The text mining approach of this study aims to clarify differences in corporate citizenship, CSR, and ESG.

First, SSCI (Social Science Citation Index) journal articles with keywords of “corporate citizenship”, “CSR”, and “ESG” were identified through the Web of Science article database [32]. A total of 1235 journal articles (i.e., 701 articles for CSR, 296 articles for ESG, and 238 articles for corporate citizenship) published from 1990 to June 2021 were considered for text mining. The title, keywords, and abstract of articles in each group (i.e., CSR, ESG, corporate citizenship) were extracted and saved into “txt” files for the input data of text mining for CSR, ESG, corporate citizenship, respectively.
Then, the following pre-processing procedure were performed to refine original text data for text mining [33]. First of all, raw text data from original documents were refined by removing unnecessary elements (i.e., characters, figures, numbers, punctuations, and whitespaces). Then, stop-words that do not provide meaningful information in text (e.g., “a” and "the") were removed from the text data. In addition, words with the same root were transformed to the same term (i.e., stemming). Common terms that appear frequently in a small document group represent more distinguished features than terms occurring in all the documents [34]. To reflect this, very frequently occurring terms across articles were removed based on the term frequency-inverse documents frequency method, where the importance of a term inversely decreases according to the number of documents that contain the term [35]. The pre-processing procedure was performed for the text data of each literature group by following the manual of the tm package for the R statistical software [36] and guidelines provided by Grün and Hornik [37].

Through the above pre-processing procedure, a document-term matrix to represent each literature group was generated by the `tm` package for text mining. As an initial text mining analysis, frequent terms occurring terms in each literature group were investigated; word clouds to visualize the top 50 frequent stemmed terms and the top 20 frequent terms within each literature group were respectively analyzed to identify the characteristics of each literature group. Next, the `topicmodels` package for the R statistical software [38] was applied to the pre-processed text data for CTM to extract hidden topics within each literature group. CTM is based on an unsupervised machine learning algorithm in which the number of derived topics should be predefined before modeling. This study set the number of topics to five to facilitate the interpretation and comparison of topic modeling results. In order to interpret latent topics, this study further reviewed the frequent terms and articles associated with each derived topic from CTM results.

4. Results

4.1. Term Frequency Analysis

The word clouds in Figure 1 represent visualized term membership in each CSR, ESG, and corporate citizenship research group. In each word cloud, larger terms represent more frequently occurring terms in the associated article group. When comparing frequent terms in CSR, ESG, and corporate citizenship articles, the most noticeable difference is that ESG research contains many financial or accounting terms: terms stemmed from “investment”, “report”, “disclosure”, and “risk”. In addition, the frequent terms associated with ESG are significantly different from the frequent terms in corporate citizenship and CSR. The corporate citizenship and CSR related literature sets seem to share common terms stemmed from “sustainability” and “firm”, but a significant difference is observed in the frequency of major terms. For example, the most frequent stemmed terms in the corporate citizenship literature are in the order of “sustain (e.g., sustainability)”, “CSR”, “ethic”, “firm”, “compani (e.g., company)”, and “global”. However, the CSR literature has the most frequent terms in the order of “CSR”, “firm”, “perform (e.g., performance)”, and “environment”. Figure 2 shows a Venn diagram created for the top 20 most frequent terms in each article set to further examine the commonalities and differences between the literature groups. “CSR”, “industri (industry)”, and “report” are terms that are commonly observed across the CSR, ESG, and corporate citizenship groups. Specific keywords for each topic are also observed in Figure 2. For example, corporate citizenship literature stands out for ethics, political/politics, and employees; CSR is for business, supply chain, consumer; and ESG is for investment, risk, fund, and social responsibility investment. The frequent terms in the overlapped areas show that studies in CSR, ESG, and Corporate Citizenship share similar research themes and foci. At the same time, each research stream has specific aspects that can be inferred from the frequent terms only appearing in each domain. The term frequency of each term in Figure 2 is shown in Table 1.
Citizenship share similar research themes and foci. At the same time, each research stream has specific aspects that can be inferred from the frequent terms only appearing in each domain. The term frequency of each term in Figure 2 is shown in Table 1.

Figure 1. Word cloud of top 50 frequent stemmed terms in CSR, ESG, and corporate citizenship literatures: (a) CSR; (b) ESG; and (c) Corporate citizenship.

Figure 2. Venn diagram of top 20 frequent terms in CSR, ESG, corporate citizenship literature sets.
Table 1. Frequency of top 20 most frequent stemmed terms in CSR, ESG, corporate citizenship literature sets.

<table>
<thead>
<tr>
<th></th>
<th>CSR</th>
<th>ESG</th>
<th>Corporate Citizenship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>csr (2082), sustain (1196), firm</td>
<td>invest (415), report (335), disclosur (323), csr (288), risk (205), fund (178), score (175), indic (173), rate (151), stakehold (141), board (137), institut (134), industri (127), countri (122), integr (119), sri (118), model (117), strategi (112), nonfinanci (98), stock (96), global (91)</td>
<td>sustain (283), csr (182), ethic (172), firm (166), compani (164), global (148), organiz (125), stakehold (124), market (124), model (116), perform (107), polit (106), emloye (100), communiti (99), engag (89), public (81), environment (73), industri (73), report (72), citizen (71)</td>
</tr>
<tr>
<td></td>
<td>(986), perform (922), environment (728), busi (467), suppli (415), chain (410), report (392), fianci (391), green (388), compani (384), govern (335), market (319), industri (312), review (311), discloaur (299), consum (294), activ (288), strategi (281)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2. Correlated Topic Modeling

Tables 2–4 show the CTM results that provide clues to understand what themes and topics have been studied in the three article groups. Five topics generated from CTM for each literature group were labelled based on frequent terms and articles associated with each topic.

In the CSR literature, the first topic (i.e., CSR-1 in Table 2) is associated with the largest number of the CSR articles (i.e., 31.7% of all the CSR related papers). The key frequent terms associated with this topic are *sustainability*, *business, review, framework, integration,* and *field,* etc. Various papers within this topic mainly attempt to review existing works and thereby to conceptualize a framework for CSR. For instance, the article of Carroll (2015), which is highly correlated with this topic, summarized a history of the concept of CSR and its framework for business-in-society relationships. He also introduced future scenarios of CSR and its parallel notions. This shows that efforts to conceptualize CSR have been widely discussed in the literature. The second topic (i.e., CSR-2) includes keywords such as *performance, environment, financial, governance, market, industries,* and *strategic,* etc. The literature on this topic shows a positive relationship between CSR and firm financial performance. Other topics are related to the various prerequisites such as governance, disclosure, and the role of the board of directors for successfully implementing CSR (i.e., CSR-3), CSR and various stakeholders, especially the relationship with and influence of employees and customers (i.e., CSR-4), and effects of CSR disclosure on corporate performance (i.e., CSR-5).

Table 2. Interpreted topics to characterize CSR based on CTM.

<table>
<thead>
<tr>
<th>Topic ID</th>
<th>Frequently Used Terms (Expressed by Example Original Words)</th>
<th>Interpreted Topic Label</th>
<th>Number of Articles</th>
<th>Representative Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR-1</td>
<td>sustainability, supply, chain, business, review, framework, integration, global, field, environment</td>
<td>Definition of CSR and conceptualization of CSR framework</td>
<td>222</td>
<td>Carroll [39]</td>
</tr>
<tr>
<td>CSR-2</td>
<td>performance, environment, financial, governance, market, board, industries, strategic, institution, innovation</td>
<td>Relationship between CSR and corporate financial performance</td>
<td>138</td>
<td>Doh et al. [40]</td>
</tr>
<tr>
<td>CSR-3</td>
<td>report, green, disclosure, environment, capital, companies, voluntarily, sustain, qualities, accountability</td>
<td>Antecedents of CSR</td>
<td>55</td>
<td>Frias-Aceituno et al. [41]</td>
</tr>
<tr>
<td>CSR-4</td>
<td>CSR, consumer, behavior, organization, employees, customer, ethics, companies, perceived, mediates</td>
<td>Relations between CSR and stakeholders</td>
<td>135</td>
<td>Farooq et al. [42]</td>
</tr>
<tr>
<td>CSR-5</td>
<td>CSR, firm, activity, engage, politics, countries, negative, rate, benefit, internal</td>
<td>Effects of CSR disclosure on corporate performance</td>
<td>151</td>
<td>Chen et al. [43]</td>
</tr>
</tbody>
</table>
Table 3 presents the resultant five latent topics extracted from the ESG literature. The number of ESG-related studies has rapidly increased in recent years especially since 2018. Overall, the ESG literature is closely associated with topics for the financial performance of corporate activities to achieve social and environmental benefits. The first topic in the ESG literature (i.e., ESG-1) is interpreted from its associated 68 papers. This topic is associated with the largest number of all the considered ESG related articles; 68 out of 295 ESG related papers (=23.1%) are identified as handling this topic. Most of the associated articles handle main criteria for SRI (social responsible investing) as ESG elements. These elements include not only financial performance of companies but also non-financial ESG elements, which show ESG investment foci for organizations’ sustainability. The second topic (i.e., ESG-2) is related to the role of managers and board of directors in ESG investment with high-probability terms such as disclosure, board, nonfinancial, CSR, director, independent, and direct, etc. For example, the literature in this topic examines the relationships between corporate governance and sustainability by focusing on role of directors and officers in corporations (e.g., Crifo et al. [44]). The articles in the third topic (i.e., ESG-3) discusses the relationship between ESG and corporate performance. The topic is related to frequent words such as report, risk, indicator, model, strategic, cost, and equities, etc. The literature shows how ESG disclosure impacts firm performance and proposes a nomological network of the antecedents, boundary conditions, and various outcomes of ESG disclosure. Moreover, various internal and external environmental factors of companies affecting ESG (i.e., ESG-4) and the relationship between ESG and corporate financial performance (i.e., ESG-5) form representative research topics in the ESG-related studies.

Finally, the results in Table 4 show the main topics of the corporate citizenship literature. The first topic (i.e., CC-1) represents research about executives and employees’ perceptions, attitudes, and roles of corporate citizenship, which can be inferred from its associated terms such as organization, employees, behavior, performance, intention, commitment, consumer, and ethics, etc. Many studies in this topic applies a previously proposed concept of corporate citizenship based on a political theory perspective [5]. For example, Rego et al. [21] suggested extended dimensions of corporate citizenship that includes employees’ perceptions of corporate responsibilities of their organizations. The second topic is the role of corporate citizenship of employee relations (i.e., CC-2), which can be inferred from its associated terms such as reputation, relations, employees, moral, individual, engage, right, and human, etc. This topic has the highest percentage of the membership (=29.8%) in the corporate citizenship related articles. The main theme of the above two top-
ics indicates the importance of executives and employees who play active role in corporate citizenship practice.

The third topic is related to corporate citizenship definition from a global and local perspective (i.e., CC-3), consisting of studies dealing with the practices and approaches of corporate citizenship by global companies. The literature in this topic shows that corporate citizenship approaches have flourished not only in local companies and but also in multinational companies. Indeed, the term corporate citizenship is getting more widely used nowadays due to its voluntary nature in society. The fourth topic is related to maintaining and exercising social influence, which form main keywords in corporate citizenship research (i.e., CC-4). The topic is related to the importance of active roles and commitment in a company as a citizen in society. The fifth topic represents the role of corporate citizenship as a strategic act of a company (i.e., CC-5). For example, research in this topic combines a framework of corporate citizenship with corporate strategies and business models (e.g., Googins [49]). The articles in this group include key terms such as firm, stakeholder, model, ethics, performance, product, and strategy, etc.

Table 4. Interpreted topics to characterize corporate citizenship (CC) based on CTM.

<table>
<thead>
<tr>
<th>Topic ID</th>
<th>Frequently Used Terms (Expressed by Example Original Words)</th>
<th>Interpreted Topic Label</th>
<th>Number of Articles</th>
<th>Representative Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-1</td>
<td>organization, employees, behavior, performance, intention, model, commitment, consumer, ethics, orientation</td>
<td>Employees' perception, attitudes, and roles toward corporate citizenship</td>
<td>45</td>
<td>Rego et al. [21]</td>
</tr>
<tr>
<td>CC-2</td>
<td>reputation, relations, employees, measure, moral, individual, engage, right, environment, human</td>
<td>Effect of corporate citizenship on employee relations</td>
<td>71</td>
<td>Dawkins [50]</td>
</tr>
<tr>
<td>CC-3</td>
<td>sustain, global, communication, initiative, local, industries, internal, enterprise, tool, companies</td>
<td>Definition of corporate citizenship from a global and local perspective</td>
<td>23</td>
<td>Logsdon and Wood [51]</td>
</tr>
<tr>
<td>CC-4</td>
<td>companies, politics, ethics, citizen, environment, CSR, global, market, countries, public</td>
<td>A company that pursues and exercises social influence</td>
<td>69</td>
<td>Nyberg and Murray [52]</td>
</tr>
<tr>
<td>CC-5</td>
<td>firm, CSR, stakeholder, model, strategies, ethics, performance, product, strategy, level</td>
<td>Corporate citizenship as a strategic role</td>
<td>30</td>
<td>Arora and Ali Kazmi [53]</td>
</tr>
</tbody>
</table>

In summary, the CTM results reveal that the overall trend ESG studies are significantly different from CSR and corporate citizenship. ESG related studies mainly handles topics related to sustainable corporate activities that affect the performance of stakeholders. Although CSR and corporate citizenship studies commonly include various topics under the big themes of sustainability and responsibility, the main focus of the related works is different between the two research streams. CSR studies more emphasize corporate mandatory responsibility and promotion of CSR activities for corporate performance than corporate citizenship studies. However, corporate citizenship research focuses more on corporate ethicality itself and corporate’s social influence in a political way.

5. Discussion and Conclusions

This study comprehensively identified research concepts and topics that have been handled in the CSR, ESG, and corporate citizenship domains. To facilitate the analysis process, this study employed the text mining techniques to extract frequently appearing terms and latent topics in the large number of research articles related to CSR, ESG, and corporate citizenship. The term-frequency analysis results showed that the CSR, ESG, and corporate citizenships not only share key terms that imply conceptual commonalities but also have distinct key terms that describes specific foci. Moreover, the CTM results clearly
addressed that the CSR, ESG, corporate citizenship domains have different scopes and scales, which indicates the necessity of a new framework not only to present the meanings and definitions of CSR, ESG, and corporate citizenship but also to clarify conceptual relationships among CSR, ESG, and corporate citizenship.

The definitions of the three themes (i.e., CSR, ESG, corporate citizenship) given by scholars in previous studies are as follows. First, CSR mainly talks about corporate economic, legal, ethical, and philanthropic obligations as summarized by the CSR’s pyramid model [1,11,54]. ESG indicates that companies perform environmental, social, governance related activities as obligations for social welfare and sustainable and long-term wealth of stakeholders [55]. Corporate citizenship is defined as “the extent to which businesses assume the economic, legal, ethical, and discretionary responsibilities imposed on them by their stakeholders” [7] (p. 38). Due to the redundancy and ambiguity of the boundaries of CSR, ESG, and corporate citizenship, scholars still mix these labels to characterize corporate responsibility concepts.

However, the text mining results of many research works relevant to CSR, ESG, and corporate citizenship in this study suggest that there are implicit but clear differences among CSR, ESG, and corporate citizenship. CSR mainly refers to corporate activities focusing on responsibilities and obligations, while ESG mainly refers to corporate ESG-related activities for the performance of companies, shareholder, and stakeholders. In addition, corporate citizenship mainly refers to voluntary and ethical activities of a company for its positive social influence.

Based on the results, the current study suggests that the concept of “corporate citizenship” is not only a high-level concept that encompasses ESG and CSR, but also a broad concept with missions that should affect various areas of society. The text mining results of this study imply that “employees” as the main agents of corporate citizenship practice is the most important factor among various stakeholders of corporate citizenship. Above all, it can be seen that the main role of corporate citizenship is for companies to exert more active social influence in a political way. Therefore, corporate citizenship should be different from CSR and ESG; corporate citizenship needs to be based on more active and leading corporate strategies and to be embodied as an organizational culture for all employees. In terms of social influence (politics), corporate activities should help other organizations become corporate citizenship since the word “citizenship” includes the concepts of win-win, symbiosis, and coexistence.

Corporate Citizenship Management Standards (CCMS) [56] established by POSCO, a global major steel-manufacturing company in Republic of Korea, are a representative example to support the findings of this study. For example, CCMS includes many keywords of corporate citizenship we found through this study. The most frequent words appeared in CCMS were ‘society’, ‘value’, ‘safety’, ‘customer’, ‘product’, ‘growth’, ‘activity’, ‘business’, ‘citizen’, etc. These words are regarded as keywords that represent POSCO’s management philosophy (i.e., corporate citizenship). There are considerable overlaps between the keywords in CCMS and the frequent terms in the corporate citizenship literature identified from this study. For instance, ‘society’, ‘community’, ‘action’, ‘initiative’, ‘employee’, ‘change’, and ‘environment’ are commonly identified keywords. This shows that the conceptualization of corporate citizenship through the text mining of related research articles in this study is in line with actual practice for corporate citizenship in business.

This study has a limitation in that the text mining techniques were conducted only with the titles, abstracts, and keywords of each paper. However, this was also an intentional approach to minimize the noise of data when the whole manuscript was considered for analysis. The current study focused on the difference among corporate citizenship, CSR, and ESG, but more specific research and practical implications can be drawn if more specific contents such as comparison with various similar concepts, definitions of each topic, and measures are investigated through text mining. Corporate citizenship research requires both quantitative and qualitative approaches as widely studied in CSR research. Specifically, corporate citizenship research will also require various studies to establish its concepts and
frameworks. In addition, research on the development of corporate citizenship measures is also needed to further refine and materialize the concept of corporate citizenship.


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