

Employees' Perception of Corporate Sustainable Development: A Bibliometric Examination

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Abstract

This research endeavor explores employees' perception of corporate sustainable development across its three fundamental dimensions – economic, social and environmental. To assess the primary research directions linked to the subject, a quantitative bibliometric analysis of the literature was conducted by selecting the key aspects of the topic within a significant body of publications indexed in the Web of Science database, consisting of a total of 1.031 scientific documents. Subsequent data analysis was carried out using the bibliometric networking software VOSviewer version 1.6.19. This was accomplished through the mapping of keyword co-occurrence, co-citation of referenced papers, as well as collaborative authorship, revealing the prominent areas of investigation associated with the topic under examination.

Key words: employees' perception, corporate sustainable development, bibliometric analysis

J.E.L. classification: M12, Q01, Q56

1. Introduction

Corporate sustainable development requires a dynamic balance of economic, social and environmental dimensions within organizations. Consequently, numerous organizations are formulating and implementing initiatives aimed at fulfilling their sustainable objectives, while addressing the needs of various stakeholders. How employees perceive sustainable initiatives implemented at the organizational level can enhance their sense of commitment and contribute to fostering improved behaviour and job performance. In this respect, the perceptions of internal stakeholders, namely the employees, are essential to closely observe internal activities within an organization. The main objective of this research undertaking is to perform a quantitative literature review to identify the predominant research trends concerning employees' perceptions of corporate sustainable development across its three dimensions. The paper is organized into five main sections, with the initial section offering a succinct overview of the topic. The second section entails a critical analysis of the literature regarding bibliometric examination. The third section outlines the quantitative analysis, carried out using advanced research methodology and statistical processing, based on a complex set of indicators. The fourth and fifth section capture the findings and resulting conclusions together with recommendations for future research directions.

2. Literature review

Bibliometric analysis involves a quantitative evaluation method that enables the recognition of prevailing and emerging trends and the conceptual framework within a particular research field in the current literature. Typically, it involves the handling of substantial data volumes and leads to substantial research impact. As emphasized by the authors, the advancement of this method is largely credited to the developments in information technology, the availability of software used for bibliographic data analysis, and the expansion of scientific databases (Mukherjee et al., 2022, p. 865–866; Donthu et al., 2021, p. 285). The methodology employs quantitative techniques and processes

characterized by their objectivity and descriptive quality. It aims to reveal the structural relationships within the research body, enabling the visualization of the collective scientific knowledge and the evaluation of performance metrics. This comprehensive approach allows for a holistic interpretation of the overall landscape. The primary objective of bibliometric research is to retrospectively evaluate the range of knowledge and associated performance within a specific research domain, emphasizing key factors such as research areas, publication output, authorship and collaborative authorship, affiliations, keyword and citation patterns, bibliographic connections, and the network-like structure formed through thematic groupings among these elements (Talan & Demirbilek, 2023, p. 165; van Eck & Waltman, 2023, p. 5).

Items occurrence analysis employs elements derived from the research papers as its measuring unit and investigates the thematic content of publications by assessing the importance of structural associations based on their frequency. Higher frequencies typically indicate thematic relationships. The resulting structural networks are visualized using various available bibliometric software tools. Embedded network metrics assume a crucial role in evaluating these networks by aiding in the ranking of constituent elements' relative significance (Andersen, 2021, p. 4693). An additional technical approach for assessing the obtained results involves grouping items into thematic clusters, which is valuable for discerning trends in the emergence and evolution of a scientific field. The interpretation of results relies on the frequency of elements within a cluster to determine its thematic content and the examination of connections to understand the context of the thematic clustering (van Eck & Waltman, 2023, p. 5).

Bibliometric analysis offers several inherent advantages, including its objective nature and its capacity to enhance the understanding of diverse research domains. However, it is important to note that when assessing emerging trends and their implications, bibliometric analysis can only provide a snapshot of a specific moment in time, limiting its ability to offer long-term insights. Moreover, it focuses on the high-frequency co-occurrence of keywords, highly-cited publications, and noteworthy co-authorship affiliations. This approach may exclude recent or niche publications from its thematic clusters. To address this limitation and to ensure the reliability of the results, it is recommended to complement bibliometric analysis with other types of analyses. This multifaceted approach can provide additional validation and strengthen the overall robustness of the findings obtained in these various analyses.

3. Research methodology

Conforming to a quantitative examination of pertinent publications, we conducted a bibliometric analysis by focusing on a prominent selection of publications listed within the Web of Science (WoS) database. The selection was driven by its comprehensive coverage of high-impact academic publications and its incorporation of relevant scientific citation indices (SCI, SSCI, CPCI, ESCI, etc.). This approach serves the purpose of providing an encompassing view of how employee perception is conceptualized and its pertinence in the context of implementing corporate sustainable development. It also aids in discerning the prevailing theoretical framework and key relationships between employee perception, economic, social and environmental dimensions, all of which are considered antecedents in the current paradigm of corporate sustainable development. The quantitative literature examination additionally serves to mitigate potential interpretational limitations by employing a scientific methodology distinct from traditional qualitative analyses.

To identify research trends, various thematic analyses were conducted by employing the following methods on the selected publications. These analyses were further processed using the bibliometric network software VOSviewer version 1.6.19:

- Authors' keyword co-occurrence mapping: to examine the connections among subjects within the research domain using the written content found in publications
- Co-citation of cited references mapping: to investigate the fundamental subjects in the research domain using referenced publications
- Co-authorship at country level mapping: to explore the influence of authors' affiliations in the research field

The selected methods contribute to the identification of the primary research domains associated with the topic under investigation. They reveal the interconnections between the themes addressed within the relevant research areas by scrutinizing the content of the publications. Moreover, these methods highlight prospective themes and potential research domains, thereby offering insights into future research directions.

To ascertain the number of relevant publications exploring the concept of corporate sustainable development across its three dimensions – economic, social, and environmental – in conjunction with employee perception, we conducted a WoS search using specific keywords, such as “corporate sustainable development”, “triple bottom line” and “employee perception”. The search query was formulated as (((ALL=(corporate sustainable development)) OR ALL=(economic dimension)) OR ALL=(social dimension)) OR ALL=(environmental dimension)) OR ALL=(triple bottom line)) AND ALL=(employee perception), resulting in the identification of 1.031 publications that encapsulate the topics addressed in the current research. The data retrieved from WoS, spanning from 1991 until 2023, comprises detailed information for every publication, encompassing titles, authors, affiliations, keywords, and citation details. Subsequently, this data was transferred and integrated into the Vosviewer software, version 1.6.19/2023.

4. Findings

Table 1 outlines the analysis methods employed in relation to the overall volume of generated publications, the total amount of identified items, the minimum occurrence threshold, and the total amount of filtered items subjected to bibliometric analysis.

Table no. 1 Concise overview of the mapping results based on specific search criteria in WoS

Method of research approach	Publishing timeframe	Publication volume	Number of total items	Minimum occurrence threshold	Number of analysed items
Authors’ keyword co-occurrence	1991 – 2023	1.031	2.974	5	113
Co-citation of cited references	1991 – 2023	1.031	51.450	20	112
Co-authorship at the country level	1991 – 2023	1.031	87	5	51

Source: Own processing.

In order to conduct authors’ keyword co-occurrence analysis, VOSviewer software was employed. Nodes of the same color in Figure 1 indicate similar thematic approaches in the selected publications, showcasing 9 distinct clusters. Assigning appropriate labels to the main clusters can be achieved by examining the primary nodes within the network. The nodes and arcs within each cluster provide insights into the coverage and relationships of the respective theme. In this network, nodes represent keywords, and the arcs represent the co-occurrence of keywords. Node size is proportional to keyword occurrence frequency, reflecting the frequency of the keyword across the dataset. Similarly, arc size indicates the frequency of associated keyword occurrences, following the predefined model at the start of the analysis. In this context, as per the VOSviewer manual version 1.6.19 (van Eck & Waltman, 2023, p. 6), an arc or a link indicates a co-occurrence connection between two keywords, each with an associated strength represented by a positive numerical value. A greater value indicates a more robust connection between the keywords, and the overall link strength reflects the frequency of two keywords co-occurrence.

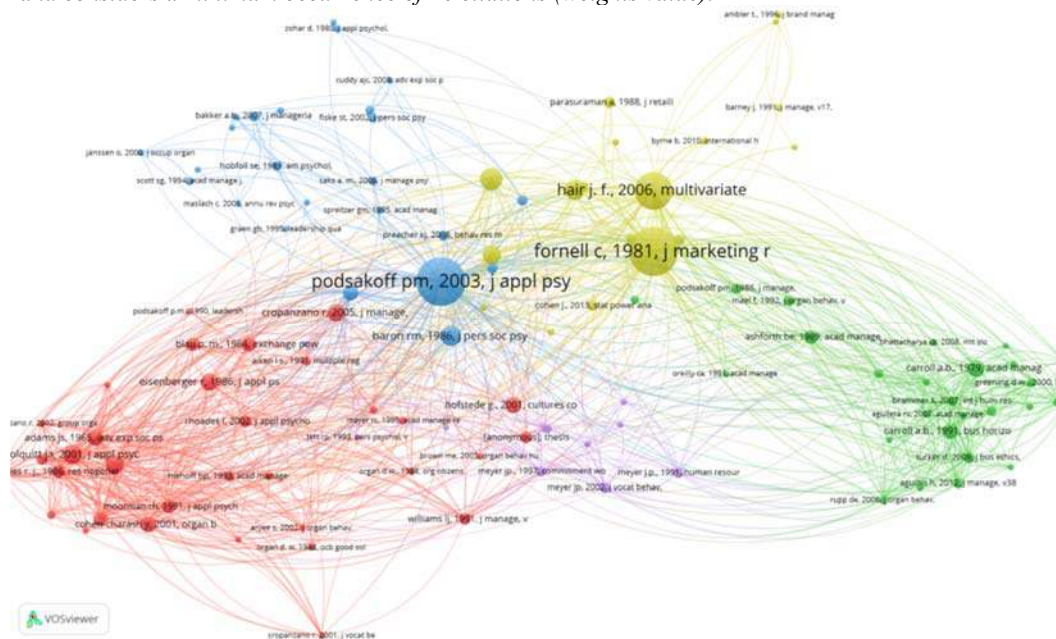
The analysis of 1.031 publications, considering a minimum co-occurrence of 5 keywords, identified 9 thematic clusters with a total of 113 characteristic keywords. The co-occurrence connections between these keywords amounted to 613, and the robustness of these connections reached a total value of 833. Figure 1 visually represents the scientific mapping of co-occurring keywords through network analysis.

- Purple Cluster (Cluster 5, 12 items): The keywords “Sustainability” (31 occurrences), “Sustainable development” (29 occurrences), and “Organizational citizenship behaviour” (16 occurrences) are prominently linked to the “Corporate social responsibility” (90 occurrences) theme in the purple cluster. The inclusion of the keyword “Employee Perceptions” with a low occurrence and link strength (5) suggests a subtle connection.
- Cyan Cluster (Cluster 6, 10 items): The keywords “Distributive justice” (15 occurrences) and “Procedural justice” (13 occurrences) suggest a stronger association with the theme of “Organizational justice” (46 occurrences) within the cyan cluster.
- Orange Cluster (Cluster 7, 10 items): Keywords such as “Human resource management” (16 occurrences) and “Job satisfaction” (63 occurrences) are more strongly associated.
- Brown Cluster (Cluster 8, 5 items): The association of keywords such as “CSR” (20 occurrences) and “Safety climate” (18 occurrences) is highlighted within the brown cluster.
- Pink Cluster (Cluster 9, 4 items): In the pink cluster, keywords like “Burnout” (17 occurrences) and “Work engagement” (16 occurrences) are more strongly associated.

In summary, the clusters provide a structured framework for understanding the predominant themes in the literature, offering insights into the interconnectedness of topics within the analyzed research. Based on the findings derived from the analysis of keyword co-occurrence mapping, the volume of relevant publications investigating the concept of corporate sustainable development correlated with the level of employee perception, reveals that the overall highest values of co-occurrence frequency are recorded in case of associated keywords like “Corporate social responsibility”, “Job satisfaction”, “Organizational justice”, “Sustainability”, “Sustainable development”, “Organizational commitment”, “Leadership”, “Organizational culture”, and “Organizational citizenship behaviour”.

The analysis of 51.450 distinct citations out of 1.031 publications, considering a minimum occurrence of 20 citations of a cited reference, identified 5 thematic clusters with a total of 112 items. The citation connections amounted to 4.139 with a corresponding robustness reaching a total value of 14.163. Figure 2 visually represents the scientific mapping of co-citation through network analysis, identifying thematic similarities among frequently cited publications.

Figure no. 2. Visualization of co-citation in cited references mapping via network analysis using the bibliometric software program VOSviewer version 1.6.19. The analysis encompasses 1.031 publications and considers a minimum occurrence of 20 citations (weights value).



Source: Own processing in VOSviewer version 1.6.19.

The findings depicted in Figure 2 provide following insights within the examined literature:

- Red Cluster (Cluster 1, 33 items): Publications with the highest impact pertain to authors such as Colquitt (2001) with 58 citations, Cropanzano (2005) with 54, Eisenberger (1986) with 54, and Cohen-Charash (2001) with 49 citations.
- Green Cluster (Cluster 2, 27 items): The most impactful publications are those associated with authors like Carroll (1979 with 52 citations, 1991 with 48 citations), Ashforth (1989) with 43, Turker (2009) with 35, and Podsakoff (1986) with 34 citations.
- Blue Cluster (Cluster 3, 24 items): Publications with the most significant influence are associated with authors like Podsakoff (2003 with 149 citations, 2012 with 34 citations), Baron (1984) with 63, Blau (1964) with 47, and Preacher (2008) with 31 citations.
- Yellow Cluster (Cluster 4, 18 items): Publications that have the greatest impact are those linked to authors such as Fornell (1981) with 151 citations, Hair (2006) with 115 citations, Hu (1999) with 70 and Nunnally (1994) with 62 citations.
- Purple Cluster (Cluster 5, 10 items): Publications with substantial influence are connected to authors such as Meyer (1991 with 33 citations, 1993 with 20 citations, and 2002 with 33 citations), and Allen (1990) with 31 citations.

In essence, the clusters offer a systematic framework for comprehending the prevailing themes in the literature, providing valuable insights into the interrelated nature of topics with the examined research fields. Based on the findings derived from the citation network analysis in mapping referenced citations and following a concise content analysis it is evident that the majority of identified publications center around the corporate sustainable development concept in relation to the organizational dimension. Within the red cluster the highly cited references delve into topics such as organizational justice including the interplay among various justice dimensions and perceptions of fairness. Distinct associations among organizational justice and diverse outcomes such as job satisfaction, employee loyalty, evaluation of leadership, extra-role behaviour, disengagement and performance are also depicted (Colquitt et al., 2001). Further explored topics pertain to social exchange theory implementation in the context of organizational behavior (Cropanzano and Mitchell, 2005), and the way employees perceive value in relation to performance outcomes, affective engagement, and innovation even in the absence of personal recognition (Eisenberger et al., 1986).

In the green cluster a prominent contribution includes the ethical management towards organizational stakeholders as outlined in the corporate social responsibility pyramid by Carroll (Carroll, 1991). Additional noteworthy contributions are credited to Ashforth and Mael (1989) in relation to social identity theory, and to Turker (2009) concerning the corporate social responsibility impact on commitment within an organization.

The findings within the blue cluster are characterized by a more analytical orientation, addressing method biases in behavioral research results. This includes the description of various procedural and statistical techniques to mitigate these biases (Podsakoff et al., 2003; 2012). Another highly cited contribution within this cluster refers to strategies involving asymptotic and resampling approaches to evaluate indirect effects within multiple mediator models and draw comparisons (Preacher and Hayes, 2008).

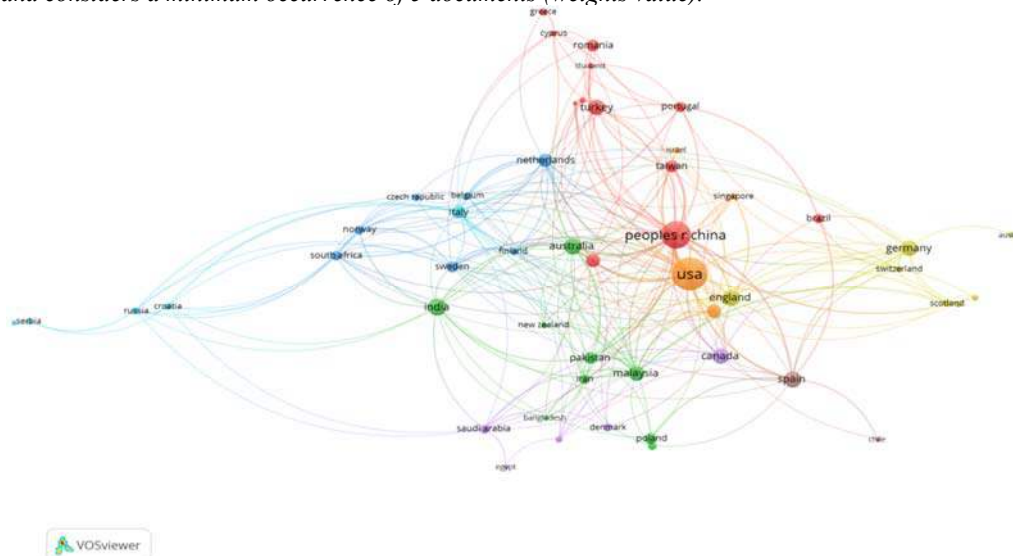
Within the yellow cluster the topics under discussion relate to the statistical tests employed in structural equation models that encompass independent variables and measurement errors. The authors address issues concerning sample size and power, as well as the enhancement of alignment between the specified model and endogenous data. Furthermore, an assessment framework using shared variance measures across various statistical models is employed (Fornell and Larcker, 1981).

A practical introduction to multivariate analysis designed for individuals without a statistical background is further offered by Hair et al. (2006). The authors simplify complex statistical research into basic concepts, enabling a grasp of specific statistical techniques and facilitating their practical application. Another noteworthy contribution comes from Hu and Bentler (1999), who investigate different fit indicators to assess model integration in practical scenarios. The analysis also encompasses models with incorrectly specified factor covariances and factor loadings. The fourth paper is Nunnally's *Psychometric Theory* (1994), a well-regarded and frequently referenced classic text that focuses on the objective measurement of latent constructs not directly observable, with perception being one example of such a construct. This book provides an extensive examination of measurement evaluation for researchers in psychology, education, and business fields like

management and marketing. It aims to address the diverse measurement challenges in these areas by integrating classical procedures that elucidate variance with contemporary inferential methods. The highly cited papers in the purple cluster comprise meta-analyses on the relationships among emotional, continuous, and normative commitment within the organization (Meyer et al., 2002). The results show positive correlations with organization-related outcomes like participation, achievement, and extra-role behaviour, as well as employee-related outcomes, including pressure and work-family imbalance (Allen and Meyer, 1990).

With a threshold set at a minimum of 5 documents per country, the examination of the 87 distinct countries out of 1.031 publications revealed 8 thematic clusters comprising a total of 51 items. The links value totaled 267, demonstrating a robust network with an overall value of 484. Figure 4 visually illustrates the scientific mapping of co-authorship via network analysis.

Figure no. 3. Vizualization of co-authorship among countries mapping via network analysis using the bibliometric software program VOSviewer version 1.6.19. The analysis encompasses 1.031 publications and considers a minimum occurrence of 5 documents (weights value).



Source: Own processing in VOSviewer version 1.6.19.

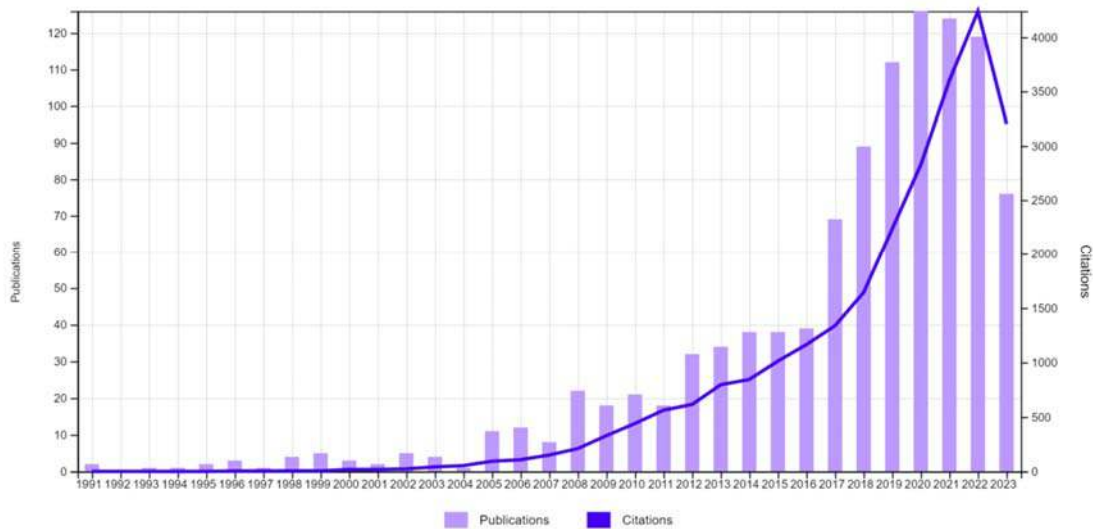
The findings revealed in Figure 3 reflect the following influence of authors' affiliations:

- Red Cluster (Cluster 1, 12 items): Countries such as China (144 documents), Turkey (50 documents), South Korea (34 documents), Taiwan (28 documents), and Portugal (22 documents) exhibit stronger affiliations within this cluster.
- Green Cluster (Cluster 2, 9 items): Countries like India (59 documents), Australia (52 documents), Malaysia (45 documents), Pakistan (27 documents), and Iran (18 documents) demonstrate more pronounced connections within this cluster.
- Blue Cluster (Cluster 3, 7 items): Countries such as Netherlands (35 documents), Sweden (25 documents), South Africa (19 documents), Norway (28 documents), and Finland (12 documents) demonstrate more robust connections within this cluster.
- Yellow Cluster (Cluster 4, 7 items): Countries like England (51 documents), Germany (46 documents), and Switzerland (10 documents) display more accentuated connections.
- Purple Cluster (Cluster 5, 5 items): Countries such as Canada (49 documents), Denmark (14 documents), and Saudi Arabia (15 documents) show more substantial associations.
- Cyan Cluster (Cluster 6, 5 items): Italy holds the greatest volume (33 documents), but Croatia (10 documents) and Russia (9 documents) display more significant linkages.
- Orange Cluster (Cluster 7, 4 items): Countries such as USA (213 documents) and France (34 documents) reveal more notable connections.
- Brown Cluster (Cluster 8, 2 items): Countries like Spain (54 documents) and Chile (5 documents) uncover more noteworthy associations.

The orange and red clusters exhibit the shortest distance between them, suggesting a robust association. Moreover, both clusters are closely linked to segments of the green, blue, yellow, and purple clusters. These associations indicate broad geographical regions that have explored the topics under consideration.

Figures 4 and 5 depict the research trends based on the volume of publications documented from 1991 to 2023, particularly in the domains of “Management”, “Business”, “Applied Psychology”, “Environmental Sciences”, and “Environmental Studies”, identified through the corresponding citation metric ratios. The blue curve in Figure 5 represents the citation frequency, averaging 24 citations per publication. The outcomes associated with this upward trend, experiencing exponential growth since 2017, might suggest the broadening of addressed topics and the evolution of relevant research areas. Simultaneously, it could indicate an intensified collaboration among authors across diverse interdisciplinary areas.

Figure no. 4. Publication volume along with times cited determined by citation report provided by WoS.



Source: Self-generated analysis via WoS.

Figure no. 5. Publication volume along with the top 10 most pertinent research areas linked to them.



Source: Self-generated analysis via WoS.

5. Conclusions

The current research undertaking investigated the research directions and fundamental connections between employee perception and corporate sustainable development across its three dimensions. The examination of 1.031 publications from 1991 to 2023 unveils a broader research trend on the topic, particularly in the latter half of the analyzed period, with exponential growth since 2017. This aligns with the pressing necessity for implementing sustainable objectives at the organizational level. Furthermore, it expands the interdisciplinary reach of the eloquent research fields linked to the addressed topic. This expansion encompasses areas such as management, environmental economics, communication, and theories related to organizational behavior.

The mapping of author keywords co-occurrence unveiled three main research areas associated with employees' perception and corporate sustainable development across its three dimensions. The keywords "Employee perceptions" and "Sustainable development" exclusively occur together in the purple cluster, being closely connected to other keywords including "Corporate social responsibility", "Sustainability", "Organizational citizenship behaviour", "Stakeholders", "Social identity theory", "Management", "Education" and "Triple Bottom Line". The keyword "Employee perceptions" is further linked to "Social identity theory", "Stakeholders", "Organizational citizenship behaviour" and "Corporate social responsibility". The keyword "Employees" occurs further in the green cluster and is connected to "Stereotype content model", "Social exchange theory", as well as to "Attitudes", "Job satisfaction", "Leadership", "Corporate social responsibility", "Sustainability", "Sustainable development" and "Innovation". The keyword "Employee" occurs in the purple cluster and is related to "Stakeholders", "Social identity theory", "Organizational citizenship behaviour", "Education" and "Corporate social responsibility". Both keywords "Perception" and "Perceptions" in the red cluster are connected as follows to "Social responsibility", "Reputation", "Service quality", "Customer satisfaction", "Corporate social responsibility" and "Stakeholders", "Justice", "Organizational climate", "Organizational change", "Leader-member exchange", "Organizational commitment", "Corporate social responsibility", "Organizational citizenship behaviour", "Sustainability", "Stakeholders" and "Stereotype content model". The keyword "Sustainable development" is further linked to keywords specific to economic and social dimensions, such as "Financial performance", "Customer satisfaction", "Innovation", "Human capital", "Employee satisfaction", and "Affective commitment". Other closely related links refer to "Sustainability", "Corporate social responsibility", "Triple Bottom Line" and "Social identity theory". The environmental dimension is explored to a lesser extent. The analysis confirms the relationship between the two searched topics revealing new areas of research.

The mapping of co-citation uncovers the primary references cited in the analysed publications, predominantly centering on topics such as organizational justice, social exchange theory, ethical management, social identity theory, organizational commitment, various approaches to statistical model examinations employed in social and behavioral sciences, including structural equation models, and organizational citizenship behavior. These findings align, to a certain extent, with the anticipated outcomes. In the organizational context, social exchange theory underscores the interdependence between the organization and its employees. Regarding social identity theory, employees can enhance their perception of self by personally aligning with the internal and external activities of their organization, subsequently influencing their attitudes and level of engagement. Additionally, statistical models are well suited for assessing employees' perception of corporate sustainable development.

The mapping of co-authorship on country level revealed eight distinct regions encompassing a total of 51 countries. These regions are headed by China, India, Netherlands, England, Canada, Italy, USA, and Spain. Additionally, China, USA and England exhibit a significant co-authorship intensity, which demonstrates a more robust co-citation pattern.

The limitations inherent in the conducted bibliometric analysis are associated with the specific utilization of keywords to identify the volume of pertinent publications aligned with the investigated research approach. Despite the careful selection of optimal variants following the exclusion of several deemed non-compliant alternatives, this approach has its constraints. Another limitation pertains to the reliance on the WoS database and its corresponding classifications, even though it stands out as one of the most widely used and robust databases for global scientific publication

analysis. To address these limitations, the exploration of the discussed topic could be broadened by incorporating alternative variants and additional keyword combinations within the chosen search vectors. Additionally, the utilization of various available databases, such as Scopus, could enhance the comprehensiveness of the analysis.

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