A Nexus to Achieve Green and Inclusive Business in Indonesia: A bibliometric analysis

Lokot Zein Nasution*, Prameshwara Anggahegari and Rr Retno Rizki Dini Yuliana
National Research and Innovation Agency
Jakarta, Indonesia
*loko001@brin.go.id.

Abstract. The most strategic issue today in the context of development at the global level, especially in Indonesia, is realizing sustainable growth. This issue is largely caused by the problems of urbanization and industrialization, thus worsening environmental degradation and deepening socio-economic disparities. The Green and Inclusive Business (GIB) Initiative is a movement that aims to encourage ecologically sustainable and socially just corporate strategies to address environmental and social issues. This framework is in line with the global Sustainable Development Goals (SDGs), which prioritize economic growth, poverty alleviation, and ecological management. The main objective of this study is to assess the bibliometric analysis based on literatures on Green and Inclusive Business development in Indonesia. This is done by observing how companies contribute to sustainability while advancing social inclusion, ensuring the active participation of marginalized groups (including women), the poor, and rural populations. The secondary data were analysed using bibliometrics analysis using certain keywords such as Green OR inclusive AND business OR SME OR MSME in SCOPUS range from 2014 to 2024. The analysis is made based on papers to clarify the prevailing trends related to GIB in Asia, especially MSMEs that have implemented GIB practices in Indonesia. The findings of the research indicate that Green and Inclusive Business models are progressively gaining traction across Asia. The primary catalysts for GIB advancement include increased environmental awareness, consumer demand for sustainable products, and governmental incentives that advocate for clean energy and corporate social responsibility (CSR). Despite facing numerous obstacles, Indonesia has achieved significant strides in the domain of green business development. Nevertheless, issue of inclusivity is more pronounced in smaller enterprises in rural areas, such as social enterprises and cooperatives. These initiatives frequently concentrate on local communities, empowering women and low-income populations through skill development, microfinance opportunities, and involvement in eco-friendly sectors like organic farming and waste management. Despite progress in fostering sustainable business practices, there is the need to enhance the inclusivity dimension under GIB paradigm. Collaborative endeavours among governmental entities, the private sector, and international organizations are vital to creating conducive environments that encompass favourable regulatory frameworks, financial mechanisms, and capacity-building programs that encourage businesses to adopt GIB models.

Keywords: Green and Inclusive Business; Bibliometric Analysis; Sustainability

B. A. Wiryawan et al. (eds.), *Proceedings of the 9th International Conference on Indonesian Social and Political Enquiries (ICISPE 2024)*, Advances in Social Science, Education and Humanities Research 937,
https://doi.org/10.2991/978-2-38476-436-5_42

1 Introduction

The model for implementing sustainable development, particularly in the context of industrialization within Indonesia, is critically essential for two principal reasons. Firstly, it is anticipated that the industrial sector will assume an increasingly pivotal role over the long term. This anticipation is inherently linked to the development paradigm that emphasizes the prioritization of local wisdom through the utilization of regionally owned resources to enhance community welfare. The intrinsic function necessitates that industrialization embodies local characteristics that align with natural resources, thereby ensuring it remains ecologically sustainable [Ahmed et al., 2008].

The second rationale pertains to the formulation of targeted industrial development strategies. This aspect is paramount to mitigate adverse consequences arising from industrial development initiatives. The pursuit of industrial development devoid of a sustainable framework presents considerable risks, particularly in engendering externalities such as environmental degradation or a lack of positive impact on the local economy.

The establishment of a green-based industrial framework is imperative to avert detrimental impacts associated with industrialization, which include: (i) the potential for conflicting land use with industrial zones; (ii) the possibility of heightened social opposition stemming from inadequate socialization or information dissemination regarding industrialization; (iii) the necessity of meeting prerequisites for industrial development, specifically the optimization of infrastructure; and (iv) the risk of environmental pollution that could compromise ecological carrying capacity. Sustainable development, particularly via green industry, embodies a production paradigm that emphasizes the efficiency and efficacy of resource utilization through sustainable practices while preserving ecological integrity throughout the production cycle. This encompasses the careful selection of raw materials, production apparatus, manufacturing processes, and waste management, all of which are orchestrated to be environmentally benign. Conversely, entrepreneurs encounter significant challenges in enhancing their capacities, primarily due to the stringent demands for sustainable industrial modalities. This scenario is attributable to at least three issues, as highlighted by Barbu and Capusneanu (2012): (i) suboptimal labour productivity; (ii) diminished investment productivity; and (iii) a limited contribution to economic growth.

If effectively optimized, the green industry harbours substantial potential to expedite poverty alleviation and elevate the economic quality of the populace through three key functions: (i) the expansion of employment prospects; (ii) the augmentation of capacities within the lower middle class; and (iii) the enhancement of community engagement in economic ventures. The trajectory of industrialization in Indonesia is highly conducive to fostering business certainty and sustainable industrial practices.

The effective harnessing of sustainable resource potentials possessed by business entities is anticipated to facilitate economic development that is rapid, stable, and

equitable. In essence, economic advancement predicated on the capabilities of the green industry is expected to enhance the welfare of the populace by diminishing poverty levels and broadening employment opportunities.

The characteristics position the Green and Inclusive Business Initiative (GIB) as a pivotal element and serve as a catalyst for enhancing regional competitiveness in the pursuit of inclusive economic growth. Consequently, the advancement of green business practices in Indonesia is imperative for fostering inclusive development. This research endeavors to evaluate the present state of Green and Inclusive Business development within the Indonesian context. The objectives of this investigation were achieved by examining the contributions of companies to the sustainability of inclusive-oriented enterprises through environmental, social, and economic lenses.

2 Literature Review

2.1 Green Business

The concept of Green Business pertains to the enhancement of business value while concurrently achieving environmental sustainability and yielding benefits for employees, stakeholders, and society at large, in addition to the objectives of maximizing profits and minimizing costs [Subono & Kurnisa, 2024]. Green Business encompasses the efficacious utilization of resources, the reduction of waste, and the development of products and services that exert a beneficial influence on the environment. An organization can generate value through practices that emphasize the stewardship of natural resources and foster inquisitive engagement [Hart, 1995]. The fundamental frameworks of sustainable business models serve as a foundational reference for broadening and consolidating the research agenda pertaining to sustainable business models. According to Bocken et al. [2014], there exist eight fundamental frameworks of sustainable business models, which include:

1. Maximization of material and energy efficiency
2. Generation of value from 'waste'
3. Transitioning to renewable energy sources and natural processes
4. Provision of functionality rather than ownership
5. Assumption of a managerial role
6. Promotion of sufficiency
7. Reutilization of business for societal and environmental benefit
8. Narrating scalable solutions

2.2 Inclusive Business

Inclusive Business denotes a strategic business approach that cultivates sustainable and viable income opportunities for populations with limited or nonexistent labor market mobility, thereby ensuring that impoverished individuals can fulfill their fundamental needs in an economically, socially, and environmentally sustainable manner. The indicators of a Comprehensive Inclusive Business Model emphasize human dignity, human rights, and economic sustainability [Likoko & Kini, 2017]. Moreover, as articulated by Lashitew et al. [2020], inclusive business represents a model that

harmonizes social objectives with commercial profitability, presenting considerable market potential, particularly within a Pyramid-based economic structure. The scholarly discourse on inclusive and sustainable business models delineates three pertinent sets of capabilities: (a) organizational ambidexterity; (b) partnership and co-creation; and (c) indigenous capabilities and bricolage.

2.3 Sustainable business

Sustainable business encompasses operational practices that take into account the social, economic, and environmental repercussions of their activities. This paradigm is recognized as the "Triple Bottom Line," which encompasses economic profit, social responsibility, and environmental stewardship [John Elkington, 1997]. The principle of creating shared value constitutes the cornerstone of sustainable business, as posited in the literature. The objective of corporations ought to be redefined to prioritize the creation of shared value, rather than mere profit generation. This paradigm shift is poised to catalyze the forthcoming wave of innovation and productivity enhancement in the global economy, thereby redefining the interaction between capitalism and society. Mastering the art of creating shared value represents the most promising avenue for restoring legitimacy to business practices [Porter & Kramer, 2011].

Sustainable business models entail innovation within products, processes, and business systems. These models are crucial in fostering and executing corporate innovation for sustainability, facilitating the integration of sustainability into business objectives and processes, and acting as a pivotal driver of competitive advantage [Bocken et al., 2014].

3 Methodology

In this research we conduct bibliometric analysis [Donthu et al. 2021] which constitutes a quantitative approach employed to examine the architecture, evolution, and patterns inherent within scholarly research. We scrutinize bibliographic data, encompassing articles, keywords, citations, and collaborations, to unveil insights pertaining to the research environment utilizing the keywords Green OR inclusive AND business OR SME OR MSME within the Scopus database for the period spanning 2014 to 2024. This methodology is particularly advantageous in domains such as sustainability and inclusive business, where an expanding corpus of literature complicates the identification of trends and knowledge deficiencies solely through conventional reviews. The procedure commences with the exploration of academic databases such as Scopus, employing meticulously chosen keywords.

The search outcomes, which comprise bibliographic data from 16,229 documents, are subsequently downloaded as a CSV file from Scopus. This file encompasses critical data, including article titles, authors, abstracts, keywords, publication years, and citations. VOSviewer is employed to visualize patterns and trends within the dataset. This software facilitates researchers in constructing co-occurrence maps, collaboration networks, and citation networks. In the context of co-occurrence analysis, the tool evaluates the frequency with which specific keywords co-appear within identical

documents. The nodes in the map represent keywords, and the magnitude of each node denotes the chance for the keyword to appear.

Connections between nodes illustrate co-occurrence relationships, with thinner lines indicate stronger associations. VOSviewer recognizes clusters of interconnected keywords, which symbolize thematic domains within the research field. These clusters facilitate the elucidation of principal research subjects and demonstrate the interrelation of diverse themes, such as sustainability, CSR, and innovation. This framework shows a complete overview of the intellectual architecture of the field and accentuates emerging topics alongside underexplored domains [Benn et al. 2006; Geels et al. 2008; Baumgartner 2014; 2020].

The co-occurrence map and bibliometric analysis of keywords such as green OR inclusive AND business OR SME OR MSME yield critical insights into the framework and trajectories within the domain of sustainable and inclusive business. The results underscore that sustainability and innovation are pivotal themes, with an increasing focus on circular economies, applications of artificial intelligence, and regional policies aimed at fostering green growth. The result highlights the needs of incorporating interdisciplinary methodologies that unite environmental science, economics, technology, and social responsibility.

4 Findings and Discussion

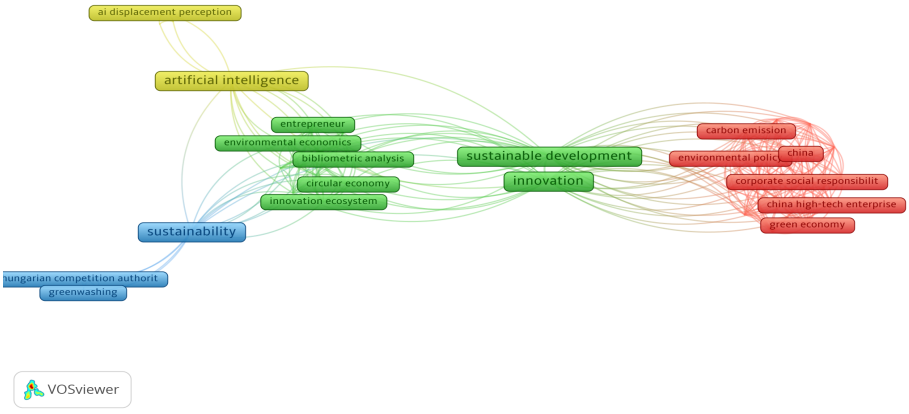

Figure 1: Vosviewer bibliometric analysis on the themes of Green and inclusive Business Literatures

Figure 1 illustrates the interconnections and clustering of various concepts pertinent to sustainable, green, and inclusive business themes, thereby showing the interrelatedness of these topics as evidenced by their co-occurrence frequencies in scholarly publications.

The map is organized into different clusters, each is marked by distinct colors, which illustrate thematic groupings that underscore critical focal areas. Each node present in

the map symbolizes a keyword or concept, with the dimensions of the nodes signifying their prevalence—larger nodes denote keywords that are more frequently encountered within the dataset. The lines that interlink the nodes depict the frequency of co-occurrence of these keywords within research articles, with thicker lines denoting stronger relationships.

The green cluster characterized by terminologies such as "sustainable development," "innovation," "circular economy," and "environmental economics," signifies a principal emphasis on sustainability and innovation as interrelated constructs. This cluster intimates that discussions surrounding sustainable development often occur within the framework of business innovation, particularly underscoring principles associated with the circular economy and ecosystems that facilitate innovation. The inclusion of keywords such as "entrepreneur" and "bibliometric analysis" implies that the domain also encompasses the examination of entrepreneurial initiatives aimed at sustainability, alongside the application of bibliometric methodologies to investigate prevailing trends.

In the red cluster, keywords such as "carbon emission," "green economy," "corporate social responsibility," and "China" are prominent. This suggests a regional emphasis, with China frequently appearing in scholarly inquiries concerning environmental policy, corporate social responsibility, and endeavors to foster green growth. The co-occurrence of "high-tech enterprise" in conjunction with environmental terminology indicates that their green initiatives are intrinsically linked to technological advancements and industrial transformations aimed at mitigating carbon emissions and promoting a green economy.

The blue cluster is centered on "sustainability" and encompasses concepts such as "greenwashing" and the "Hungarian Competition Authority." This group reflects worries about whether companies' claims of being sustainable are true, with greenwashing becoming a big issue in environmental discussions. The reference to the Hungarian Competition Authority suggests a regulatory dimension, indicating that certain research scrutinizes the involvement of competition authorities in addressing inappropriate sustainability practices.

The yellow cluster incorporates terms such as "artificial intelligence" and "AI displacement perception," illustrating a distinct research domain where technology intersects with sustainable business paradigms. The interconnections between AI and sustainability signify that scholars are investigating the role of digital technologies in propelling sustainable innovation, while simultaneously considering concerns associated with labor displacement and the societal ramifications of AI integration.

This co-occurrence map exemplifies the multidisciplinary essence of research pertaining to sustainable and inclusive business practices. The interrelations among innovation, environmental policy, corporate responsibility, and technology imply that these subjects are being approached from both economic and environmental vantage points. The incorporation of terminology related to the circular economy, entrepreneurship, and AI further demonstrates that sustainability within the business

context transcends mere environmental performance, encompassing the formulation of innovative, equitable, and adaptable business models responsive to technological advancements.

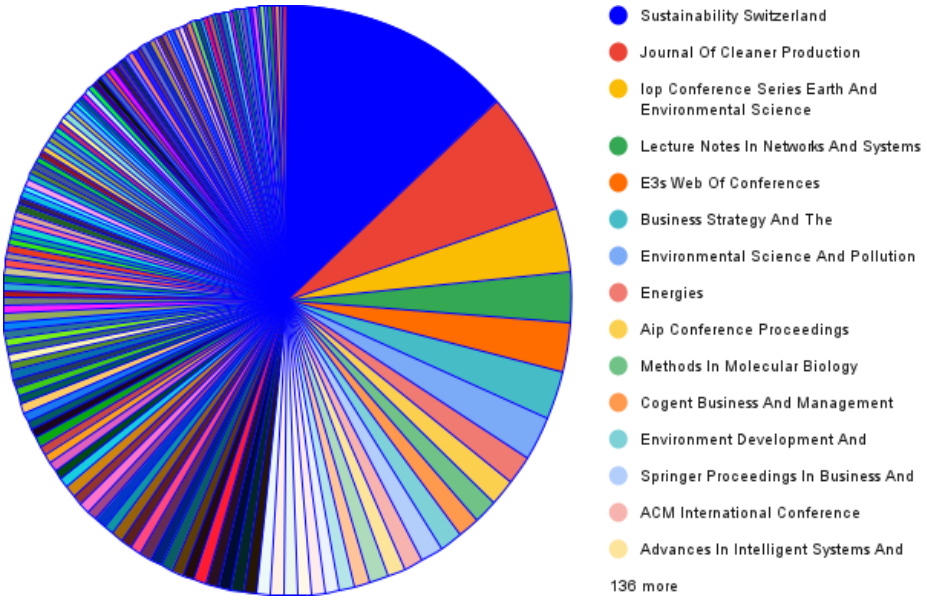

Figure 2: Scholarly publications on Green and Inclusive business

The pie chart presents a comprehensive depiction of the allocation of scholarly publications among various journals and conference proceedings pertinent to the subject matter under scrutiny. This graphical representation elucidates which academic outlets significantly contribute to the discourse on green, inclusive, sustainable, and impact-driven business paradigms, as discerned through bibliometric evaluation.

A considerable segment of the chart is predominantly occupied by Sustainability (Switzerland), which is illustrated by the expansive blue section. This observation indicates that this journal functions as a principal dissemination outlet for research in sustainability and inclusive business, publishing the highest volume of articles within this domain. The Journal of Cleaner Production, denoted by the red segment, ranks as another key publication venue. This journal is renowned for its emphasis on sustainable methodologies, environmental science, and responsible production practices, thereby reinforcing the thematic interconnection between sustainability and business.

The inclusion of IOP Conference Series: Earth and Environmental Science, Energies, and Environmental Science and Pollution Research (indicated in yellow, green, and other hues) exemplifies that a substantial fraction of the research within this domain is inherently multidisciplinary, amalgamating environmental sciences with business

studies. This observation is consistent with the escalating interest in green economy initiatives, impact-driven enterprises, and corporate accountability.

Further contributions from Business Strategy and the Environment, Cogent Business and Management, and Springer Proceedings in Business and Management reflect an emphasis on the strategic and managerial dimensions associated with sustainable and inclusive business practices. These publications signify that the discourse extends beyond environmental policy or technical solutions, also encompassing a re-evaluation of business models, corporate strategies, and management practices in alignment with sustainability principles.

The pie chart additionally underscores the significance of conference proceedings, such as E3S Web of Conferences and AIP Conference Proceedings, implying that these subjects are actively deliberated within academic conference settings. Conferences serve as critical platforms for the presentation of avant-garde research, facilitating scholars to investigate innovative methodologies and exchange insights on emergent trends, such as circular economies and green small and medium-sized enterprises (SMEs).

Although the chart is predominantly characterized by a few substantial segments, numerous smaller segments are also present, mirroring contributions from a diverse array of journals and conferences. This heterogeneity signifies that research pertaining to sustainable and inclusive business is extensively disseminated, transcending multiple academic disciplines and fields. The segment labeled "136 more" further accentuates the extensive distribution of research, suggesting that this topic holds relevance across a multitude of academic domains, including environmental science, business strategy, policy formulation, and even technological innovation.

In conclusion, the pie chart encapsulates the multidisciplinary essence of research related to green and inclusive business practices. It reveals that while journals such as Sustainability (Switzerland) and The Journal of Cleaner Production are central to the ongoing discourse, an array of additional outlets contributes smaller yet significant elements to the overarching research landscape. This distribution across various journals and conferences underscores the increasing prominence of sustainability within disparate academic fields and reinforces the necessity for interdisciplinary collaboration to tackle the intricate challenges encountered by businesses in transitioning toward more sustainable and inclusive operational models.

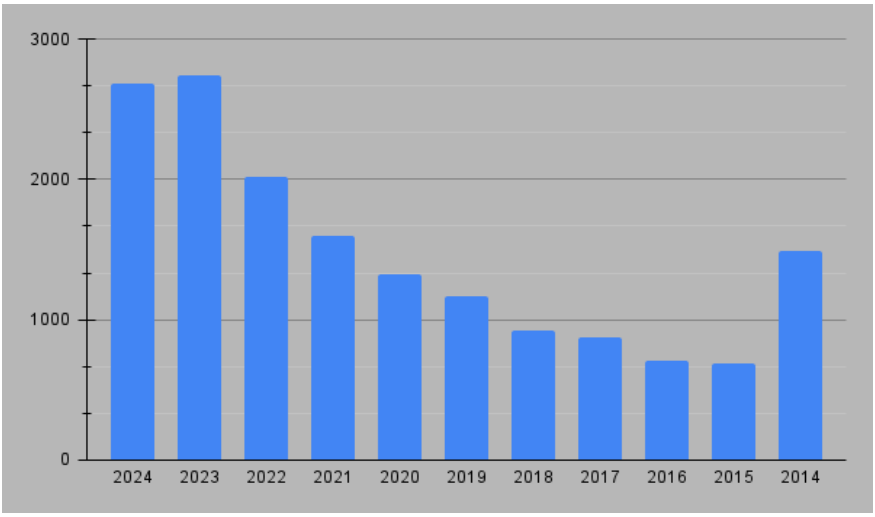

Figure 3: The number of yearly publications on Green and Inclusive business

The bar chart delineates the trajectory in the quantity of scholarly publications from 2014 to 2024, exhibiting fluctuations and significant shifts throughout the decade. In the initial years, particularly between 2015 and 2016, the output was comparatively low, implying restricted activity or potentially a phase of preparation for forthcoming research endeavors. Notably, the year 2014 is distinguished by a higher volume of publications in relation to the subsequent two years, which may suggest an atypical occurrence, such as a specialized research initiative or the culmination of previous undertakings.

From 2017 onward, there is a gradual yet consistent escalation in the number of publications, indicative of an increasing momentum in research activities. This timeframe could signify the inception of new projects, wherein institutions or researchers are gaining traction and concentrating on their outputs. The upward trajectory persists into 2020 and 2021, likely reflecting the maturation of projects initiated in earlier periods.

A substantial upsurge in publications is recorded in 2023 and 2024, where the figures attain their zenith, indicating a phase of amplified productivity. The congruence in output for these two years may illustrate institutional pressure to publish or efforts to mitigate disruptions experienced during the pandemic years. These peaks could also signify the successful culmination of extensive research projects, collaborative efforts, or new funding initiatives that catalyzed an increase in output.

The overall trend suggests a favorable trajectory in research productivity throughout the decade. Despite some declines and fluctuations encountered along the way, the chart indicates an escalating emphasis on research, with recent years showcasing a

considerable enhancement in publications, possibly heralding an era of intensified scholarly engagement.

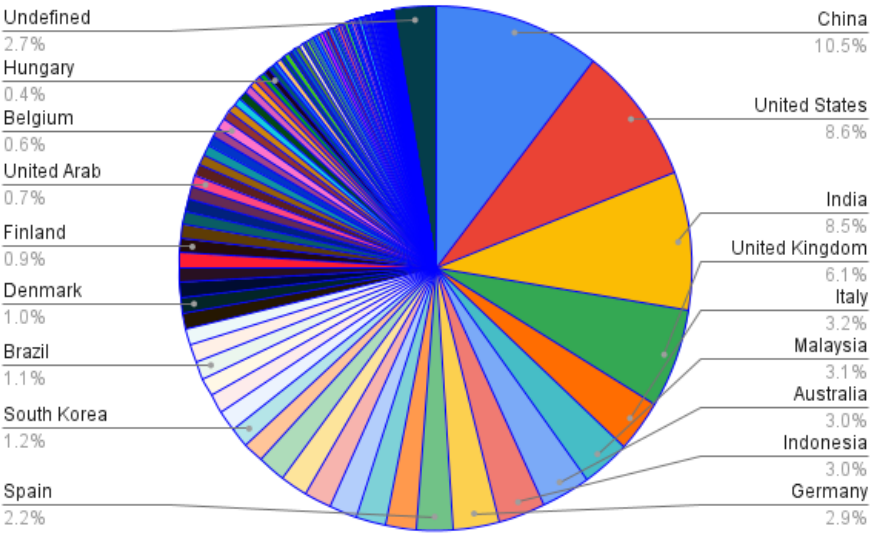

Figure 4: The number of countries affiliated for publications on Green and Inclusive business

The pie chart illustrates the allocation of scholarly publications by nation, elucidating the contributions from an array of countries. China emerges as the preeminent contributor, commanding the largest share at 10.5%, thereby signifying its prominent position in the realm of global research output. This substantial percentage is indicative of China's considerable investments in research and development over the years, which are congruent with its aspiration to establish itself as a global leader in science and technology. The United States follows closely with a share of 8.6%, a statistic that accentuates the nation’s well-entrenched research infrastructure, prestigious universities, and robust funding mechanisms.

India also plays a significant role with an 8.5% contribution, suggesting an increasing focus on research, potentially propelled by governmental initiatives aimed at enhancing academic and scientific innovation. The United Kingdom, accounting for 6.1%, exemplifies the nation’s longstanding tradition of scientific inquiry and international collaborations. Italy, Malaysia, and Australia follow with moderate contributions approximating 3%, reflecting a consistent participation in global research networks.

Indonesia's representation at 3% signifies the nation's endeavors to augment academic output, which may be correlated with policy reforms or international collaborations. Germany’s share of 2.9% aligns with its status as a leader in European research and innovation. Lesser contributors such as Spain, South Korea, Brazil, and Denmark, each

contributing around 1-2%, illustrate the extensive participation in scientific publishing, albeit on a reduced scale.

The "undefined" category, comprising 2.7%, may encapsulate publications from authors lacking explicit institutional or national affiliations, thereby underscoring the challenges associated with tracking contributions. The eclectic assortment of countries represented, including those with contributions of less than 1%, underscores the genuinely global character of contemporary research, with inputs emanating from a diverse range of regions and institutions.

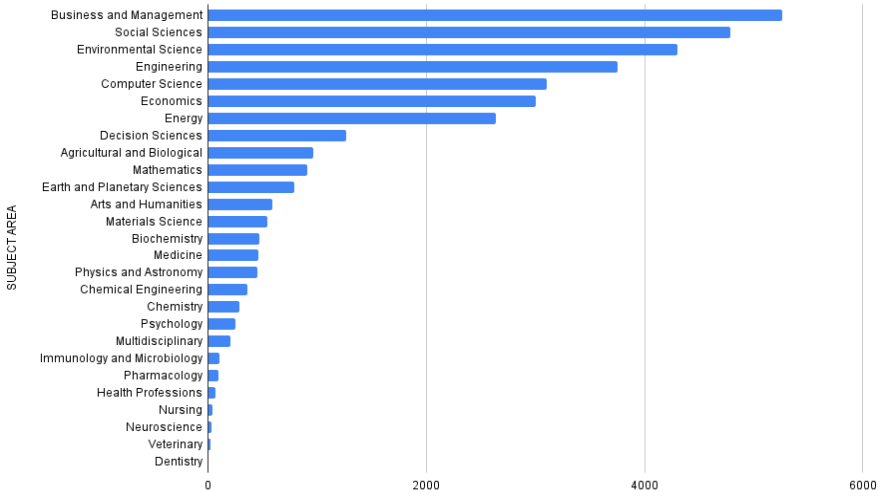

Figure 5: The area discipline for publications on Green and Inclusive business

The bar chart delineates the distribution of scholarly publications across diverse academic disciplines, elucidating the prominence of specific fields of study. Business and Management emerges as the foremost area with the highest volume of publications, implying that this domain garners considerable research interest, likely attributable to its significance in global markets, entrepreneurship, and organizational theory. Social Sciences similarly exhibit a substantial share, signifying the criticality of examining societal trends, behaviors, and the repercussions of policy, particularly in the milieu of swift global transformations.

Environmental Science closely follows, reflecting an increasing cognizance of environmental challenges and the imperative for research concentrated on sustainability, climate change, and the stewardship of natural resources. Engineering and Computer Science are also prominently represented, highlighting the pivotal role of technological progress and innovation in influencing industries and societal structures. Economics occupies a noteworthy position, potentially fueled by the desire to comprehend financial systems, economic advancement, and policy interventions.

Publications pertaining to energy further underscore the global focus on energy transitions, renewable resources, and climate policy frameworks. Decision Sciences accentuates the significance of methodologies in optimizing operational processes and facilitating informed decision-making within business, technology, and governance contexts. Agricultural and Biological Sciences, in conjunction with Mathematics, Earth, and Planetary Sciences, mirror ongoing endeavours in fundamental research and environmental inquiry.

Disciplines such as Medicine, Biochemistry, and Chemistry exhibit moderate representation, indicating consistent scholarly contributions in the life sciences and health-related fields. Conversely, specializations like Dentistry, Veterinary Science, and Nursing manifest the lowest publication counts, suggesting that these niche areas yield fewer outputs or engage more specialized research communities. Collectively, the chart illustrates a well-balanced amalgamation of applied and theoretical research, with a pronounced emphasis on domains that confront both contemporary challenges and prospective advancements.

5 Conclusion

In the context of Indonesia, notable advancements have been observed in the domain of green business initiatives; however, persistent challenges such as regulatory inconsistencies and restricted access to green financing for small and medium-sized enterprises (SMEs) continue to be significant impediments. The principle of inclusivity assumes a particularly salient position within smaller-scale enterprises, notably social enterprises and cooperatives, which frequently operate in rural locales. These initiatives are dedicated to empowering women, assisting low-income demographics, and fostering environmentally sustainable sectors, including organic agriculture, waste management, and renewable energy production.

Through the mechanisms of microfinance and skill enhancement, these enterprises play a crucial role in enhancing the welfare of local communities and creating economic opportunities for marginalized populations. The study elucidates that the development of green inclusive business (GIB) in Indonesia is characterized by both opportunities and challenges. Although there has been substantial progress in the adoption of green business practices, challenges such as regulatory inconsistencies, limited access to green financing, and capacity deficiencies among small and medium-sized enterprises (SMEs) remain prevalent. In conclusion, this study highlights the transformative potential of GIB models in advancing sustainable development goals (SDGs) and promoting inclusive economic growth. As the body of research within this field continues to grow, subsequent studies should prioritize the identification of pragmatic strategies aimed at mitigating barriers and ensuring that green and inclusive business models are both accessible and advantageous for all, particularly for marginalized communities.

References

[1] Baumgartner RJ (2014) Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development. Corp Soc Responsib Environ Manag 21:258–271. https://doi.org/10.1002/csr.1336
[2] Benn S, Dunphy D, Griffiths A (2006) Enabling Change for Corporate Sustainability: An Integrated Perspective. Australasian Journal of Environmental Management 13:156–165. https://doi.org/10.1080/14486563.2006.9725129
[3] Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. In *Journal of Cleaner Production* (Vol. 65, pp. 42–56). https://doi.org/10.1016/j.jclepro.2013.11.039
[4] Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM (2021) How to conduct a bibliometric analysis: An overview and guidelines. J Bus Res 133:285–296. https://doi.org/10.1016/j.jbusres.2021.04.070
[5] Geels FW, Hekkert MP, Jacobsson S (2008) The dynamics of sustainable innovation journeys. Technol Anal Strateg Manag 20:521–536
[6] Hart, S. L. (1995). A Natural-Resource-Based View of the Firm. In *Source: The Academy of Management Review* (Vol. 20, Issue 4). https://www.jstor.org/stable/258963
[7] John Elkington. (1997). *CANNIBALS WITH FORKS THE TRIPLE BOTTOM LINE 0f 21st CENTURY BUSINESS*. Capstone Publishing Limited.
[8] Lashitew, A. A., Bals, L., & Van Tulder, R. (2020). Inclusive Business at the Base of the Pyramid: The Role of Embeddedness for Enabling. In *Source: Journal of Business Ethics* (Vol. 162, Issue 2).
[9] Likoko, E., & Kini, J. (2017). Inclusive business—a business approach to development. In *Current Opinion in Environmental Sustainability* (Vol. 24, pp. 84–88). Elsevier B.V. https://doi.org/10.1016/j.cosust.2017.03.001
[10] Porter, M. E., & Kramer, M. R. (2011). *The Big idea Creating Shared Value how to reinvent capitalism-and unleash a wave of innovation and growth*.
[11] Subono, A., & Kurnisa, U. (2024). Green Business: A Review based Green HRM. *KnE Social Sciences*. https://doi.org/10.18502/kss.v9i17.16375