

# Corporate image and customer perception regarding the use of renewable energies: a bibliometric study

*Imagen corporativa y percepción del cliente frente al uso de energías renovables: un estudio bibliométrico*

*Imagem corporativa e percepção do cliente em relação ao uso de energias renováveis: um estudo bibliométrico*

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**Received:** March 20<sup>th</sup>, 2026

**Approved:** June 24<sup>th</sup>, 2026

**Available:** September 1<sup>st</sup>, 2026

## How to cite this article:

D. A. Mendoza Cáceres, H. G. Hernández Palma, and A. M. Jiménez Corona, "Corporate Image and Customer Perception Regarding the Use of Renewable Energies: A Bibliometric Study," *Revista Ingeniería Solidaria*, vol. 22, no. 3, 2026. doi: <https://doi.org/10.16925/2357-6014.2026.03.04>

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Review article. <https://doi.org/10.16925/2357-6014.2026.03.04>

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## Abstract

*Introduction:* This article is the product of **exploratory research** carried out at the Universidad del Atlántico (Barranquilla, Colombia) in 2026, which consists of a bibliometric study that addresses corporate image and customer perception of the use of renewable energy, based on the premise that such use has become a key element of business sustainability strategies.

*Problem:* Despite the growth in studies on sustainability and clean energy, the literature that comprehensively analyzes the relationship between corporate image and customer perception regarding the use of renewable energy is scattered and poorly systematized.

*Objective:* To analyze the evolution and main trends in scientific production on corporate image and customer perception associated with the use of renewable energy.

*Methodology:* The bibliometric study was developed following the PRISMA guidelines, based on 206 articles indexed in Scopus and **WoS** between 2015 and 2026. The analysis was supported by tools such as Bibliometrix (R), VOSviewer, and Microsoft Excel.

*Results:* The results show significant growth in publications in recent years, a high geographical concentration of scientific output, and limited collaboration among authors. Thematic clusters related to sustainability, corporate social responsibility, and consumer behavior are also identified.

*Conclusion:* The literature shows an expanding but still fragmented field of research, highlighting the need for more comprehensive studies that delve deeper into the impact of renewable energy use on corporate image and customer perception.

*Limitations:* The study is limited to documents indexed in Scopus and a bibliometric approach; therefore, it does not include publications from other databases.

**Keywords:** Corporate image, Customer perception, Renewable energy, Sustainability, Bibliometric analysis.

## Resumen

*Introducción:* Este artículo es producto de una investigación exploratoria desarrollada en la Universidad del Atlántico (Barranquilla, Colombia) en el año 2026, centrada en un estudio bibliométrico que aborda la imagen corporativa y la percepción del cliente frente al uso de energías renovables, partiendo de la premisa **de que** dicho uso se ha convertido en un elemento clave de las estrategias de sostenibilidad empresarial.

*Problema:* A pesar del crecimiento de estudios sobre sostenibilidad y energía limpia, la literatura que analiza de manera integrada la relación entre imagen corporativa y percepción del cliente frente al uso de energías renovables se encuentra dispersa y poco sistematizada.

*Objetivo:* Analizar la evolución y las principales tendencias de la producción científica sobre imagen corporativa y percepción del cliente asociadas al uso de energías renovables.

*Metodología:* Se desarrolló el estudio bibliométrico siguiendo las directrices PRISMA, a partir de 206 artículos indexados en Scopus y **WoS** entre 2015 y 2026. **Se utilizaron** herramientas como Bibliometrix (R), VOSviewer y Microsoft Excel.

*Resultados:* Los resultados muestran un crecimiento significativo de las publicaciones en los últimos años, una alta concentración geográfica de la producción científica y **una** limitada colaboración entre autores. Asimismo, se identifican clústeres temáticos relacionados con **la** sostenibilidad, **la** responsabilidad social **corporativa** y el comportamiento del consumidor.

*Conclusión:* La literatura evidencia un campo en expansión, aunque aún fragmentado, resaltando la necesidad de estudios más integradores que profundicen en el impacto **del uso de** energías renovables sobre **la** imagen corporativa y la percepción del cliente.

*Limitaciones:* El estudio se limita a documentos indexados en Scopus y a un enfoque bibliométrico, sin incorporar publicaciones de otras bases de datos.

**Palabras clave:** Imagen corporativa, Percepción del cliente, Energías renovables, Sostenibilidad, Análisis bibliométrico.

## Resumo

*Introdução:* Este artigo é o resultado de uma investigação exploratória realizada na Universidad del Atlántico (Barranquilla, Colômbia) em 2026, com foco num estudo bibliométrico que aborda a imagem corporativa e a percepção dos clientes sobre o uso de energias renováveis, com base na premissa de que tal utilização se tornou um elemento-chave das estratégias de sustentabilidade empresarial.

*Problema:* Apesar do crescimento dos estudos sobre sustentabilidade e energia limpa, a literatura que analisa de forma integrada a relação entre a imagem corporativa e a **percepção** do cliente em relação ao uso de energias renováveis é dispersa e pouco sistematizada.

*Objetivo:* Analisar a evolução e as principais tendências da produção científica sobre imagem corporativa e **percepção** do cliente associadas ao uso de energias renováveis.

*Metodologia:* O estudo bibliométrico foi desenvolvido seguindo as diretrizes PRISMA, a partir de 206 artigos indexados **na Scopus e na WoS** entre 2015 e 2026. A análise baseou-se em ferramentas como Bibliometrix (R), VOSviewer e Microsoft Excel.

*Resultados:* Os resultados mostram um crescimento significativo das publicações nos últimos anos, uma alta concentração geográfica da produção científica e uma colaboração limitada entre autores. Além disso, identificam-se clusters temáticos relacionados com **a sustentabilidade, a responsabilidade social corporativa e o comportamento do consumidor.**

*Conclusão:* A literatura mostra um campo em expansão, embora ainda fragmentado, destacando a necessidade de estudos mais integradores que aprofundem o impacto das energias renováveis na imagem corporativa e na percepção do cliente.

*Limitações:* O estudo limita-se a documentos indexados **na Scopus** e a uma abordagem bibliométrica, pelo que não incorpora publicações de outras bases de dados.

**Palavras-chave:** Imagem corporativa, **Percepção** do cliente, Energias renováveis, Sustentabilidade, Análise bibliométrica.

## 1. INTRODUCTION

In recent decades, sustainability has established itself as a central axis in the business and social agenda, driven by growing concern about climate change, the depletion of natural resources, and global regulatory pressure. In this sense, the use of renewable energy has ceased to be an exclusively technical decision and has become a strategic element that directly influences the corporate image of organizations and the way consumers perceive them [1], [2]. Increasingly, customers evaluate companies not only for the quality of their products or services but also for their environmental commitment and their contribution to more sustainable development [3].

Corporate image, understood as the global perception that different stakeholders build about an organization, has become a key intangible asset for business competitiveness [4]. Various studies have indicated that responsible environmental practices, including the adoption of clean energy, strengthen corporate reputation and generate positive associations in the consumer's mind [5], [6]. These associations influence critical variables such as trust, loyalty, and purchase intention, especially in markets where consumers are more environmentally conscious [7].

In this same sense, customer perception has become more complex and demanding. Today's consumers tend to critically analyze corporate discourses related to sustainability, differentiating between genuine commitments and merely symbolic actions [8]. The use of renewable energy can act as a powerful generator of reputational value but also as a risk factor when perceived as part of greenwashing strategies [9], [10]. This duality has sparked a growing academic interest in understanding how customer perception is constructed in the face of companies' sustainable energy initiatives.

The transition to cleaner energy models is also closely linked to the Sustainable Development Goals, particularly those related to affordable and clean energy, responsible production, and climate action [11]. Organizations that align their corporate strategies with these objectives tend to project a more coherent and legitimate image to their audiences [12]. However, the actual impact of these actions on customer perception is not linear and depends on contextual, cultural, and sectoral factors [13].

From the marketing and strategic management approach, the incorporation of renewable energy has become a tool for competitive differentiation [14]. Previous studies suggest that consumers positively value companies that integrate sustainability into their business model, as long as such actions are consistent and transparent [15]. This positive assessment translates into favourable attitudes towards the brand and a greater willingness to support the company in the long term [16]. However, despite the growing interest in research on sustainability, renewable energy, and corporate image, the existing literature is fragmented and dispersed across multiple disciplines [17]. Many studies address these concepts in isolation, without offering an integrated vision that allows an understanding of the dynamics in a comprehensive way [18]. In addition, there are few studies that systematically analyse the evolution of scientific knowledge around the relationship between corporate image and customer perception of the use of renewable energy.

In response to this gap, this study proposes a bibliometric analysis that allows the identification of the main trends, actors, sources, and lines of research in this field. Through a bibliometric review of the literature indexed in Scopus, it seeks to offer a

vision of the development of the field, as well as to provide inputs for future research aimed at deepening the strategic role of renewable energy in the construction of corporate image and customer perception [19], [20].

## 1.1. Literature Review

The relationship between corporate sustainability and corporate image has been widely studied in the literature, highlighting the role of environmental practices as key determinants of organizational reputation [21]. Research has shown that companies that adopt proactive environmental strategies tend to be perceived as more responsible, innovative, and trustworthy [22]. Following this idea, the use of renewable energy becomes a visible tool of the organization's environmental commitment, capable of reinforcing its positioning before consumers and other stakeholders [23].

From the consumer behavior approach, it has been shown that the perception of environmental commitment directly influences attitudes towards the brand and purchasing decisions [24], [25]. Consumers with greater ecological awareness tend to show a preference for companies that use clean energy sources, associating them with positive values such as ethics, transparency, and social responsibility [26], [27]. The role of corporate communication in the construction of the image associated with renewable energy is also highlighted. Clear, verifiable, and consistent communication strengthens the positive perception of the customer, while ambiguous or exaggerated messages can lead to distrust [28]. In this sense, researchers have suggested that the strategic use of green narratives must be supported by real actions to avoid counterproductive effects on corporate reputation [29], [30].

On the other hand, the energy transition perspective has begun to be integrated into the analysis of corporate image, highlighting that the adoption of renewable energy not only responds to external pressures but also to internal strategies for long-term value creation [31]. These strategies can improve customer perception by positioning the company as an actor committed to the future and to mitigating environmental impacts [32], [33].

## 2. MATERIALS AND METHODS

A systematic search of the literature was carried out in order to analyze the development and advances of scientific research related to the subject of study. For this, the Scopus database was selected due to its wide coverage and academic rigor. The search strategy was structured based on the key terms "Corporate Image," "Customer

Perception,” and “Renewable Energy,” which allowed the document base to be delimited in a precise and coherent way with the objectives of the study. This process is aligned with the methodological recommendations used in bibliometric analyses in order to guarantee the traceability and reproducibility of the results [34]. Table 1 presents the standardization of the keywords used.

**Table 1. Keyword standardization**

| Keywords            | Descriptors            |
|---------------------|------------------------|
| Corporate Image     | * Corporate Image      |
|                     | * Corporate identity   |
|                     | * Corporate reputation |
|                     | * Brand image          |
| Customer perception | * Customer perception  |
|                     | * Consumer perception  |
|                     | * Public perception    |
|                     | * user experience      |
|                     | * Customer attitude    |
| Renewable energy    | * Renewable energy     |
|                     | * Clean energy         |
|                     | * Green energy         |
|                     | * Sustainable          |
|                     | * Solar energy         |
|                     | * Renewable power      |

*Source: own work (2026).*

The search equation proposed in Scopus and WOS was: ( ALL ( “Corporate Image” ) OR TITLE-ABS-KEY ( “Corporate identity” ) OR TITLE-ABS-KEY ( “Corporate reputation” ) OR TITLE-ABS-KEY ( “Brand image” ) AND ALL ( “Customer perception” ) OR TITLE-ABS-KEY ( “Consumer perception” ) OR TITLE-ABS-KEY ( “Public perception” ) OR TITLE-ABS-KEY ( “user experience” ) OR TITLE-ABS-KEY ( “Customer attitude” ) AND TITLE-ABS-KEY ( “Renewable energy” ) OR TITLE-ABS-KEY ( “Clean energy” ) OR TITLE-ABS-KEY ( “Green energy” ) OR TITLE-ABS-KEY ( “Sustainable” ) OR TITLE-ABS-KEY ( “Solar energy” ) OR TITLE-ABS-KEY ( “Renewable power” ) ); The application of this equation made it possible to identify a total of 332 documents relevant to the object of study, which cover a publication period between 2003 and 2026.

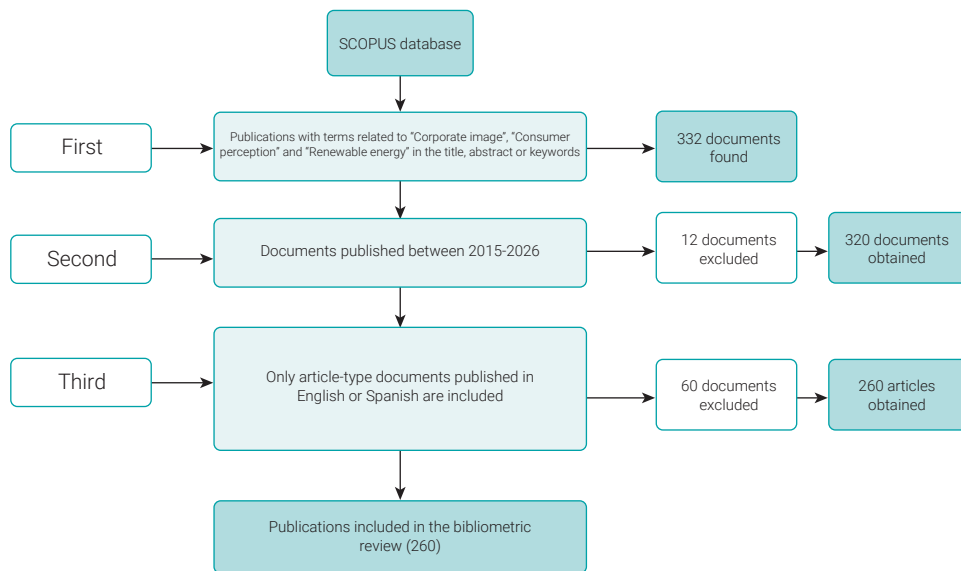


**Figure 1. Prism Matrix.**  
**Source:** own work (2026).

The initial results obtained from the search equation were progressively refined following the guidelines of the PRISMA methodology [34]–[36], as illustrated in Figure 1. In a first stage, only those publications that included in their title, abstract, or keywords terms directly related to corporate image, customer perception, and renewable energy were considered, which allowed a total of 332 documents to be identified. Subsequently, a second selection criterion associated with the publication period was applied, restricting the analysis to research published between 2015 and 2026, which allowed the exclusion of 12 documents. Finally, the inclusion of scientific articles published in English or Spanish was established as a third filter, discarding 60 documents. As a result of this systematic process, a final sample of 260 articles was consolidated, which constituted the basis for the development of the bibliometric analysis and the structured review of the literature.

The articles selected for bibliometric review were exported from the Scopus database in CSV format for subsequent processing and analysis. The information was processed using specialized tools such as Microsoft Excel, the Bibliometrix package for the R software, and the VOSviewer program, widely used in bibliometric studies [20], [34]. These tools made it possible to generate a set of indicators aimed at examining the evolution of scientific production, identifying the authors with the highest number of publications, and analyzing the dynamics of the main sources, as well as the institutions and countries with the greatest participation in the field of study. The general characterization of the articles included in the review is summarized in Table 2.

**Table 2.** Main information from the data obtained from Scopus.

| MAIN INFORMATION ABOUT DATA          |           |
|--------------------------------------|-----------|
| Timespan                             | 2015:2026 |
| Sources (Journals, Books, etc)       | 157       |
| Documents                            | 260       |
| Average years from publication       | 3,6       |
| Average citations per documents      | 22,67     |
| Average citations per year per doc   | 3,856     |
| References                           | 2232      |
| DOCUMENT TYPES                       |           |
| article                              | 260       |
| DOCUMENT CONTENTS                    |           |
| Keywords Plus (ID)                   | 609       |
| Author's Keywords (DE)               | 941       |
| AUTHORS                              |           |
| Authors                              | 885       |
| Author Appearances                   | 1774      |
| Authors of single-authored documents | 0         |
| Authors of multi-authored documents  | 885       |
| AUTHORS COLLABORATION                |           |
| Single-authored documents            | 0         |
| Documents per Author                 | 0,294     |
| Authors per Document                 | 3,4       |
| Co-Authors per Documents             | 6,82      |
| Collaboration Index                  | 3,4       |

**Source:** own work (2026).

Table 2 summarizes the main characteristics of the production analyzed in the period between 2015 and 2026. In total, 260 scientific articles were examined, published in 157 sources, which shows a growing interest from different areas of knowledge. These works were developed by 885 authors, with an average of 3.4 authors per document, which reflects a clear trend towards collaborative research.

### 3. RESULTS

The analysis process was developed sequentially. Initially, the indicators of scientific productivity were examined in order to identify the temporal evolution of publications and the general behavior of the field of study [38]. Subsequently, different bibliometric indicators were evaluated, such as the impact of sources, the participation of authors,

and the distribution of citations, which allowed characterizing the structure and performance of academic production. Finally, a relational analysis was carried out, focused on the identification of co-authorship links and patterns of co-occurrence of terms, with the purpose of revealing the thematic interactions and underlying knowledge networks [39].

In this order of ideas, bibliometric mapping is a fundamental tool, since it facilitates the visualization of intellectual and conceptual relationships within the analyzed field, allowing not only the identification of consolidated thematic nuclei but also the detection of emerging areas and research gaps [20], [40].

### 3.1. Laws of Bibliometric Productivity

Activity indicators are a tool for understanding the quantitative evolution of scientific production, as they allow the observation of both the volume of publications and the impact generated by research in a given field [41], [42].

Lotka's law is a bibliometric indicator that allows the evaluation of the distribution of author productivity and determines whether the generation of knowledge is concentrated in a limited number of researchers or, on the contrary, is more widely distributed [43]. The application of this bibliometric principle provides empirical evidence on the degree of consolidation of the field and on the existence of leading authors who articulate scientific production.

**Table 3.** Lotka's Law.

| Written documents | N. of Authors | Proportion of authors |
|-------------------|---------------|-----------------------|
| 1                 | 780           | 0,88                  |
| 2                 | 98            | 0,11                  |
| 3                 | 6             | 0,01                  |
| 4                 | 1             | 0,001                 |

**Source:** own work (2026).

Table 3 shows the behavior of author productivity according to Lotka's law, showing a clearly concentrated pattern. The majority of the researchers, 780 authors, representing approximately 88% of the total, contributed a single article to the field of study. In contrast, only 105 authors (12%) registered two or more publications, with five documents being the largest number of contributions made by the same author.

This behavior suggests that scientific production in the analyzed area is largely dominated by authors with occasional publications. This reflects a developing field, characterized by sporadic contributions rather than a highly specialized academic community.

From the perspective of Bradford's law, information sources are organized following a geometric progression, which allows the identification of a small set of journals that concentrate the largest proportion of publications on a specific topic [44], [45]. In this scheme, the sources located in Zone 1 make up the so-called core of the domain, as they group the main channels of scientific dissemination and provide the largest volume of relevant articles in the analyzed area [44]. This behavior is useful for recognizing leading journals and assessing the degree of consolidation of the field of study.

Table 4 shows that 33.46% of the articles analyzed are concentrated in the first eight journals, which are located within Zone 1 according to Bradford's law. This result confirms the existence of a reduced nucleus of sources that concentrates a significant proportion of scientific production, characterized by a higher level of specialization and recurrence in the publication of studies related to the research topic [44].

Within this group, the first four journals stand out. As can be seen in Figure 2, they represent 84% of the total publications corresponding to the sources that make up Zone 1 of Bradford's law. These journals are *Sustainability (Switzerland)*, *Corporate Social Responsibility and Environmental Management*, *Cogent Business and Management*, and *Journal of Cleaner Production*.

**Table 4. Bradford's Law**

| Zone   | No. Journals | No. Titles | Percentages |
|--------|--------------|------------|-------------|
| Zone 1 | 8            | 87         | 33,46%      |
| Zone 2 | 64           | 88         | 33,85%      |
| Zone 3 | 85           | 85         | 32,69%      |

**Source:** own work (2026).

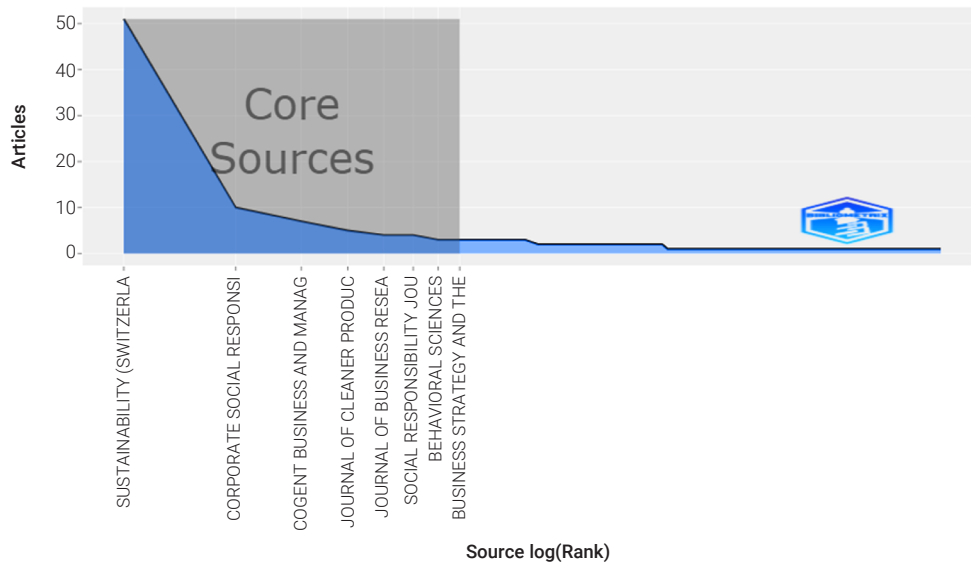


**Figure 2.** Bradford's Law.  
Source: own work (2026).

## 3.2. Bibliometric indicators

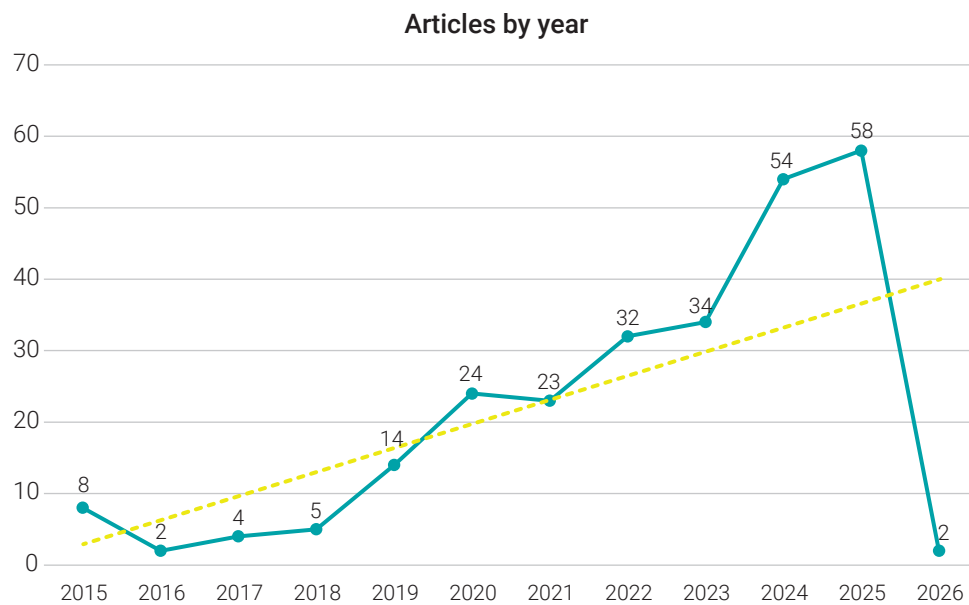


**Figure 3.** Annual scientific production.  
Source: own work (2026).

Figure 3 shows that the years 2022 (32 publications), 2023 (34), 2024 (54) and 2025 (58) concentrate the largest volume of scientific production related to the topic analyzed. This period brings together approximately 68% of the total number of publications identified, which shows a sustained increase in academic interest in the subject. This behavior is reinforced by analyzing the general trend shown in the graph, which reflects a clearly upward dynamic in the generation of knowledge during the last years.

In order to identify the geographical distribution of scientific production, an analysis by country was carried out to determine those with the highest number of publications related to the subject of study. Figure 4 presents a map of contributions in which the intensity of the blue color indicates the level of participation of each country, the darker tones reflect a greater volume of contributions. In this context, China (37 publications), Malaysia (36), South Korea (28), India (23) and Spain (21) stand out, countries that together account for approximately 38% of the total scientific production in the area analyzed. It is important to note that some of these works have been developed in international co-authorship; For this reason, the analysis considers an expanded base of 383 articles.

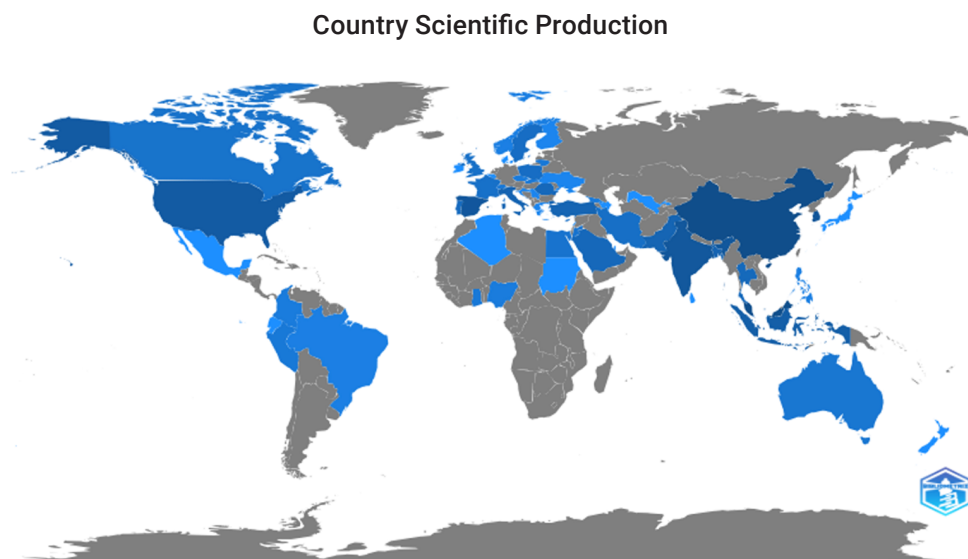


**Figure 4.** Scientific production by country.

Source: own work (2026).

China accounts for 10% of all publications. Some of the studies reviewed indicate that green marketing strategies and organizational practices associated with sustainability significantly influence the perception that consumers and other stakeholders build about companies and their brands [46]. However, this influence is not linear or always positive. On the one hand, evidence shows that when environmental actions are perceived as authentic and consistent, they contribute to strengthening corporate reputation, consumer trust, and engagement, which in turn favors pro-environmental behaviors and better business performance [46], [47]. Therefore, elements such as the internal management of green human resources, the support of senior management, and genuine interaction with consumers act as key mechanisms for translating sustainability into reputational value and organizational legitimacy.

On the other hand, the results also reveal conflicts in the strategic use of green discourse. In contexts where environmental initiatives are perceived as symbolic, opportunistic, or non-transparent, green marketing can generate counterproductive effects. In the case of luxury brands, for example, sustainability messages can activate a “moral licensing” effect, which legitimizes unsustainable consumer behaviors rather than promoting real change, especially when consumers trust the brand [48]. Similarly, the perception of greenwashing deteriorates the green image of brands and weakens consumer trust, showing that environmental communication by itself is not enough if it is not supported by verifiable commitments and actions [49].

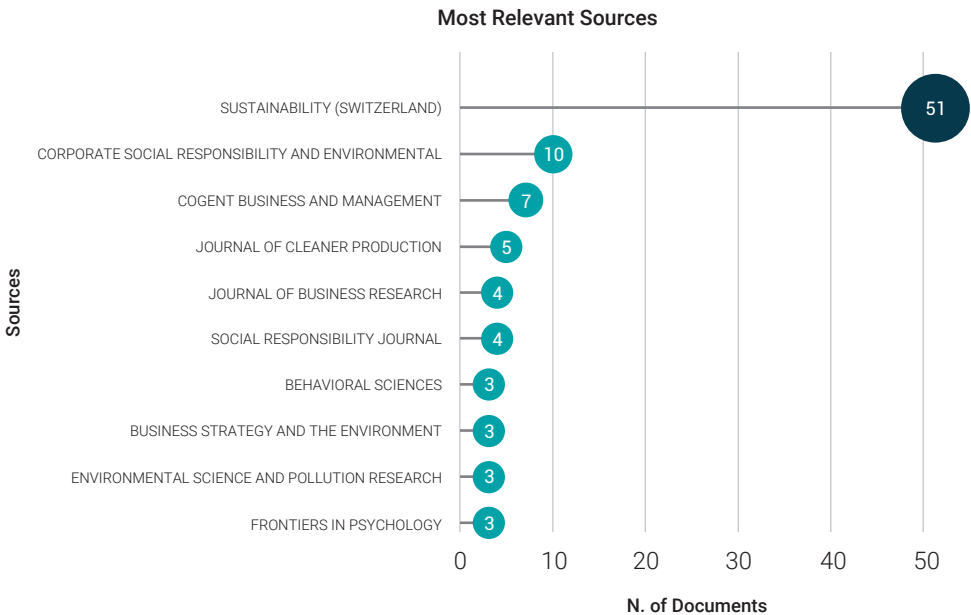


**Figure 5. Most relevant sources.**

Source: own work (2026).

Continuing with the analysis, the most relevant publication sources in the field of study were reviewed. As shown in Figure 5, the four most relevant journals are *Sustainability (Switzerland)*, with 51 publications, followed by *Corporate Social Responsibility and Environmental Management* with 10 articles, *Cogent Business and Management* with 7, and *Journal of Cleaner Production* with 5 publications.

Research published in the journal *Sustainability (Switzerland)* observes that sustainability strategies, when perceived as genuine, have a direct influence on the construction of a positive corporate image and favorable consumer responses. In the luxury hotel sector, the perception of responsible practices, such as the adoption of sustainable environmental and energy policies, strengthens the green image of the brand and translates into a greater willingness of customers, especially Gen Z, to pay premium prices, confirming the strategic value of sustainability in customer perception [50].

In turn, in e-commerce, the integration of sustainability into digital marketing strategies influences environmental attitudes, lifestyles oriented towards caring for the environment, and intentions for future purchases, reinforcing the idea that the corporate image associated with sustainable practices, including those linked to the use of clean energy, conditions consumer behavior across different channels [51]. However, broader approaches, such as those applied to smart and sustainable tourism, show that the public perception of sustainability is not built solely on business communication but also on data analysis, user experience, and social narratives, which introduces a more complex and dynamic dimension in the relationship between corporate image and customer perception regarding the adoption of sustainable solutions and renewable energy [52].

The author who has made the most contributions to the subject of study is Hossain M. A. His most cited article examines how environmental performance and employee performance mediate the relationship between Green Human Resource Management and Green Supply Chain Management [53].

Table 5 shows the 10 most cited articles and their contribution to the subject of study. There is a consensus that corporate social responsibility and sustainability practices directly influence the construction of corporate image and the way in which customers perceive organizations. Various studies show that when companies integrate responsible strategies, including environmental and energy actions, they strengthen corporate reputation and generate higher levels of customer satisfaction, trust, and loyalty, which translates into even better financial performance [54], [55]. Following this common thread, the adoption of renewable energy is shown as a sign

of environmental commitment that contributes to positioning the company as responsible and competitive with its stakeholders.

From a more operational perspective, research focused on green innovation, the circular economy, and sustainability communication highlights that not only actions, but also the way in which they are implemented and communicated, condition customer perception.

**Table 5. Most Cited Articles and List**

| Article Name                                                                                                                                                              | Reference | Relation to the topic<br>Corporate image and<br>customer perception of the<br>use of renewable energies                                                         | DOI                            | Total<br>Citations |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------|
| How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction     | [54]      | It shows that social responsibility strengthens reputation and customer satisfaction, key factors of the corporate image associated with sustainable practices. | 10.1016/j.jbus-res.2014.06.024 | 1169               |
| Investigating influence of green innovation on sustainability performance: A case on Malaysian hotel industry                                                             | [55]      | It shows that green innovation improves environmental performance and reinforces the corporate image, positively influencing customer perception                | 10.1016/j.jcle-pro.2020.120860 | 454                |
| The effects of corporate social responsibility on customer loyalty: The mediating effect of reputation in cooperative banks versus commercial banks in the basque country | [56]      | It confirms that reputation mediates the relationship between CSR and customer loyalty, which is relevant for renewable energy strategies.                      | 10.1007/s10551-017-3438-1      | 194                |
| Greenwash and green purchase behavior: an environmentally sustainable perspective                                                                                         | [57]      | It analyzes how greenwashing deteriorates the corporate image and reduces consumer confidence in environmental messages.                                        | 10.1007/s10668-020-01202-1     | 138                |
| Sustainability communication: The effect of message construals on consumers' attitudes towards green restaurants                                                          | [58]      | It shows that sustainability communication influences consumer attitudes and perceived brand image.                                                             | 10.1016/j.ijhm.2016.07.001     | 120                |
| Towards sustainable development: Coupling green marketing strategies and consumer perceptions in addressing greenwashing                                                  | [59] [65] | The coherence between green marketing and real actions to strengthen the corporate image and avoid negative perceptions stands out.                             | 10.1002/bse.3256               | 119                |
| Role of customers in circular business models                                                                                                                             | [60]      | It highlights the role of the customer in the acceptance of sustainable models that reinforce the corporate image.                                              | 10.1016/j.jbus-res.2020.12.053 | 102                |

(continúa)

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| Article Name                                                                                                                                                         | Reference | Relation to the topic<br>Corporate image and<br>customer perception of the<br>use of renewable energies         | DOI                           | Total<br>Citations |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------|
| Corporate social responsibility: a pathway to sustainable competitive advantage?                                                                                     | [61] [66] | It proposes CSR as a source of competitive advantage by strengthening the corporate image.                      | 10.1108/IJBM-01-2019-0037     | 97                 |
| Investigating the complexity of perceived service quality and perceived safety and security in building loyalty among bus passengers in Vietnam – A PLS-SEM approach | [32]      | It provides evidence on how user perception influences loyalty, applicable to business sustainability contexts. | 10.1016/j.tranpol.2020.12.010 | 94                 |
| Do circular economy practices affect corporate performance? Evidence from Italian large-sized manufacturing firms                                                    | [63] [64] | It shows that sustainable circular and energy practices improve performance and corporate image.                | 10.1002/csr.2298              | 81                 |

**Source:** own work (2026).

The incorporation of clean technologies and sustainable practices improves environmental performance and reinforces the corporate image, as long as there is coherence between the discourse and the organizational reality [55], [58], [60], [63]. In turn, consumers positively value these efforts when they perceive that they are part of an authentic strategy and not merely an instrumental one, which is particularly relevant in sectors sensitive to sustainability, such as tourism, services, and manufacturing.

However, the risks associated with inadequate sustainability management are also addressed. Studies on greenwashing indicate that when customers perceive inconsistencies between environmental claims and actual practices, the corporate image is negatively affected, eroding trust and reducing purchase intention [57], [59]. Even in contexts where sustainability is well valued, customer perception can be conditioned by factors such as service quality, safety, or user experience, suggesting that the impact of renewable energy use on corporate image depends on a comprehensive approach that articulates environmental performance, communicative coherence, and customer experience [30]. Taken together, these findings reinforce the idea that energy sustainability should not be understood as an isolated element, but as part of a coherent corporate strategy aimed at building reputational value and social legitimacy.

### 3.3. Analysis of Relationships and Co-occurrences

The analysis of relationships and co-occurrences was carried out using the VOSviewer software, taking as a parameter that each author had at least one article and four citations.

The co-authorship analysis shows that, out of 837 authors, 577 meet the established parameters. Of these, only 13 have co-authored works, which shows that greater collaboration is needed among authors interested in the topic of study. As shown in Figure 6, two clusters can be identified: Cluster 1 (Cui Caiyun, Han Xiaowei, Liu Yong, Skitmore Martin, Xia Bo, Xu Min, and Zhou Qianqian) and Cluster 2 (Dong Junyi, Lu Weite, Ni Anning, Wang Mengmeng, Yu Xueyan, and Zhang Chunqin).

The analysis of the relationships between authors and co-occurrences was carried out using the VOSviewer software, a tool used for the visualization and exploration of bibliometric networks. For the construction of the network, it was established as a minimum criterion that each author had at least one published article and four citations, in order to guarantee the relevance of the analyzed nodes [34], [38]. Based on these parameters, the co-authorship analysis identified that, out of a total of 837 authors, 577 met the established criteria.

However, the results show limited scientific collaboration within the field of study, since only 13 authors present works developed in co-authorship. This low density of the network suggests that research on the subject is still fragmented and that there is ample scope to strengthen collaborative work among researchers. As shown in Figure 6, the network is organized into two main clusters: the first cluster, made up of Cui Caiyun, Han Xiaowei, Liu Yong, Skitmore Martin, Xia Bo, Xu Min, and Zhou Qianqian, and the second cluster, made up of Dong Junyi, Lu Weite, Ni Anning, Wang Mengmeng, Yu Xueyan, and Zhang Chunqin, confirming the existence of isolated research cores rather than a consolidated network.

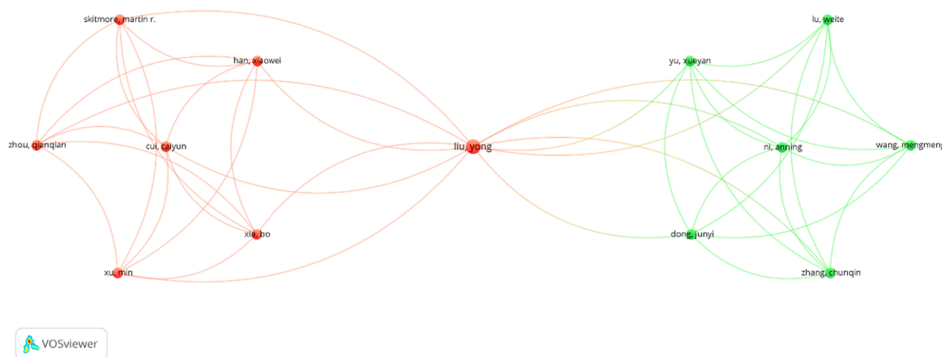


**Figure 6.** Co-authorship relationship.

Source: own work (2026).

Finally, an analysis of the co-occurrence of keywords was carried out in order to identify the main thematic axes of the field of study. For this analysis, it was established as a minimum criterion that each keyword presented at least five occurrences. Under this criterion, out of a total of 1,423 terms identified, only 55 met the established threshold. The results, represented in Figure 8, allowed the visualization of the formation of six clearly differentiated thematic clusters. Among the most representative terms are sustainability, sustainable development, perception, corporate social responsibility, consumer behavior, marketing, service quality, and green economy, which reflects the convergence of approaches related to sustainability, corporate image, and consumer behavior within the analyzed field.

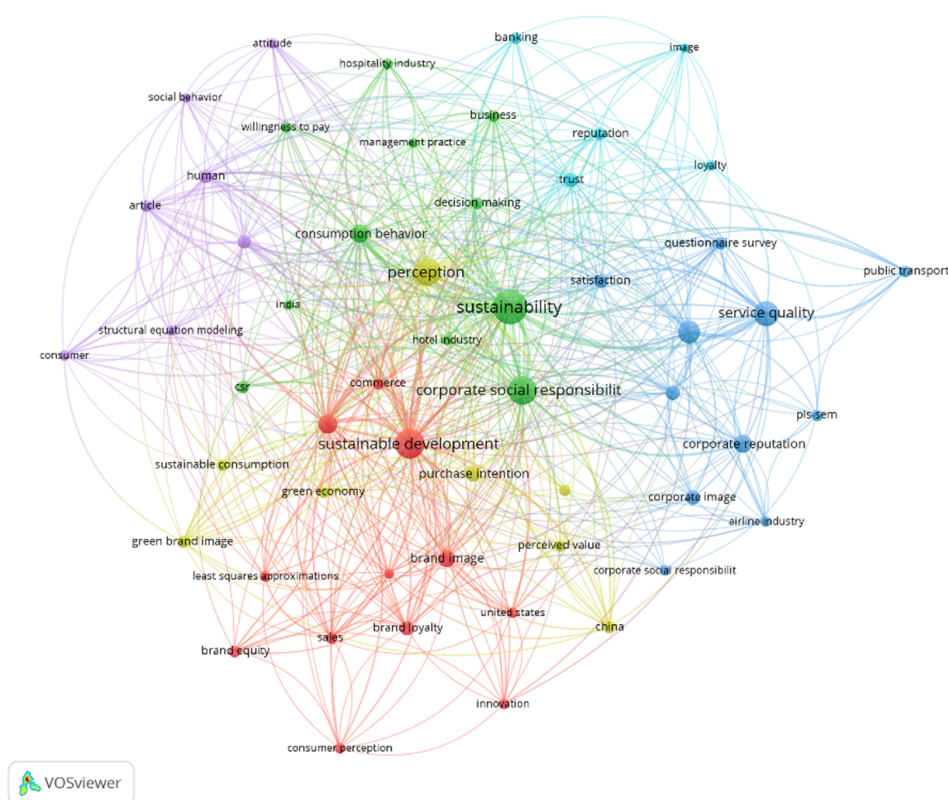


**Figure 7.** Keyword co-occurrence.

Source: own work (2026).

## 4. DISCUSSION AND CONCLUSIONS

The results of the bibliometric analysis show that research on corporate image and customer perception of the use of renewable energy has experienced sustained

growth over the last decade. In particular, the period between 2015 and 2026 shows an increasing trend, with a notable increase in scientific production from 2022 onwards. The years 2022, 2023, 2024, and 2025 account for more than two-thirds of the total number of publications analysed, suggesting that academic interest in this topic has intensified in recent years. This may be due to the global sustainability agenda, the energy transition, and greater consumer sensitivity to the environmental practices of organisations.

From a geographical perspective, the findings reveal that scientific production is mainly concentrated in China, Malaysia, South Korea, India, and Spain, countries that together contribute about 38% of the articles published. This concentration can be explained by the combination of public policies aimed at sustainability, industrial growth, and the progressive adoption of renewable energy in these contexts. At the same time, the presence of publications in multiple regions also indicates that the topic has a global reach, although with uneven levels of development. This scenario suggests the need to strengthen research in developing countries and emerging economies, where the impact of the corporate image associated with the use of clean energy could have more relevant social and economic implications.

In terms of publication sources, the results show that a small number of journals account for a significant proportion of the articles, with *Sustainability (Switzerland)*, *Corporate Social Responsibility and Environmental Management*, *Cogent Business and Management*, and *Journal of Cleaner Production* standing out, which together account for 28% of the production analysed. At the level of authorship, high transience is observed, given that 88% of researchers have only one publication in the field, which suggests that the topic has not yet been fully consolidated as a stable line of research for many authors. The author with the greatest recurrence is Hossain M. A. The limited collaboration among authors evidences a fragmented field with ample opportunities for the development of more solid research networks.

Overall, this study allows the conclusion that the relationship between corporate image and customer perception of the use of renewable energy is an expanding field of research, with growing academic interest and a clear interdisciplinary orientation. However, the results also highlight the need to move towards more integrative studies, which combine bibliometric approaches with empirical and comparative analyses across sectors and regions. Likewise, future research could delve into the real impact of the adoption of renewable energy on trust, loyalty, and consumer behavior, avoiding merely discursive approaches and contributing to a more critical and applied understanding of sustainability as a corporate strategy.

## DECLARATION OF AUTHORSHIP

Mendoza-Cáceres: Conceptualization and methodology; data recovery; data curation; formal analysis; writing, review, and editing of the manuscript.

Hernández-Palma: Conceptualization and methodology; data recovery; data curation; formal analysis; writing, review, and editing of the manuscript.

Ruiz-Tapias: Conceptualization and methodology; data recovery; data curation; formal analysis; writing, review, and editing of the manuscript.

## FUNDING

This research did not receive funding from public or private entities or international cooperation agencies. Consequently, the costs associated with its execution were fully assumed by the authors.

## CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest related to the conduct, findings, or dissemination of this research. They also state that the content of the article has not been influenced by financial, personal, or institutional relationships.

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