

GREEN BEHAVIOR AND WELL-BEING: A BIBLIOMETRIC AND NETWORK ANALYSIS OF RESEARCH TRENDS

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Green behavior and well-being is an interdisciplinary research domain linking environmental sustainability with mental health, happiness, and overall quality of life. Over the past three decades, it has gained substantial scholarly attention and emerged as a significant contemporary field. To examine its intellectual structure and publication trends, this study applies a bibliometric analysis of Web of Science-indexed articles. Using keyword co-occurrence analysis, six major thematic clusters were identified: nature-based public health, sustainable lifestyles, sustainable workplaces, climate perception and behavior, nature-related well-being, and subjective well-being. These clusters demonstrate that the field integrates insights from public health, environmental psychology, organizational studies, climate psychology, and happiness research, highlighting its strongly interdisciplinary nature. The results indicate that green behavior and well-being is evolving into a coherent and structured domain of inquiry. Moreover, the findings emphasize the reciprocal relationship between environmental quality and human flourishing at individual, organizational, and societal levels.

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1 Introduction

Global climate change is necessitating a fundamental shift in human behavior and consumption patterns toward environmental sustainability (Krumm, 2024). Previously, pro-environmental behavior was often viewed as a sacrifice, but contemporary research presents it as a positive “co-benefit,” meaning that environmental actions can simultaneously benefit both the planet and individual well-being (Zawadzki et al., 2020). Empirical evidence suggests that the intention to engage in green behaviors such as preferring environmentally friendly products despite higher prices and purchasing green products is positively associated with life satisfaction (Xiao & Li, 2011). To analyze this complex relationship, it is crucial to clearly define the constructs of a green lifestyle and well-being. Pro-environmental behavior refers to actions intended to reduce negative impacts on the environment; however, its psychological payoff often depends less on the objective action itself and more on an individual’s internal evaluation or green self-concept (Binder & Blankenberg, 2017a). Well-being is multidimensional and is typically divided into hedonic and eudaimonic components. The hedonic dimension, known as subjective well-being (SWB), includes cognitive evaluations, that is, “life satisfaction” and affective responses or “happiness or sense of belonging” (Welsch et al., 2021). In contrast, the eudaimonic tradition focuses on self-actualization and leading a meaningful life, measured through outcomes such as mental vitality and a sense of belonging (Guillen-Royo, 2019). Psychologically, engaging in non-material habits and activities that require “undivided attention”, often found in green Activities, helps shift the stressed and reactive “red mind” into a more relaxed “green mind,” thereby directly linking sustainable choices to improved neurological health (Pretty et al., 2017).

Binder et al. (2025) showed, based on data from a municipality in Germany, that the available evidence is not sufficient to confirm a strong and definitive positive relationship between pro-environmental behavior and life satisfaction. Their findings suggest that life satisfaction may not be driven solely by green behaviors and that other factors are likely to play a role in this relationship. Critical studies point to several important nuances. First, the positive link between well-being and pro-environmental behavior appears mainly in low-impact actions, such as small changes in consumption. There is no evidence that this relationship holds for behaviors that demand major effort or come with significant personal costs

(Krumm, 2024). Second, timing matters. When people expect very high levels of future well-being, those expectations can actually discourage them from engaging in pro-environmental behavior right now (Kaida & Kaida, 2016). Context also plays a major role. Participating in collective environmental activities, including activism, can sometimes be associated with lower life satisfaction. Yet this negative effect may weaken or even turn positive when individuals feel strongly connected to nature (Ibáñez-Rueda et al., 2020). Even so, recent quasi-experimental studies provide causal evidence that small efforts toward pro-environmental behavior can immediately lift positive emotions. For example, simply finding a new use for an old item can boost hedonic well-being (Prinzinger, 2024). Longitudinal findings reinforce this insight. Engaging in pro-environmental behaviors on a daily basis is causally linked to higher eudemonic well-being, especially a greater sense of meaning in life and stronger feelings of social connectedness (Caldarone et al., 2025).

Despite these insights, existing studies show substantial variation. They differ in context, define green behaviors in various ways-such as individual versus collective actions-and use different tools to measure well-being. As a result, the evidence is fragmented. A key issue is that many studies rely solely on cross-sectional or observational designs. Such approaches make it impossible to determine whether pro-environmental behaviors truly cause increases in well-being (Liu et al., 2022).

Among the 17 Sustainable Development Goals (SDGs) [see official UN link¹] adopted by the member states of the United Nations in 2015, the relationship between SDG 3 (Good health and well-being) and 12 (Responsible consumption and production), is the main focus of the study by Siva Rama Krishna et al. (2024), which looks at how green behavior affects sustainable health outcomes. Despite this contribution, there is still a clear research gap regarding the relationship between green behavior and well-being because no study has directly performed a quantitative mapping or network-based analysis in this area. The increased focus on sustainability in recent years has resulted in a substantial and varied body of research in various contexts. But this quick growth has also caused a significant amount of fragmentation in the literature.

¹ <https://sdgs.un.org/goals>

Because of this, it is now more crucial than ever to conduct a thorough bibliometric analysis in the area of green behavior and wellbeing. By using quantitative scientific mapping and network analysis, such an analysis can make the structure of current research more understandable. The objective is to show how the relationship between green behavior and well-being has changed over time while also identifying new research trends, theoretical underpinnings, and important thematic clusters. Additionally, this method can draw attention to the fields and writers who have had the biggest impact on this multidisciplinary conversation. The research questions of this study are:

What are the main publication trends, influential journals, and leading contributors in the field connecting green behavior and well-being? Which countries, and collaborations have played key roles in shaping this research area? What are the dominant research themes, theoretical perspectives, and conceptual clusters linking green behavior and well-being? How has the intellectual and thematic structure of this field evolved over time, and what emerging topics indicate future research directions?

2 Methodology

Bibliometric analysis has become highly popular due to the accessibility of online research databases and increased research output (Zhang et al., 2024). This quantitative approach helps researchers analyze the output of academia by identifying publication trends, mapping influential authors or institutions, and examining citation patterns (Liu et al., 2019). Following Donthu et al. (2021), this study uses performance analysis, science mapping, and network analysis to assess and visualize the current state of research on green behavior and well-being. We applied these bibliometric techniques to analyze research outputs concerning green behavior within the field of well-being. To achieve this goal, data analysis was performed in the Google Colab environment using Python (version 3.11). In this regard, the Pandas, NumPy, Matplotlib, and Seaborn libraries were used. Also, VOSviewer (version 1.6.20) software was used for clustering and visualization of scientific networks and portraying thematic clusters and influential countries.

Data collection

Web of Science, established in 1964, is one of the earliest and most authoritative citation databases. Given the interdisciplinary nature of this study, it was selected as the primary data source due to its selective indexing policy (Singh et al., 2021) and the depth and quality of its citation data (Aghaei Chadegani et al., 2013). Moreover, Web of Science is widely employed in bibliometric research because of its rigorous indexing standards, comprehensive citation metadata, and cross-disciplinary consistency, making it a reliable foundation for quantitative scientific mapping. Keywords were extracted through a review of the sustainability and well-being research area. We refined this initial list through iterative testing in the Web of Science database to ensure that the final search terms were both relevant to the topic and reflective of the broader academic discourse. The first component included terms related to green and sustainability concepts and their synonyms. The second focused on behavior and its related constructs. The third encompassed well-being and associated terms to capture the majority of relevant studies. The final component excluded terms unrelated to the study's objective, such as animal, fish, plant, and similar keywords. Applying the following search string yielded 11,696 records: ("green" OR "eco-friendly" OR "sustainable" OR "pro-environmental" OR "environmentally conscious" OR "eco conscious" OR "environmentally responsible" OR "sustainability-oriented") AND ("behavior" OR "attitude*" OR "intention*" OR "belief*" OR "perception*" OR "practice*" OR "lifestyle*" OR "decision*" OR "choice*") AND ("wellbeing" OR "well-being" OR "subjective wellbeing" OR "subjective well-being" OR "mental health" OR "quality of life" OR "happiness" OR "life satisfaction") NOT (plant* OR animal* OR species OR fish OR marine OR soil OR agriculture OR forestry OR "energy efficiency" OR "energy consumption" OR "waste management" OR "air pollution" OR "carbon emission*" OR "emission reduction" OR "building design" OR "urban planning" OR "renewable energy").

Aiming to focus on human behavior and psychological well-being, this research does not delve into areas such as urban planning or building design. Narrowing the scope of the research in this way ensures that our findings remain aligned with the main goal of the research, which is to understand sustainability at the individual level. Subsequently, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) procedure was employed to refine the dataset and identify the

final sample of publications. Several filters were applied. First, only peer-reviewed articles published in English were retained. Given the interdisciplinary scope of green behavior (Li et al., 2019) and well-being (Fabian, 2021; Sigfusdottir et al., 2017), relevant research domains included psychology, sociology, business and economics, public, environmental, and occupational health, and social sciences. In the final stage, documents were screened based on keywords and abstracts, followed by full-text assessment to confirm relevance. Screening of titles, abstracts, and full text of articles was performed by the authors to ensure consistent application of inclusion and exclusion criteria. The selection process was guided by PRISMA protocols and involved systematic steps, including identification, removal of duplicates, and rigorous screening of eligible articles. Figure 1 provides a graphical detail of how the final sample was obtained. This process resulted in a final dataset of 3,210 articles.

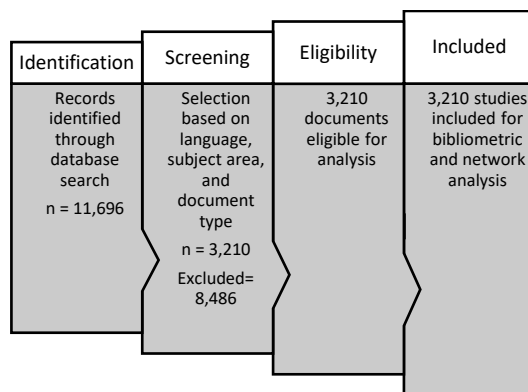


Figure 1: PRISMA technique for selecting documents

Source: Authors' elaboration based on PRISMA procedure

3 Results and Finding

Table 1 summarizes the bibliometric characteristics of the 3,210 documents identified. The dataset spans the period 1986–2025, encompassing the full range of publications retrieved from the database based on the applied search query. At the time of data collection (November 13, 2025), the most cited article had received 1,703 citations, with an average of 22.48 citations per document. The International Journal of Environmental Research and Public Health is the most influential outlet

in terms of publication volume, while Heesup Han is the most active author, with 25 publications.

Table 1: overall overview of the dataset

Metric	Value
Total Publications	3,210
Year Range	1986-2025
Total Unique Authors	12,070
Total Journals	963
Document Average Age	4.03
Total Keywords	9,710
Average Authors per Paper	4.07
Average Citations per Paper	22.48
Total Citations	72,168
Most Cited Paper (Citations)	1,703
Most Productive Author	Han, Heesup
Most Productive Author Papers	25
Most Common Journal	<i>International Journal of Environmental Research and Public Health</i>

Source: Authors' calculations based on Web of Science dataset

3.1 Research output trend

Figure 2 shows the trend of publications over the years. This trend started in 1986 with one publication, and until 1993, there were no other publications. However, since the 1990s, a slow but steady research stream continued until the mid-2010s. By that time, yearly publication output never reached 50 per year, but from 2015 to the present, the research in this field has grown substantially, and in 2025, a record number of 685 articles was reached.

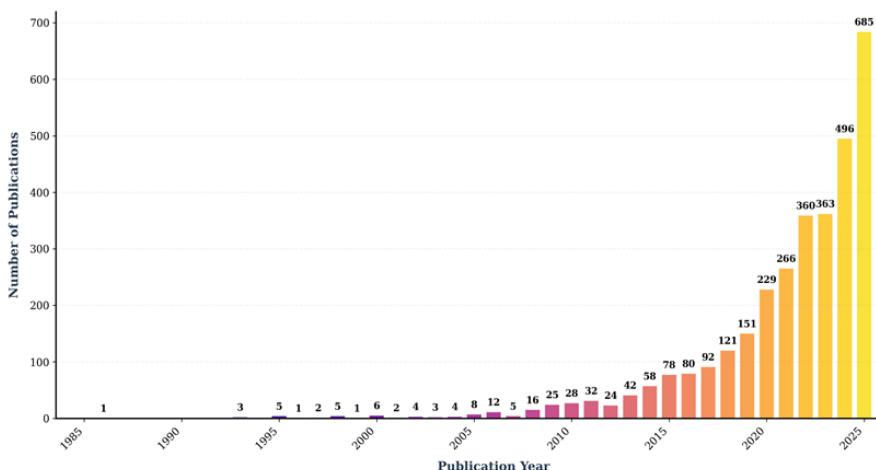


Figure 2: research trend of green behavior and well-being

Source: Authors' calculations

3.2 Top Article Analysis

The table 2 shows the top-cited articles in the field of green behavior and well-being. Lyubomirsky et al. (2005), with the article titled “Pursuing happiness: The architecture of sustainable change” and 1,703 citations, is the most cited work, receiving almost twice as many citations as the second article. According table 2, the top ten most cited articles follow two main research streams. One stream is grounded in environmental psychology and public health, while the other focuses on green business and sustainable management. In these studies, nature connectedness, which refers to how individuals perceive their relationship with the natural environment, is directly examined in some of the top-cited articles such as Capaldi et al. (2014) and Martin et al. (2020). This concept is also closely related to other themes found in the table, including green space and neighborhood greenness, which are commonly used to explore how contact with nature can enhance happiness, well-being, and pro-environmental behavior. Despite our interdisciplinary Approach in selecting research areas, Table 3 shows that most of the top-cited articles are published in the fields of psychology, public health, and sustainability.

Table 2: Top-citation green behavior and well-being

Title	Authors	Year	Citations	Journal	Journal IF*
Pursuing happiness: The architecture of sustainable change	Lyubomirsky, S; Sheldon, KM; Schkade, D	2005	1,703	Review of General Psychology	3.2
Mainstreaming Green Product Innovation: Why and How Companies Integrate Environmental Sustainability	Dangelico, R & Pujari, D	2010	859	Journal of Business Ethics	6.7
Green space as a buffer between stressful life events and health	van den Berg, AE; Maas, J; Verheij, RA; Groenewegen, PP	2010	804	Social Science & Medicine	5
Morbidity is related to a green living environment	Maas, J; Verheij, RA; de Vries, S; Spreeuwenberg, P; Schellevis, FG; Groenewegen, PP	2009	754	Journal of Epidemiology and Community Health	3.7
The relationship between nature connectedness and happiness: A meta-analysis	Capaldi, CA; Dopko, RL; Zelenski, JM	2014	748	Frontiers in Psychology	2.9
Associations of neighborhood greenness with physical and mental health: do walking, social coherence and local social interaction explain the relationships?	Sugiyama, T; Leslie, E; Giles-Corti, B; Owen, N	2008	616	Journal of Epidemiology and Community Health	3.7
Understanding how consumers view green hotels: how a hotel's green image can influence behavioural intentions	Lee, JS; Hsu, LT; Han, H; Kim, Y	2010	597	Journal of Sustainable Tourism	7.8
Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle	Brown, KW; Kasser, T	2005	590	Social Indicators Research	2.8
Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours	Martin, L; White, MP; Hunt, A; Richardson, M; Pahl, S; Burt, J	2020	552	Journal of Environmental Psychology	7
Building Sustainable Organizations: The Human Factor	Pfeffer, J	2010	543	Academy of Management Perspectives	5.7

Source: Authors' calculations

***Table note:** Journal IF refers to the journal's Impact Factor, which indicates the average number of citations received per paper published in that journal during the previous two years.

3.3 Top Journal Analysis

Table 3: top 10 most influential journal of green behavior and well-being

Journal Name	Number of Publications	Percentage (%)	Total Citations	Avg Citations	Journal impact factor	publisher	SJR* 2024
International Journal of Environmental Research and Public Health	188	5.86	4522	24.05	0.919	MDPI	Q2
Frontiers in Psychology	111	3.46	3205	28.87	0.872	Frontiers Media SA	Q2
Frontiers in Public Health	83	2.59	661	7.96	1.027	Frontiers Media SA	Q1
BMC Public Health	82	2.55	1622	19.78	1.359	BioMed Central Ltd	Q1
Ecological Economics	58	1.81	3078	53.07	2.088	Elsevier	Q1
Journal of Environmental Psychology	44	1.37	2132	48.45	2.208	Academic Press	Q1
Journal of Sustainable Tourism	43	1.34	2499	58.12	2.733	Taylor and Francis Ltd.	Q1
Social Indicators Research	41	1.28	1568	38.24	0.933	Springer Netherlands	Q1
Health & Place	32	1.00	1838	57.44	1.456	Elsevier	Q1
Health Promotion International	24	0.75	380	15.83	0.830	Oxford University Press	Q1

Source: Authors' calculations

Table note: SJR* 2024 indicates the SCImago Journal Rank score for each journal based on Scopus data

Table 3 displays the top ten journals contributing most to the field of green behavior and well-being. The top position on this list goes to the International Journal of Environmental Research and Public Health (IJERPH), with 188 publications and an average of 24.05 citations. This citation rate is lower than that of six other journals with fewer Publications. This discrepancy can be seen in the next three ranks: Frontiers in Psychology, Frontiers in Public Health, and BMC Public Health. Since these three journals are fully open access, their articles benefit from wider visibility and accessibility, which can naturally lead to higher citation rates compared to journals that have not always followed the same access model. This can also be interpreted in relation to the varying degrees of specialization among journals. IJERPH publishes a broad range of topics and has the highest productivity, whereas

3.4 International Collaboration Network

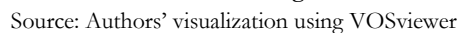


Figure 3 presents a bibliometric map of international collaboration among countries in the field of green behavior and well-being. The VOSviewer program was used to generate this figure, with a threshold set at five articles, in order to focus on countries with a meaningful level of research output and to avoid visual clutter in the collaboration network. Out of 147 countries with publications in this field, only 82 met this criterion. Regarding documents, the USA leads with 618 publications,

followed by England (439), China (365), and Australia (283). For total citations, the USA, with 18,378 citations, remains the top country, followed by England (12,485), Australia (8,774), and Canada (7,511). As is clear, the USA is the leading power in the field and has the greatest influence on shaping the direction of the research. Strong co-authorship links of these countries with others show they serve as global research hubs, enabling regional knowledge sharing and facilitating collaborative research efforts.

3.5 Keyword Co-Occurrence and Thematic Clusters

The result of the co-occurrence analysis of author keywords using VOSviewer is shown in Figure 4. A minimum occurrence threshold of 15 was applied, meaning that only keywords appearing at least 15 times in the dataset were included. This value was chosen to ensure meaningful representation of frequently used terms and to prevent visual clutter on the map, in line with common practice in bibliometric mapping. Before using VOSviewer, a structured data-cleaning process was conducted, which reduced the initial 9,710 keywords to 9,628. This process included merging singular and plural forms, harmonizing British and American spellings, expanding abbreviations, and removing duplicates or irrelevant terms. Such steps are recommended in bibliometric methodology, as variations in keyword formats can distort co-occurrence structures and reduce the reliability of the analysis. (Donthu et al., 2021) As shown in Figure 4 and Table 4, six clusters with different colors and thematic labels were generated. The first cluster is the red cluster labelled Nature-based Public Health, comprising 20 items. It is the largest cluster with a biomedical and psychological focus, indicated by keywords such as *anxiety*, *depression*, *obesity*, *stress*, and *mental health*. Keywords like *green spaces*, *built environment*, and *nature point to the role of urban planning interventions in supporting community mental health*.

The second cluster is labelled Sustainable Lifestyles with a green color, due to the presence of keywords such as *lifestyle*, *values*, *adolescents*, *community*, and *education*. These keywords highlight the sociological aspects of sustainability. The presence of keywords like *sustainable tourism* and *tourism impacts* shows the depth of the sustainable lifestyle and indicates that this aspect is not limited to household-based issues.

The blue cluster, labelled Sustainable Workplaces, contains keywords related to the occupational aspects of sustainability, such as *burnout*, *job satisfaction*, *resilience*, *work*

engagement, and sustainable HRM. Clearly, this research area emphasizes how organizational and managerial sustainability can impact employee well-being and resilience. The presence of the COVID-19 keyword in this cluster can be an indication of the effect of the crisis on workplace sustainability.

The yellow cluster labelled Climate Perception & Behavior includes keywords like *climate change, eco-anxiety, emotion, materialism, and pro-environmental behavior*. This suggests that environmental changes can trigger specific perceptions and green behaviors. Overall, this cluster indicates the potential for expanding climate psychology research.

Purple cluster with seven items, including *positive psychology, nature connectedness, green exercise, and decision-making*, is labelled Nature-Connected Well-being. This cluster demonstrates that well-being is closely tied to engaging with the natural environment. Connecting with nature can enhance emotional health and psychological resilience.

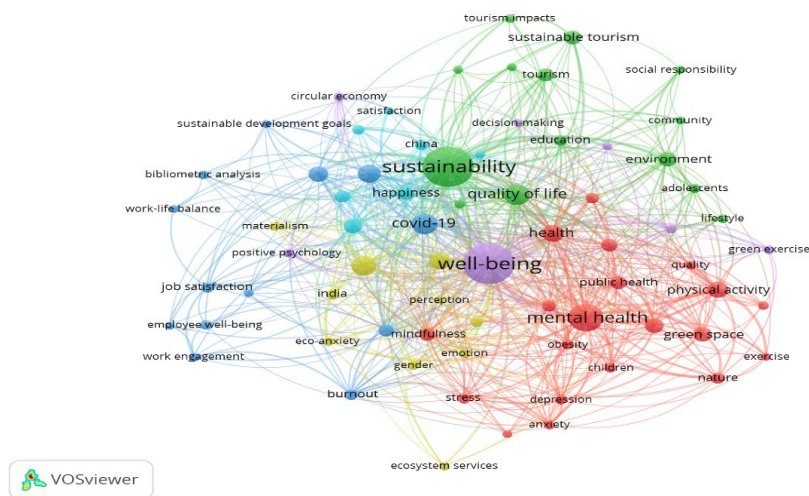


Figure 4: Keyword co-occurrence network of green behavior and well-being

Source: Authors' visualization using VOSviewer

Lastly, a light blue cluster with seven items is labelled Subjective Well-being. This cluster covers personal experiences of well-being, such as *happiness and life satisfaction*.

Additionally, the inclusion of the *machine learning* keyword indicates a data-driven approach in green behavior and well-being research. The presence of the keyword *China* in this cluster highlights China's geographical focus in this area.

Table 4: Thematic clusters derived from the co-occurrence network

Cluster	color	Labels	Items
Cluster 1 (20 items)	Red	Nature-based Public Health	built environment; anxiety; children; depression; exercise; green space; health; health promotion; implementation; mental health; mindfulness; nature; obesity; older adults; physical activity; public health; qualitative research; quality; stress; urban green spaces
Cluster 2 (14 items)	Green	Sustainable Lifestyles	adolescents; community; education; environment; environmental sustainability; innovation; lifestyle; quality of life; social responsibility; sustainability; sustainable tourism; tourism; tourism impacts; values
Cluster 3 (13 items)	Blue	Sustainable Workplaces	bibliometric analysis; burnout; corporate social responsibility; covid-19; employee well-being; job satisfaction; leadership; resilience; sustainable development goals; sustainable HRM; work engagement; work-life balance
Cluster 4 (10 items)	Yellow	Climate Perception & Behavior	Climate change; eco anxiety; ecosystem service; emotion; gender; India; materialism; perception; self-efficiency ; pro environmental behavior;
Cluster 5 (7 items)	Purple	Nature-connected Well-being	positive psychology; well-being; nature connectedness; green exercise; equity; decision making; circular economy
Cluster 6 (7 items)	Light blue	Subjective Well-being	China; happiness; life satisfaction; machine learning; place attachment; satisfaction; sustainable consumption

Source: Authors' calculations

3.6 Thematic Evolution Heatmap

Figure 5 presents the evaluation of the top 20 keywords from 1986 to the present. The keyword heatmap shows a consistent but low presence of green behavior and well-being–related keywords until 2014. However, after 2014–2015, an explosive growth occurred across almost all of the top twenty keywords. Sustainability, well-being, and mental health became the dominant themes in the field, and after 2019, a noticeable increase in their frequency appears. The post-2020 period can be considered the golden era of this field, as most keywords reached their highest values, indicating greater researcher interest, more diversified research output, and further consolidation.

The keyword “sustainable development goals” emerged after 2015, reflecting its entry into the literature on green behavior and well-being immediately following the introduction of the United Nations’ 17 Sustainable Development Goals in March

Source: Authors' visualization using Python

4 Conclusion

This research aimed to map the green behavior and well-being research output to date. The results highlighted driving themes of the field, current trends, influential journals, authors, and papers. According to the findings, it can be concluded that the year 2015 marks a clear turning point in this field, as it coincides with the introduction of the UN Sustainable Development Goals, which triggered a substantial rise in research output. Since then, keywords such as sustainability and well-being have appeared in nearly every publication, reflecting a broad integration of these themes into the core of scholarly work. The prominence of these concepts surged even further following the COVID-19 pandemic, suggesting a growing recognition that time spent in nature and eco-friendly lifestyle choices can serve as meaningful pathways to enhanced mental well-being and improved overall quality of life.

Research is mainly categorized into six main thematic clusters, namely: Nature-based Public Health, Sustainable Lifestyles, Sustainable Workplaces, Climate Perception & Behavior, Nature-connected Well-being, and Subjective Well-being. Despite the global interest in green behavior and the well-being area, the USA, England (as separate from the UK), China, and Australia dominate the global collaboration networks. The findings of this paper are novel and, in some cases, align with previous studies. In most of the studies with a bibliometric approach with a sustainability focus, the mid-2010s marks a turning point with a surge in research. This trend is reflected in studies such as Si et al. (2019), Font-Barnet & Nel-lo Andreu (2021), Hák et al. (2016), and Bai et al. (2025). Six different clusters also depict a thematic picture of the green behavior and sustainability field. The idea of the first cluster is supported by studies by Lackey et al. (2019) and Bratman et al. (2012), which emphasize nature's uplifting role and the promotion of mental health. The cluster of sustainable lifestyles is also discussed in Brülde's (2014) book, where he explains that sustainable lifestyles can lead to well-being and a happy life in the long term. A sustainable workplace is also another thematic cluster that was discussed in Cinar & Bilodeau's (2022) study. According to their research, a sustainable workplace positively impacts mental health and well-being, which are essential components for achieving sustainable development and are addressed in SDG 3 (Cinar & Bilodeau, 2022). The SDG 3 promotes good health and well-being, covering physical and mental wellbeing of individual and society (Mexico et al., 2018). The fourth cluster,

i.e., climate perception and behavior, was discussed in a systematic literature review covering the years 2012 to 2022, and it shows that climate change perception correlates with lower resilience and well-being (Gianfredi et al., 2024). The fifth cluster includes keywords indicating that nature connection enhances well-being. The findings of Capaldi et al. (2015) showed that disconnection from nature can lead to declines in both hedonic and eudaimonic well-being. The last cluster from the co-occurrence analysis was labeled Subjective Well-being. To measure subjective well-being, Steverink et al. (2001) focused on aging and individual resources, while Diener (1998) discussed that personality is an important factor in predicting long-term well-being. Additionally, more recent studies, such as the research by Jaidka et al. (2020), used machine learning approaches to measure subjective well-being, which was also mentioned in the sixth cluster.

These six clusters show how green behavior and well-being span different research disciplines. The results showed that this field is becoming an independent research area and should not be considered as an extension to sustainability or environmental psychology. The thematic breadth connects different research fields such as public health, pro-environmental behavior, organizational science, climate psychology, and subjective well-being, and understanding this field needs an interdisciplinary perspective. The similarity of the foundation of green behavior and well-being can be seen as the shift in the paradigm where environmental quality and human flourishing are increasingly studied as interdependent phenomena at the individual, organizational, and social levels. In the end, the evidence points to something important: living more sustainably is not just about protecting the planet; it also supports our own sense of fulfillment. By pulling together these diverse threads into one clear picture, this analysis gives future researchers a strong starting point and offers practical ideas for policies that can protect the environment while looking after people's mental health in a world facing serious challenges.

This study presents comprehensive bibliometric analyses of green behavior and well-being research, covering over thirty years of research. It highlights key authors, articles, journals, and countries, and employs co-occurrence analysis to identify research trends in the field. These clusters demonstrate the popularity of each theme, and future researchers can use these themes as guidelines to position their research within the existing body of knowledge. This study, in addition to expanding current bibliometric research, offers a comprehensive approach to the field of green

behavior and well-being, emphasizing the interconnection of different disciplines and methodologies. Despite the novelty of this research, this study is also constrained by some limitations. This study exclusively relied on Web of Science data, which may limit the study to capturing all publications in the field of green behavior and well-being.

Even though this study is a novel approach to the field of well-being and green behavior, future studies can promote the findings by considering the following suggestion. Relevant publications should encompass other databases, such as Scopus, PubMed, PsycINFO, ERIC, or those published in non-indexed outlets. Additionally, the analysis is affected by well-known citation biases that favor English-language journals and well-funded institutions. This can strengthen the advantage of historically prominent countries like the UK and the USA, while failing to recognize researchers in underrepresented regions, who often face citation disadvantages. To resolve this, future research should take into account the altmetrics or normalization methods to minimize these biases. Also, combining this technique with qualitative methodologies will improve the validity of the approach.

References

- Aghaei Chadegani, A., Salehi, H., Md Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ale Ebrahim, N. (2013). A comparison between two main academic literature collections: Web of Science and Scopus databases. *Asian Social Science*, 9(5), 18–26.
<https://doi.org/10.5539/ass.v9n5p18>.
- Bai, J., Wang, Y., & Chang, Q. (2025). Cultural ecosystem services of urban green space for human well-being: A literature review based on bibliometrics and knowledge mapping analysis. *Transactions in Earth, Environment, and Sustainability*, 2(3–4), 191–212.
<https://doi.org/10.1177/2754124X251331602> (Original work published 2024)
- Binder, M., & Blankenberg, A.-K. (2017). Green lifestyles and subjective well-being: More about self-image than actual behavior? *Journal of Economic Behavior & Organization*, 137, 304–323.
<https://doi.org/10.1016/j.jebo.2017.03.009>
- Binder, M., Blankenberg, A.-K., & Nickel, J. (2025). Pro-environmental behavior and life satisfaction: How strong is our evidence? *Ecological Economics*, 237, 108684.
<https://doi.org/10.1016/j.ecolecon.2025.108684>
- Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York Academy of Sciences*, 1249(1), 118–136. <https://doi.org/10.1111/j.1749-6632.2011.06400.x>
- Brown, K. W., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research*, 74(2), 349–368.
<https://doi.org/10.1007/s11205-004-8207-8> IDEAS/RePEc
- Brülde, B. (2014). Well-being, happiness, and sustainability. In *Well-being in contemporary society* (pp. 157–176). Cham: Springer International Publishing.

- Caldaroni, S., Gerbino, M., Schmiedek, F., Neubauer, A. B., Manfredi, L., Gregori, F., Pastorelli, C., Corbelli, G., & Zuffianò, A. (2025). The positive effect of pro-environmental behavior on eudaimonic well-being in young adults: A daily diary study using the within-person encouragement design. *Journal of Personality*. <https://doi.org/10.1111/jopy.13021>
- Capaldi, C. A., Dopko, R. L., & Zelenski, J. M. (2014). The relationship between nature connectedness and happiness: A meta-analysis. *Frontiers in Psychology*, 5, 976. <https://doi.org/10.3389/fpsyg.2014.00976> Frontiers
- Capaldi, C. A., Passmore, H.-A., Nisbet, E. K., Zelenski, J. M., & Dopko, R. L. (2015). Flourishing in nature: A review of the benefits of connecting with nature and its application as a wellbeing intervention. *International Journal of Wellbeing*, 5(4), 1–16. <https://doi.org/10.5502/ijw.v5i4.449>
- Chadegani, A. A., Salehi, H., Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ebrahim, N. A. (2013). A comparison between two main academic literature collections: Web of Science and Scopus databases. *arXiv preprint arXiv:1305.0377*
- Cinar, A. B., & Bilodeau, S. (2022). Sustainable workplace Mental well Being for sustainable SMEs: How? *Sustainability*, 14(9), 5290. <https://doi.org/10.3390/su14095290>
- Dangelico, R. M., & Pujari, D. (2010). Mainstreaming green product innovation: Why and how companies integrate environmental sustainability. *Journal of Business Ethics*, 95(3), 471–486. <https://doi.org/10.1007/s10551-010-0434-0> SpringerLink
- Diener, E. (1998). Subjective well-being and personality. In *Advanced personality* (pp. 311–334). Boston, MA: Springer US.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Fabian, M. (2021). Improving interdisciplinary research in well-being—A review with further comments of Michael Bishop's *The Good Life: Unifying the Philosophy and Psychology of Well-Being*. *Journal of Happiness Studies*, 22(6), 2829–2844. <https://doi.org/10.1007/s10902-020-00333-6>
- Font-Barnet, A., & Nel-lo Andreu, M. (2021). Research on tourism, well-being, and nature: a bibliometric analysis. *Anatolia*, 34(2), 163–175. <https://doi.org/10.1080/13032917.2021.2002699>
- Gianfredi, V., Mazziotta, F., Clerici, G., Astorri, E., Oliani, F., Cappellina, M., Catalini, A., Dell'Osso, B. M., Pregliasco, F. E., Castaldi, S., & Benatti, B. (2024). Climate Change Perception and Mental health. results from a Systematic Review of the Literature. *European Journal of Investigation in Health, Psychology and Education*, 14(1), 215–229. <https://doi.org/10.3390/ejihpe14010014>
- Guillen-Royo, M. (2019). Sustainable consumption and wellbeing: Does on-line shopping matter? *Journal of Cleaner Production*, 229, 1112–1124. <https://doi.org/10.1016/j.jclepro.2019.05.061>
- Hák, T., Janoušková, S., & Moldan, B. (2016). Sustainable development goals: A need for relevant indicators. *Ecological Indicators*, 60, 565–573. <https://doi.org/10.1016/j.ecolind.2015.08.003>
- Ibáñez-Rueda, N., Guillén-Royo, M., & Guardiola, J. (2020). Pro-environmental behavior, connectedness to nature, and wellbeing dimensions among Granada students. *Sustainability*, 12(21), 9171. <https://doi.org/10.3390/su12219171>
- Jaidka, K., Giorgi, S., Schwartz, H. A., Kern, M. L., Ungar, L. H., & Eichstaedt, J. C. (2020). Estimating geographic subjective well-being from Twitter: A comparison of dictionary and data-driven language methods. *Proceedings of the National Academy of Sciences*, 117(19), 10165–10171. <https://doi.org/10.1073/pnas.1906364117>
- Kaida, N., & Kaida, K. (2016). Pro-environmental behavior correlates with present and future subjective well-being. *Environment, Development and Sustainability*, 18(1), 111–127. <https://doi.org/10.1007/s10668-015-9629-y>

- Krumm, L. (2024). The relationship between pro-environmental behavior, subjective well-being, and environmental impact: a meta-analysis. *Environmental Research Letters*, 19(9), 094056. <https://doi.org/10.1088/1748-9326/ad6888>
- Lackey, N. Q., Tysor, D. A., McNay, G. D., Joyner, L., Baker, K. H., & Hodge, C. (2019). Mental health benefits of nature-based recreation: a systematic review. *Annals of Leisure Research*, 24(3), 379–393. <https://doi.org/10.1080/11745398.2019.1655459>
- Lee, J. S., Hsu, L.-T., Han, H., & Kim, Y. (2010). Understanding how consumers view green hotels: How a hotel's green image can influence behavioural intentions. *Journal of Sustainable Tourism*, 18(7), 901–914. <https://doi.org/10.1080/09669581003777747> Taylor & Francis Online
- Liu, W., Wang, J., Li, C., Chen, B., & Sun, Y. (2019). Using bibliometric analysis to understand the recent progress in agroecosystem services research. *Ecological Economics*, 156, 293–305.
- Liu, Y., Cleary, A., Fielding, K. S., Murray, Z., & Roiko, A. (2022). Nature connection, pro-environmental behaviours and wellbeing: Understanding the mediating role of nature contact. *Landscape and Urban Planning*, 228, 104550. <https://doi.org/10.1016/j.landurbplan.2022.104550>
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9(2), 111–131. <https://doi.org/10.1037/1089-2680.9.2.111> SAGE Journals+2ResearchGate+2
- Maas, J., Verheij, R. A., de Vries, S., Spreeuwenberg, P., Schellevis, F. G., & Groenewegen, P. P. (2009). Morbidity is related to a green living environment. *Journal of Epidemiology and Community Health*, 63(12), 967–973. <https://doi.org/10.1136/jech.2008.079038> PubMed
- Martin, L., White, M. P., Hunt, A., Richardson, M., Pahl, S., & Burt, J. (2020). Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours. *Journal of Environmental Psychology*, 68, 101389. <https://doi.org/10.1016/j.jenvp.2020.101389> Pearl
- Pfeffer, J. (2010). Building sustainable organizations: The human factor. *Academy of Management Perspectives*, 24(1), 34–45. <https://doi.org/10.5465/amp.24.1.34>
- Pretty, J., Rogerson, M., & Barton, J. (2017). Green mind theory: How brain-body-behaviour links into natural and social environments for healthy habits. *International Journal of Environmental Research and Public Health*, 14(7), 706. <https://doi.org/10.3390/ijerph14070706>
- Prinzing, M. M. (2024). Proenvironmental behavior increases subjective well-being: Evidence from an experience-sampling study and a randomized experiment. *Psychological Science*, 35(9), 951–961. <https://doi.org/10.1177/09567976241251766>
- Si, H., Shi, J.-g., Tang, D., Wen, S., Miao, W., & Duan, K. (2019). Application of the theory of planned behavior in environmental science: A Comprehensive Bibliometric Analysis. *International Journal of Environmental Research and Public Health*, 16(15), 2788. <https://doi.org/10.3390/ijerph16152788>
- Sigfusdottir, I. D., Kristjansson, A. L., Thorlindsson, T., & Allegrante, J. P. (2017). Stress and adolescent well-being: the need for an interdisciplinary framework. *Health promotion international*, 32(6), 1081-1090.
- Singh, V.K., Singh, P., Karmakar, M. et al. The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis. *Scientometrics* 126, 5113–5142 (2021). <https://doi.org/10.1007/s11192-021-03948-5>
- Siva Rama Krishna, J., Kumar, S., & Kirmani, M. D. (2024). Green behaviour engagement towards the achievement of sustainable health: A systematic review and bibliometric analysis. *Social Marketing Quarterly*, 30(4), 183–222. <https://doi.org/10.1177/15245004241289389>
- Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(6), P364-P373.
- Sugiyama, T., Leslie, E., Giles-Corti, B., & Owen, N. (2008). Associations of neighbourhood greenness with physical and mental health: Do walking, social coherence, and local social

- interaction explain the relationships? *Journal of Epidemiology and Community Health*, 62(5), e9. <https://doi.org/10.1136/jech.2007.064287> PubMed
- van den Berg, A. E., Maas, J., Verheij, R. A., & Groenewegen, P. P. (2010). Green space as a buffer between stressful life events and health. *Social Science & Medicine*, 70(8), 1203–1210. <https://doi.org/10.1016/j.socscimed.2010.01.002> nivel.nl+1
- Welsch, H., Binder, M., & Blankenberg, A.-K. (2021). Green behavior, green self-image, and subjective well-being: Separating affective and cognitive relationships. *Ecological Economics*, 179, 106854. <https://doi.org/10.1016/j.ecolecon.2020.106854>
- Xiao, J. J., & Li, H. (2011). Sustainable consumption and life satisfaction. *Social Indicators Research*, 104(2), 323–329. <https://doi.org/10.1007/s11205-010-9746-9>
- Zawadzki, S. J., Steg, L., & Bouman, T. (2020). Meta-analytic evidence for a robust and positive association between individuals' pro-environmental behaviors and their subjective wellbeing. *Environmental Research Letters*, 15(12), 123007. <https://doi.org/10.1088/1748-9326/abc4ae>
- Zhang, X., Panatik, S. A., & Zhang, N. (2024). Employee green behavior: bibliometric-content analysis. *Heliyon*, 10(10), e31045. <https://doi.org/10.1016/j.heliyon.2024.e31045>

Declaration of AI Use

The authors used AI-assisted tools for language editing and improving the clarity and readability of the manuscript. The intellectual content, research design, analysis, interpretation, and conclusions are the authors' own.

