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Bibliometric insights into solar energy and its role in employment generation

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Abstract

This research explores worldwide trends in publications, outstanding contributors, and developments of topics in solar energy and examines their effects on employment, as well as pointing out areas of research that need to be further explored in the future. A total of 695 articles retrieved from the Scopus database were investigated with the help of Biblioshiny and VOSviewer to identify performance metrics, authorship patterns, and theme structures. The data showed that India, China, and the US are the main contributors along with greater international cooperation and research output. Theme mapping through four areas highlights solar skill training, technological adoption, institutional policy support, and socioeconomic impact as the main priorities. The results of this study reveal to major opportunity areas for governments to reinforce their national skill programs, for businesses to tap into employment, ready markets, and for researchers to study developing and the least represented areas.

Keywords: *solar energy, solar power generation, employment and renewable energy*

1. Introduction

Solar power, as the mainstay of sustainable energy, has become a crucial solution not only for climate change mitigation but also for job creation and training worldwide (Adewumi et al. 2024; Maka et al. 2022; Ukoba et al. 2024; Saleh & Hassan, 2024). With the momentum behind green energy, the number of job openings for qualified workers will surge. Consequently, besides India and China, the United States, Brazil, and many European countries have started educational programs aimed at providing huge numbers of people with solar installation, maintenance, and system design skills (Khosla et al. 2020). In fact, global entities like IRENA and NREL consider validation, practical experience, and certifications vital for the expansion of the international solar workforce (Altassan, 2023; Kishore et al. 2025).

Most of the existing literature has concentrated on technology diffusion, environmental aspects, and policy issues (Bueno et al. 2024; Obaideen et al. 2023; Kut & Pietrucha, Urbanik, 2024). However, little attention has been given to the relationship between these training programs and employment effects worldwide. In fact, research has only yielded partial information and no overall evaluation of publication patterns or main areas of knowledge for solar, skill, employment investigations (National Renewable Energy Laboratory, 2022; Kut & Pietrucha, Urbanik, 2024).

This paper investigates 695 Scopus-indexed articles using Biblioshiny and VOSviewer to bridge a knowledge gap. In identifying thematic clusters using bibliometric and VOSviewer performance factors, we also focus on authorship, institutional affiliations, and country-level contributions. Besides, the yearly publication trend indicates a marked rise since 2015 and peaking in 2024 which aligns with the worldwide increase of green energy regulations. The results reveal that India, China, and United States are the leading contributors by publication volume, which is likely promoting the existing solar energy policy and workforce development programs. The most prominent authors, such as Liu Y. Sharma A. and Xu X. have been identified as major influencers, while Indian and Chinese institutions were found to be leading sources of collaborative research. Aside from the broad themes (effectiveness of training, technology acceptance, governance structures, and socioeconomic impacts) highlighted here, the research work is derived from a series of Scopus-indexed academic papers. These papers not only guide thematic progression but also shed light on the present academic trends and research deficiencies.

The other sections of the paper are organized as follows: Section 2 details the research methodology, Section 3 is the analysis and findings, and Section 4 is the discussion, limitations and policy implications.

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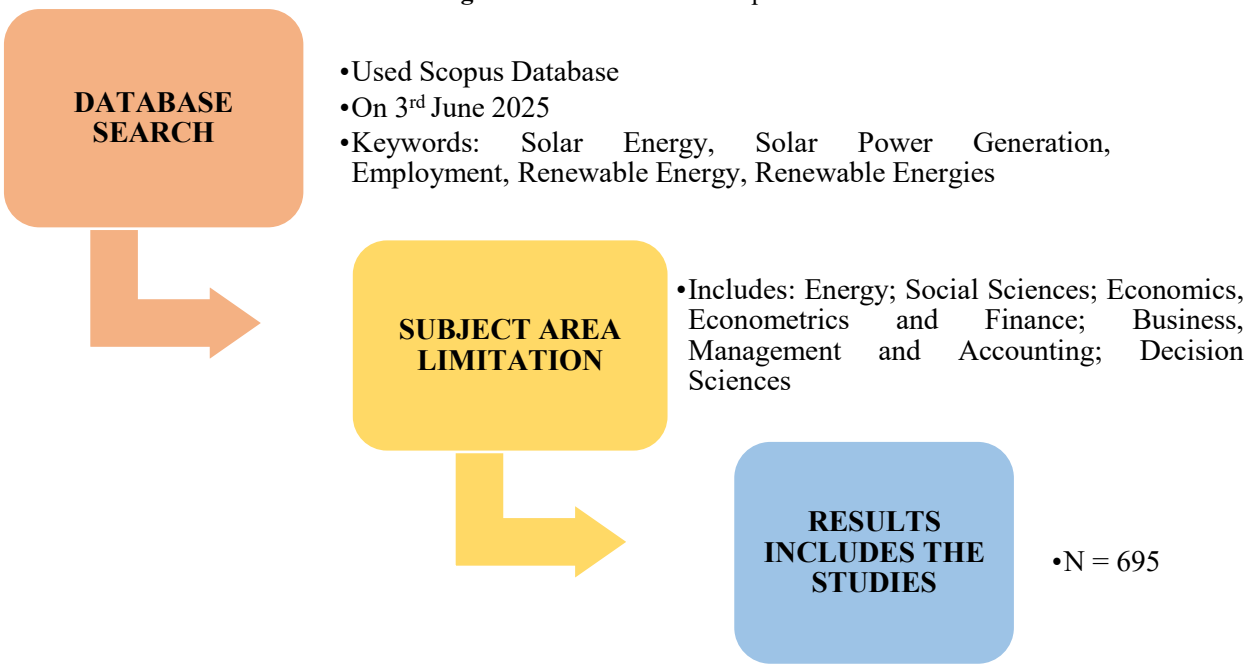
2. Research methodology

This present study conducts bibliometric analysis to scan the scholarly research on solar skill development and job creation. This approach enables users to present the evolution of sciences, recognize leading authors, and find thematic clusters (Lyu et al. 2024). Scopus was the base that was used for data extraction because it is recognized as one of the most widely used resources for bibliometric research (Lakshmi Devi et al. 2024).

Collection of Data

Search was done based on the collection of data on 13th May 2025 for articles containing keywords like solar energy employment, solar power generation, renewable energy (Fig. 1) After that the filtering by Subject Area was performed to only include the most relevant areas, example: Energy, Social Sciences, Economics Econometrics and Finance, Business Management and Accounting, and Decision Sciences. At last English-language documents were retained only. There were 695 final documents ranging from 1959 to 2025 that made after the filtering for study.

Figure 1. Finalization of sample data



Source: Authors

Analysis tools

The bibliometric methods used included Biblioshiny application from the R package and Microsoft Excel. These two products are complementary for performance analysis, co-authorship mapping, and scientific visualization (Lyu et al., 2024; Das et al., 2025). A structured literature study under TCCM framework led to an interesting discussion along with finding of research gap.

Table 1. Main information about data

Category	Indicator	Value
General information	Timespan	1959:2025
	Sources (Journals, Books, etc.)	345
	Documents	695
	Annual Growth Rate (%)	5.97
	Document Average Age	6.71
	Average Citations per Document	22.76
	References	32000
Document types	Article	459
	Book	3
	Book Chapter	37
	Conference Paper	135
	Conference Review	1
	Review	60

Table 1. Continued

Category	Indicator	Value
Document contents	Keywords Plus (ID)	5138
	Author's Keywords (DE)	2165
	Authors	
	Authors of Single-Authored Documents	2318
Authors collaboration	Single-Authored Documents	72
	Co-authors per Document	3.69
	International co-authorships %	27.48

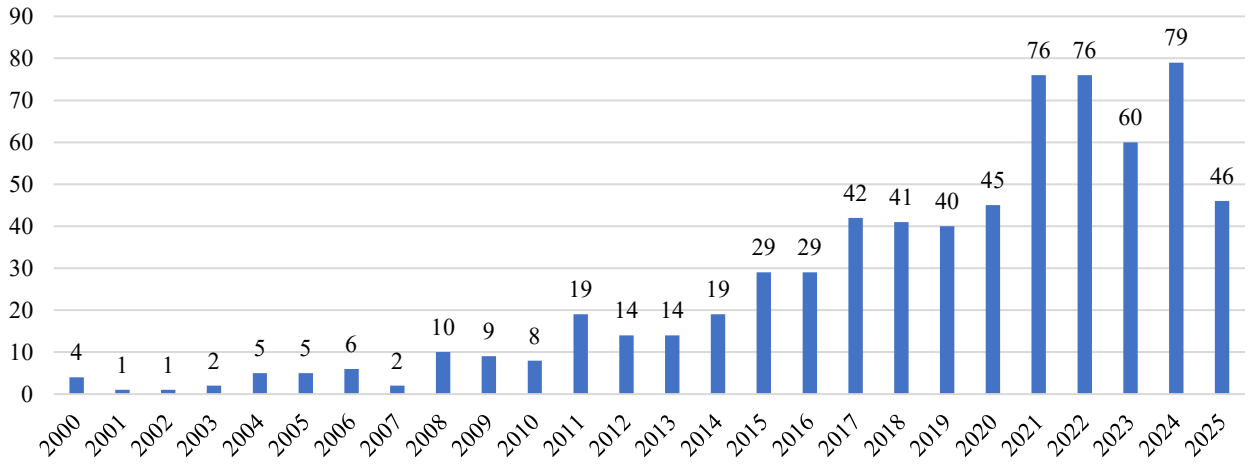
Source: Scopus (data analyzed using Biblioshiny)

The total number of documents are 695 include the time span from 1959 to 2025 from 345 sources, with an annual growth rate of 5.97% (Table 1). The most common publication type is articles from journals (459), followed by papers from conferences (135) and reviews (60). The average document tenure is 6.71 years, with 22.76 citations per document, showing a significant contribution in the field. The results present considerable collaboration, with 2,318 authors, a standard of 3.69 co-authors per item, and 27.48% international co-authorships. Only 72 documents are single-authored. There are 5,138 Keywords Plus and 2,165 Author Keywords, which reflect a wide range of future research themes.

Publications over the period

The year-by-year distribution of publications shows a consistent increase in research production connected to solar skill development and employment over the last two decades (Fig. 2). While early contributions (2000–2010) were few, with fewer than ten publications per year, the period from 2011 onwards saw a significant growth, owing to the growing global attention on renewable energy and climate resilience. A significant increase has been noticed after 2015, corresponding with the UN Sustainable Development Goals (SDGs) introduction and national commitments to the transition to renewable energy.

Figure 2. Yearly publications



Source: Scopus data analyzed through Excel

In both the years 2021 and 2022 number of publications are 76 papers, with 2023 producing 60 research articles and highest reported during 2024 as 79 number of publications reflect the field's rising academic and policy importance. The pattern indicates the focus of government and institutions on green jobs, especially in India and China (Rahman & Kar, 2023; Zhang et al., 2022). The period of COVID-19 pandemic recovery (2020-2022) might have also contributed to this increase as countries were searching for ecologically sustainable ways of economic recovery. During 2025 has reached only 46 publications so far, revealing a keen interest and probably ongoing and lively research in this field.

3. Analysis and interpretation

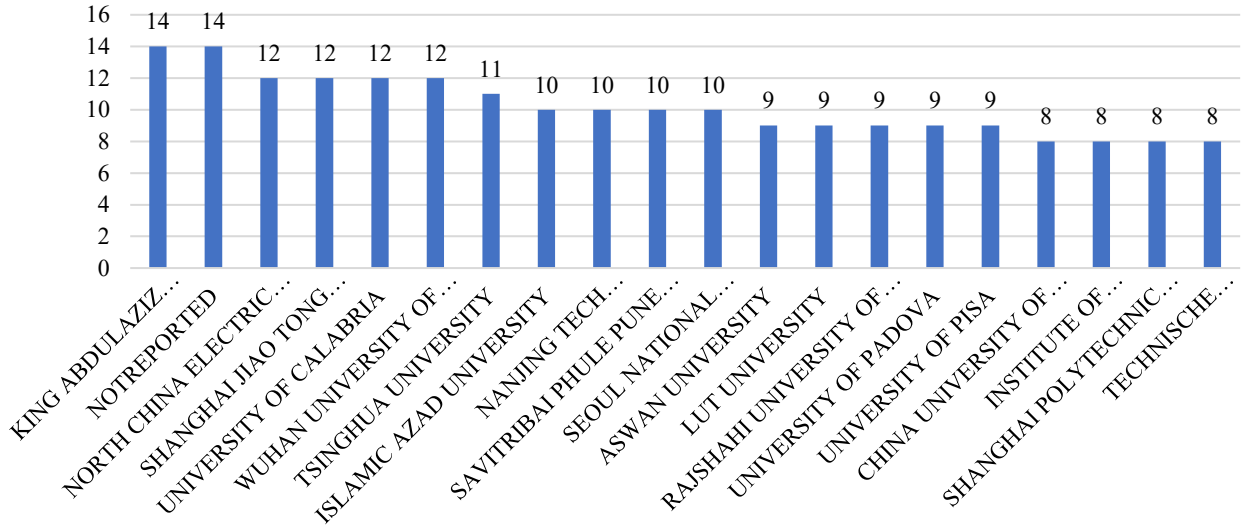
This section has been classified into three parts: performance analysis to determine publication patterns and key players in the publication area, thematic cluster mapping to discover main research domains, and TCCM analysis to explore the theoretical and methodological bases that lead this research field.

Performance Analysis

Performance analysis is the first step towards understanding the research environment on solar energy and employment by examining the importance of bibliometric elements such as publication patterns, most productive authors, main institutions, and active countries.

Institutes with good contribution

Figure 3. Top 20 institutes as per their contribution

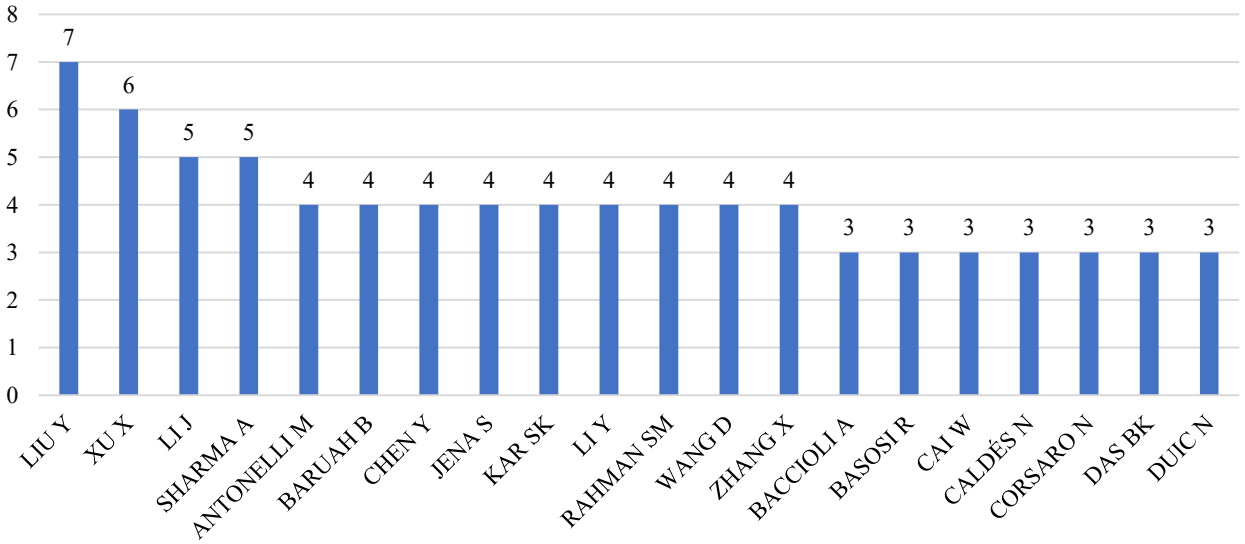


Source: Scopus data analyzed through Excel

King Abdulaziz University (KAU) has the largest group of students contributing to the work, with 14 publications (Fig. 3) attributing to its importance. This can be explained by Saudi Arabia's strong policy push towards renewable energy diversification, as one of the pillars of Vision 2030, which also includes large solar programs and academic funding for sustainability research (Alrashed et al. 2022). Next to KAU, North China Electric Power University, Shanghai Jiao Tong University, and the University of Calabria each contributed 12 publications. The significant production of Chinese universities is a reflection of China's global position in solar technology and green jobs (Zhao et al. 2022). Wuhan University of Technology and Tsinghua University are also at the forefront, which is in line with the targets of China's National Energy Administration. In addition to these, European universities like the University of Calabria, the University of Padova, and the University of Pisa are significantly contributing to sustainability transitions research. Savitribai Phule Pune University's Indian presence points towards a expanding domestic contribution. The extensive institutional involvement of institutions in Asia, Europe and the Middle East reveal a global academic interest in associating renewable energy with socio-economic impacts. Accordingly, further research might investigate how institutional seeking of academic production in the field of renewable energy may be influenced by institutional priorities, funding mechanisms, and national references policies.

Authors with good contribution

Figure 4. Top 20 authors with high contribution

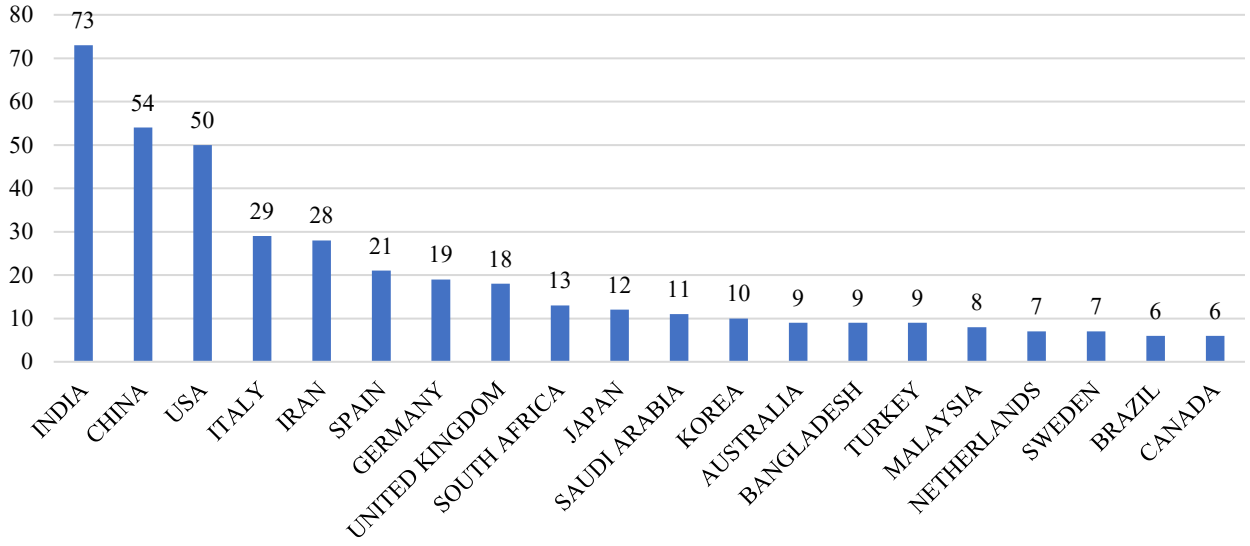


Source: Scopus data analyzed through Excel

According to (Fig. 4), analyzing the most highly productive authors in the field of solar energy skill development and employment, LIU Y has the highest number of publications (7), then XU X (6), and finally LI J & SHARMA A (5 each). A lot of top contributors such as LIU Y, LI J, and XU X are associated with Chinese institutions, which portrays China's strategic orientation and government, supported endeavours in renewable energy and green job creation (Zhang et al. 2022; Wang et al. 2021). Besides that, China's dominance might be a result of their policy, driven research incentives and large investment in solar technology R&D. SHARMA A, JENA S, and BARUAH B are Indian researchers who produce considerable work in this area. India is mainly driven by the government schemes such as the Suryamitra Skill Development Programme that intends to train a skilled workforce for the solar industry (Rahman & Kar, 2023). It is demonstrated that European authors such as ANTONELLI M, CALDS N, and DUIC N are frequently quoted, which signifies a large amount of EU funding for the green energy transition and sustainability-related research. Hence, the researcher's output style is consistent with the government's focus, the availability of financing, and the extent of institutional backing in countries that are strongly supporting solar power and job creation.

Countries with good contribution

Figure 5. Top 20 countries with highest contribution



Source: Scopus data analyzed through Excel

The top three countries in terms of article publications on solar skill development and employment generation are India, China and United States with number of 73, 54 and 50 publications respectively. India leads due to programs such as the SSDP, which was launched by the Ministry of New and Renewable Energy (MNRE) and aims at promoting solar industry and job creation through solar energy. China's large number is a reflection of its strategic policy decision for green energy transition and job creation through dedicated R&D and skill, building investment (Zhang et al. 2022). The U.S. participation is based on solid university, industry ties and the federal government funding of renewable energy research. Among European countries like Italy (29), Germany (19), and United Kingdom (18), getting inspired by the EU's Green Deal, implement financial frameworks like Horizon Europe to encourage their output. Saudi Arabia is a good example with 11 documents, a country that is perhaps growing more interested in this area to achieve their Vision 2030 plan where solar based economy is to replace the oil dependency (AlGhamdi & Fejzovic, 2021). Other developing countries like Bangladesh (9) and Malaysia (8) are also making good contribution by their efforts to ensure local energy access and the possibility to create jobs through small-scale solar installations.

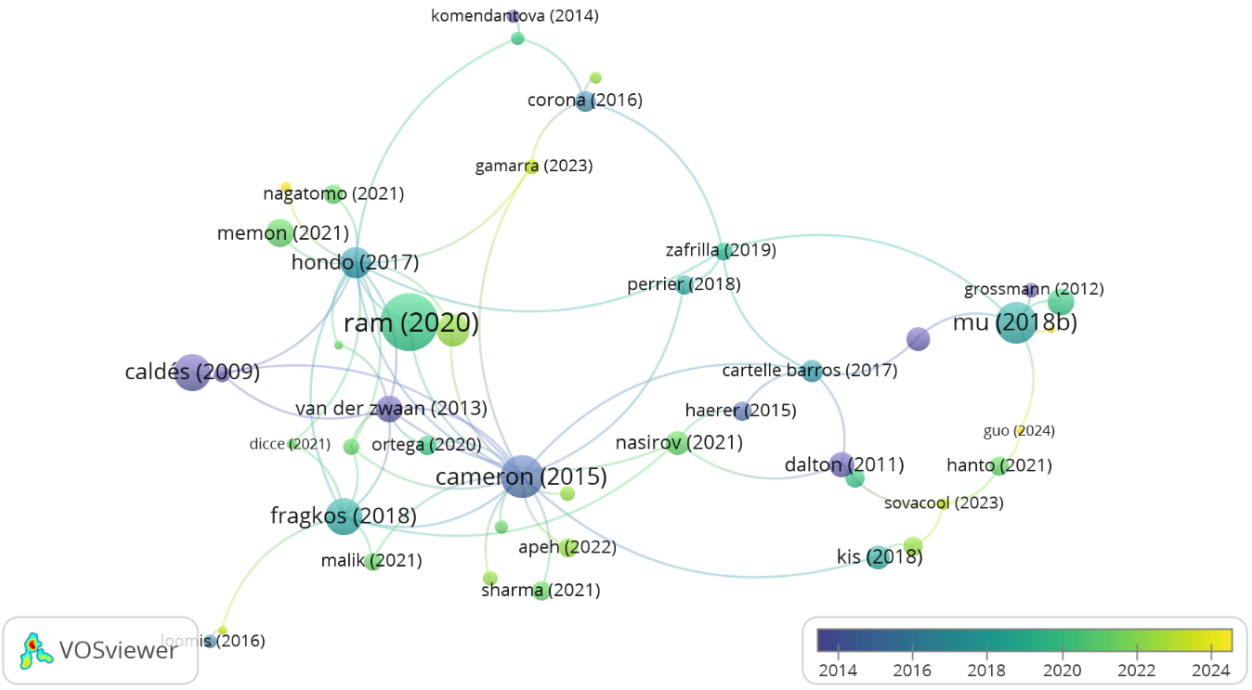
Cluster analysis

Cluster analysis is a commonly used method in bibliometric reviews to determine intellectual structures and research directions (Donthu et al., 2021).

Cluster analysis based on the authors' focus

The documents which had a minimum of five citations were included for cluster analysis in this research study. By applying this approach, 11 clusters were identified in total, and the top 5 clusters were selected for a detailed study based on their citation strength and connection (Fig. 6).

Figure 6. Authors' studies cluster analysis



Source: Scoups data analyzed through VOSviewer software

Cluster 1: Employment impacts of renewable energy deployment

Theme: Shaping equitable and sustainable labor markets in the renewable energy transition

This cluster is specifically focused on exploring how renewable energy systems could produce jobs in countries and their relative importance in job market opportunities. A few studies have presented direct impact on employment growth of renewable and non-renewable energy sources, where the positive results reported for creating more jobs per unit of energy produced (Cartelle Barros et al., 2019; Dalton & Lewis, 2011; Haerern & Pratson, 2013). The research supported by methods such as input-output modeling, national employment statistics, and employment component analysis to assess job impacts in different sectors and to perform cross-technology comparisons (Dalton & Lewis, 2011; Haerern & Pratson, 2013; Nasirov et al., 2015). Other research publications suggest that, apart from social and institutional features, such as energy governance, equitable distribution of jobs, and long, term planning, other factors also come into play (Heras & Martn, 2016; Wang et al., 2017). However, most studies focus on job number, frequently missing job stability, skill development, and the participation of disadvantaged labour groups. Future studies should be focused on long, term job quality, gender equity, and informal sector integration in renewable energy jobs, particularly in emerging economies with changing labour markets.

Cluster 2: Clean energy systems and employment transitions in the global south

Theme: Linking solar deployment to inclusive labor and development pathways in the Global South

This cluster investigates how renewable energy technologies, including solar and hybrid systems, affect socioeconomic and employment results in developing and emerging economies. Several studies seek to explore the role of solar power in national growth and job creation, particularly in Africa, Asia, and Latin America (Apeh et al., 2021; Bhamidipati & Hansen, 2022; Zhou et al., 2022). The methodologies used include literature reviews, techno-economic optimization, and spatial modeling to development-oriented field research and policy analysis (Cameron & van der Zwaan, 2015; Singh et al., 2020; Sharma & Banerjee, 2021). According to the findings, solar technologies can generate a wide range of job possibilities, boost regional development, and support local agencies, particularly when integrated with planning frameworks and education systems (Apeh et al., 2021; Sharma & Banerjee, 2021; Zhou et al., 2022). However, job outcomes are frequently inconsistent, with worries regarding informal labour exclusion, low-skilled job saturation, and insufficient institutional preparation in developing countries. Based on the scope available in previous studies, the future research can investigate how solar energy programs might help with labour formalization, capacity building, and long, term job security, particularly in underserved rural and peri-urban communities.

Cluster 3: Decarbonization pathways and green employment potential

Theme: Aligning green energy transitions with just and region-specific labor market outcomes

This cluster investigates how global decarbonization efforts, such as renewable energy and storage, influence job creation and structural employment change. Recently changes in employment related to decarbonization and green energy have been analysed in China, South Africa and the European Union by a number of researches (Guo, 2021; Hantoa et al. 2022; Sovacool, 2021). They are mainly using scenario modeling, energy-economy simulations and sustainability assessments, forecasting job creation in the areas of power production, heating and storage. Decarbonization, according to the results, can be a source of even more employment in the long-term, although it necessitates a proactive policy-making and targeted reskilling programs (Hantoa et al., 2022; Sovacool, 2021). A few studies have investigated employment and labor related effects of China's, South Africa's and European Union's decarbonization and sustainable energy plans. Also, some papers examined the work-related impacts of decarbonization and sustainable energy plans the China, South Africa and Europe. They base their projections of job growth in areas of power generation, heating, and storage on scenario modeling, energy, economy simulations, and sustainability assessments. Decarbonization can generate more jobs over the long time period, although for this to happen with a high probability, policy design has to be proactive and reskilling activities have to be focused (Hantoa et al., 2022; Sovacool, 2021).

Cluster 4: Sustainability and employment dimensions of concentrated solar power (CSP)

Theme: Balancing large-scale solar deployment with localized, inclusive labor planning

This cluster investigates the socioeconomic and environmental implications of CSP and fusion energy deployment, particularly in Europe, China, and North Africa. A common goal among researchers is to evaluate the sustainability and employment implications of large-scale solar infrastructure, particularly in cross-border energy value chains (Santacruz Banacloche et al., 2021; Gamarra et al., 2020; Hahn Menacho et al., 2021). Researchers employ multi-regional input-output analysis, triple bottom line evaluation, and global value chain analysis to investigate job creation, emissions reduction, and distributional equity (Corona et al., 2015; Komendantova & Patt, 2018). The findings indicate that CSP and fusion power have the potential to offer major employment and environmental advantages, but the effects will vary depending on the methods by which technology is transferred, the governance, and the capacities of the regions (Gamarra et al. 2020; Komendantova & Patt, 2018). Most of the papers dealt with the matter on a macro level and so did not consider local labor integration, skill alignment, and long, term employability. These issues were left mostly unaccounted for. Upcoming research should focus on how CSP and fusion initiatives can lead to labor outcomes that are socially inclusive, particularly when these technologies are being transferred to less industrialized countries.

Cluster 5: Regional labor shifts and economic outcomes of solar energy policies

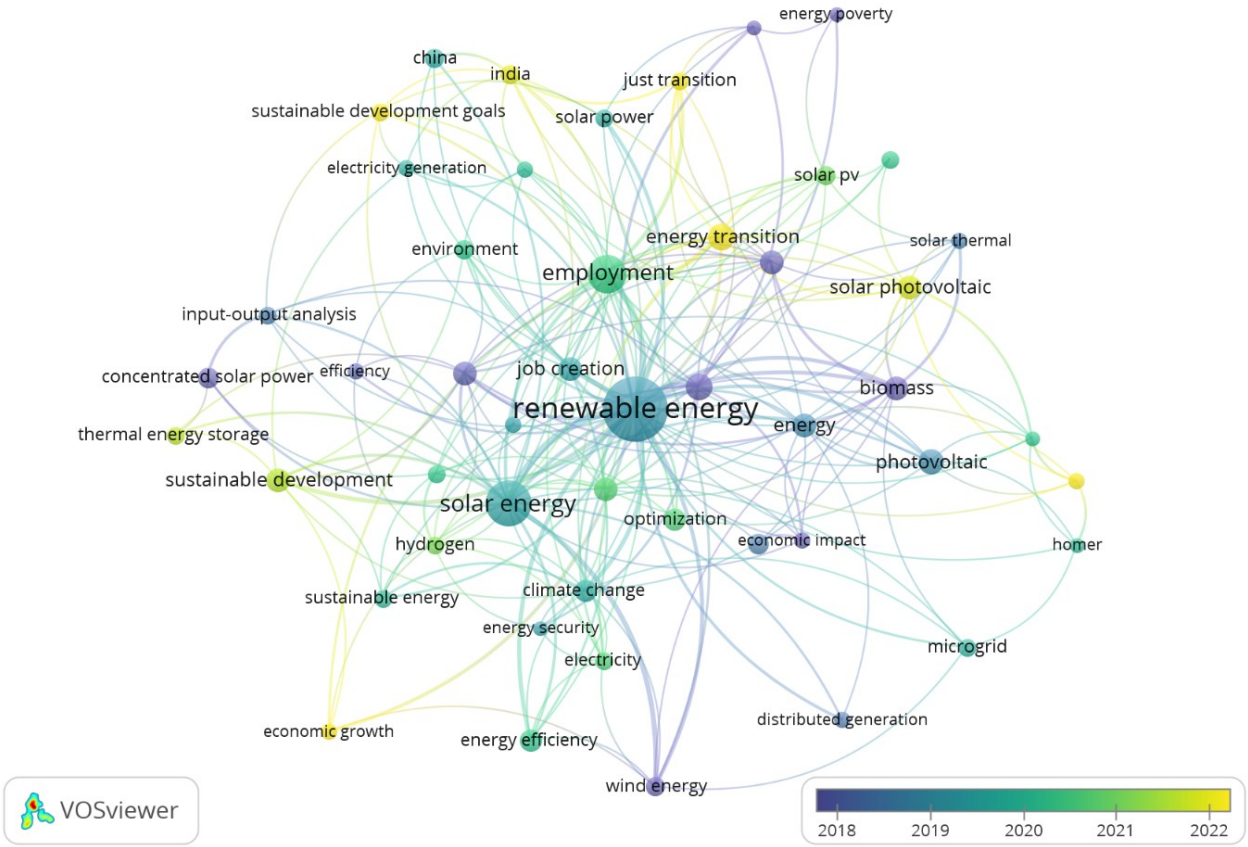
Theme: Advancing inclusive labor transitions and equitable economic benefits through solar energy policies

This research area evaluates the direct and indirect impacts of solar energy development and other related policies on job creation and economic growth at the local level. Some researchers have investigated the jobs generating potential and the changes in the economic structure following solar and climate policy measures (Becerra, Fernandez et al. 2021; Fragkos & Paroussos, 2018; Loomis et al. 2016). Other authors have analyzed the labor market transformations, especially in terms of workers' skills upgrading and their adaptability, in case of new solar economies (Dicce & Ewers, 2020; Malik et al. 2021). The authors have relied on techniques like input, output modeling, macroeconomic scenario analysis, and regional economic impact studies for estimating the number of jobs created, the effects on wages, and changes in different sectors (Fragkos & Paroussos, 2018; Loomis et al. 2016; Malik et al. 2021). Nevertheless, these papers mostly deal with figures and hardly ever mention aspects like the quality of jobs, the dynamics of the informal sector, and social equality. The subsequent research can focus on the aspects of solar energy transitions that may support reskilling, decent working conditions, and the integration of marginalized labor groups, especially in new or policy, fragile regions.

Cluster analysis based on the keywords

A keyword co, co-occurrence analysis of 49 terms revealed seven distinct clusters that represent major themes in the literature on renewable energy and employment (Fig. 7). From these 7 clusters, five of the most important ones have been discussed in detail:

Figure 7. Keywords cluster analysis



Source: Scoups data analyzed through VOSviewer software

Cluster 1 (climate change, energy policy, energy storage, and sustainability) studies the connection between renewables and global climate targets, highlighting implementation of policy frameworks to enhance energy security and resilience (IRENA, 2022; Sgouridis et al., 2021). Future directions must be toward understanding how integrated national policy can encourage decentralized storage and enhance grid reliability. Cluster 2 (China and India, green jobs, solar power, and sustainable development) explores the changes happening in Asian regions by connecting the rise of solar power to jobs, sustainable development aspect, and environmental benefits (Bhattacharya et al., 2020; Liu et al., 2021). Future research may look at the importance of institutions and the systems for vocational training in the under developed countries. Cluster 3 (biomass microgrid photovoltaic, and techno-economic analysis) are concerned with the technological side through the creation of hybrid and standalone system optimization efforts (Akorede et al. 2021). More research is needed to figure out issues related to real system performance and changes in user behavior. Cluster 4 (distributed generation, job creation, optimization, and economic impact) emphasize the labor effects and economic feasibility of renewable energy implementation. Future work is expected to focus at skill requirements changing scenarios as well as employment shifts. Cluster 5 (employment, energy poverty, energy transition, South Africa) targets issues such as social inclusion, energy availability, and the way to a fair clean energy transition (Newell & Mulvaney, 2018).

Theory, context, characteristics, and methodology (TCCM) analysis

The TCCM Framework categorizes reviewed literature based on Theory, Context, Characteristics, and Methodology, providing insights into intellectual structure and research gaps in the topic.

Theory

The article is based on eight main theories that it uses to explain the contribution of solar skill development towards technology acceptance, inclusive development, and workforce modernization. Diffusion of Innovation, Sustainable Livelihood Framework, and Human Capital (Kuzmin et al., 2023; Barak et al., 2023; Lyu et al., 2024).

Context

The main purpose of the research is to focus on the developing and underdeveloped countries including India, China, and Bangladesh where solar projects like Suryamitra have been developed and implemented for employment generation and

energy supply (Fathima et al., 2024; Sharma & Sengar, 2024). Besides dissecting urban and rural settings, the paper also delves into talent distribution and policy impact at the regional level.

Table 2. TCCM framework

Theory (T)	Context (C)	Characteristics (C)	Methodology (M)
Human Capital Theory (Kuzmin et al., 2023; Barak et al., 2023) Diffusion of Innovation Theory (Lyu et al., 2024; Das et al., 2022) Sustainable Livelihoods Framework (Barak et al., 2023; Seminario-Córdova & Rojas-Ortega, 2023) TOE Framework (Fathima et al., 2024; Sharma & Sengar, 2024) Environmental Justice Theory (Seminario-Córdova & Rojas-Ortega, 2023; Fathima et al., 2024) Social Cognitive Theory (Barak et al., 2023; Das et al., 2022) Dynamic Capabilities Theory (Sharma & Sengar, 2024; Moreno et al., 2022) Sustainable Transitions Theory (Lyu et al., 2024; Seminario-Córdova & Rojas-Ortega, 2023)	National programs exist in India, China, the European Union, and rising economies such as Nigeria and Bangladesh. Solar market segments include business, rural, and residential. Rural and urban neighborhood; low and middle, income areas. Vocational and professional training centres. Peer-group training environments in the BRICS countries. Government-led solar training initiatives. National solar policy (the EU Green Deal and India's Suryamitra).	Training efficiency, employment rates, and skill income increases. Adoption rates, influence from peers, and technical acceptance. Livelihood support, gender equality, and local implementation. Institutional readiness, infrastructure, and external environment. Allocation of training benefits and inclusion metrics. Self-efficacy, observational learning, and motivation. Adaptability, capacity building, and institutional learning. Governance structures, stakeholder involvement, and market transformations.	Bibliographic mapping, together with surveys, and regression-based field analysis. Co-keyword cluster analysis using Biblioshiny; network visualizations. Thematic mapping and qualitative case studies. Survey-based ratings and theme bibliometric clustering. Policy text analysis and bibliometric trend mapping. Bibliometric network analysis and program intervention case evaluations.

Source: Author's own compilation

Characteristics

Besides training programs and job creation efforts, the research also identifies income growth and skill enhancement as the main elements. The study focuses on the technology adoption side, ensuring that there is equity in access and also that the necessary steps are taken for institutional preparedness (Seminario, Cordova & Rojas Ortega 2023; Das et al. 2022).

Methodology

A mixed-approach has been carried out and Bibliometric application like Biblioshiny and VOSviewer software were used to analysis trends and cluster mapping. In previous studies quantitative techniques such as surveys and regression models were also adopted for delivering deep skills, employment relationship insights (Lyu et al. 2024; Moreno et al. 2022).

4. Conclusion

The objective of this study is to perform a thorough bibliometric and thematic analysis of global research on incorporating solar training for skills development and employment generation. Analyzing 695 publications that are most relevant to the field and indexed on Scopus over the tenure of more than 20 years, the study revealed a growing scholarly interest in vocational education, solar workforce competence, and policy instruments in different parts of the world. The study results show that the top three contributors are India, China, and the USA. Besides, leading authors and institutions were identified, followed by an exploration of collaborative patterns. Based on the cluster-based thematic mapping, the study identified four main research themes: solar plant adoption, training effectiveness, economic factors, and institutional and policy support. This work addressed major questions particularly focus on significant contributors and being the primary focus of the academic community. The findings suggest how solar energy projects, along with targeted skill development and employment generation programs, could significantly alter the socio-economic landscape, especially in developing

countries. The study highlights some unexplored areas that are worth further research such as women empowerment through solar energy, the assessment of employment benefits, and the cross-country efficiency of solar programs.

Most of the bibliometric data collected from Scopus database, however other major indexing platforms such as Web of Science, IEEE Xplore, and national databases, which might also include relevant information are not the part of current study. Besides, this has possibly led to missing significant regional or in-depth studies such as NGO reports, government training program evaluations, etc. which usually provide rich qualitative insights into the results of skill development. The analysis was limited to English-language publications, thus excluding papers published in regional languages, especially of countries with strong solar programs such as China, Germany, and Brazil. Although Biblioshiny and VOSviewer are marvelous tools for visualization and theme mapping, they can still be vulnerable to interpretative bias, particularly when term co, occurrence clustering is involved. Given the fact that the renewable energy sector is constantly evolving, fresh data may get outdated rather quickly as new projects and policy measures are rolled out. To end with, the paper presents an overarching/generic perspective and therefore does not have micro, level case studies or interviews which could be used for further developing the results and practical implications.

The results of this research point to major changes in the policy realm for government officials, solar businesses as well as academic stakeholders. In case of government organizations, the results emphasize that development of solar skills should be part of national employment and climate action programs. Graduated training programs with a solid structure, like Suryamitra in India and technicians' certification in Brazil, lead to employment results that are favorable and thus should be imitated and increased through public, private partnerships. Besides, governments will be in a position to spur innovation in skill, building efforts and develop national solar training certification frameworks that are in line with local industries while meeting the global standards if they decide to fund lead skill, building activities. Solar businesses can make use of this knowledge by taking the workers' development as a serious matter so as to offer better services and be the first to take up the latest technology. Initiatives by entrepreneurs to establish their own training institutes and partnership of associations with technical institutions will be the two avenues of filling the skill gaps and increasing local employability at the same time. Besides formalizing vocational training pathways, tailor, made modules especially for women, young people, disabled or first, time workers can also be available to remove access barriers and foster inclusive growth. This study identifies gender composition in solar jobs, examination of the long, term effects of training programs, and the international comparison of workforce development strategies as some of the areas that are of interest to researchers and educators. By aligning solar job training with SDGs 7 and 8, different groups can build stronger, fairer and environmentally friendly economies to achieve sustainable development both economically and environmentally over a long period of time.

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