Syntheses Knowledge of Targeted Poverty Alleviation in 2012–2021 of China: A Bibliometric Analysis

Changyu Fu and Yaqiao Zhao[✉]

College of Economic and Management, Yunnan Agricultural University, Kunming, China
1564933298@qq.com

Abstract. China has lifted 93.48 million people out of poverty, and 2020 is the last year of poverty alleviation, eliminating absolute poverty. China has made significant achievements in poverty reduction. According to the World Bank, 689 million people live on less than $1.90 a day. At a high poverty line, 24.1% of the world's people lived on less than $3.20 a day in 2017, and 43.6% lived on less than $5.50 a day. Therefore, the purpose of this study is to comprehensively understand the articles of existing Chinese scholars in the field of poverty alleviation during the 12th Five Year Plan period by using bibliometric techniques. The research results indicate the research progress in this field. Determine the basic article. The theme of prosperity was revealed. Sustainable development and multidimensional poverty are the themes of automobile sports.

Keywords: formatting · style · styling · insert

1 Introduction

93.48 million people have been lifted out of poverty by the policy of Target poverty alleviation science 2013 [1]. By 2020, which was the last year of target poverty alleviation, Per capita disposable income of farmers was almost doubled [1], and the absolute poverty is successfully eliminated. The effort of target poverty alleviation realized a major achievements in poverty reduction in human society, and made a remarkable contribution to the global poverty reduction. However, The World Bank reported that 689 million people earned less than US $1.90 a day in 2017. In addition, by 2030, climate change will plunge 6.8–132 billion people into poverty. With the COVID-19 pandemic, extreme poverty is expected to rise for the first time in more than 20 years in 2020 [2]. The poverty issue is still challenging us. The experience of China would be a great help for poverty reduction in other countries. The purpose of this study is to synthesize the current scholarly publications to identify influential articles, research topics and what these researches achieved, and discuss sports topics for future research. The purposes of this study are:

- What were the statistical facts of research development?
- What were the most contributed publications?
- What were the major research topics?
- What are the future motor themes?

2   Methods and Data

2.1   Publications Retrieval

The purpose of this study was to analyze high quality peer viewed scholarly publications to ensure a robust result. And, each publication should has a complete bibliographical data. The scientific network database is a famous scientific publication index, which widely includes peer-reviewed publications. Each article has complete bibliographic data, including title, author, journal, abstract, key words (key words plus sign) and citations. Search the entire database with the target poverty alleviation as the key word, and the time span is from 2012 to 2021. The targeted poverty alleviation policy was implemented in 2013, and 2020 is the last year of the targeted poverty alleviation policy. Add one year to ensure the availability of relevant publications. Its affiliated address was limited to China. The publish type was set to post. Initially, 192 documents were obtained. Manual recheck was conducted remove proceeding publications, book chapter etc. Finally, 104 publications were valid for analysis.

Through the basic statistics research, the general trend of the research was revealed. The Co-citation analysis was used to explore the basic literature. Co-occurrence analysis was also used to represent the conceptual structure and research theme, which answers the third and fourth questions of this study. The purpose of data cleaning was to make the data conform to the requirements of library measurement toolkit. This research is designed to follow workflow:

- Research design
- Data collection;
- Data analysis
- Data visualization;
- Interpretation

2.2   Data Analysis

General research data was obtained through basic statistical data. Factorial Analysis was used to reveal word map and most contributing publications. Thematic map represented the research topics.

3   Results

3.1   General Inforamtion of Corpus

Figure 1 shows the yearly number of publications from 2013–2021. The number of publications is steadily increasing, and reached the peak in 2020, in which all absolute poverty was eliminated in China. Additionally, Table 1 outlines the journal performance, the most productive journal was Sustainability, which had 10 publications and H-index was 3. Land use policy was the most influential journal, ranks the first in H-index, G-index and total citation. Table 2 and Table 3 give a brief information of most performance authors and affiliations.
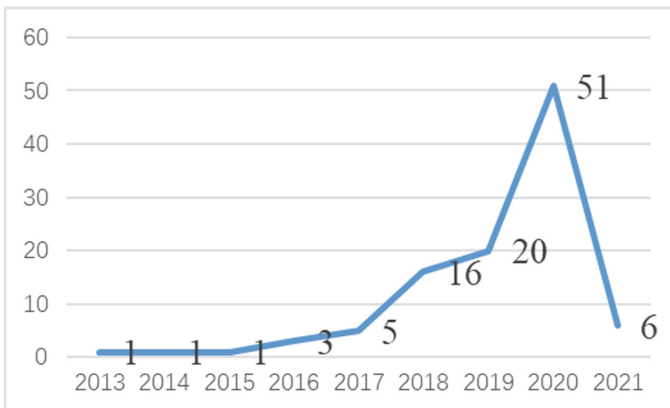

Fig. 1.   Yearly number of publications

Table 1.   10 productive journals

Journals	h_index	g_index	Total Citations	Total Articles
Land Use Policy	4	6	92	6
Sustainability	3	5	28	10
Habitat International	3	4	36	4
Chinese Geographical Science	2	2	7	3
Energy Policy	2	3	33	3
Ecological Indicators	2	2	7	2
Journal of Geographical Sciences	2	2	13	2
Plos One	1	3	9	4
IEEE Access	1	1	1	3
Children and Youth Services Review	1	1	2	2

Table 2. 10 most influential authors

Author	h_index	Total Citations	Total Articles
LI Y	4	109	9
LIU Y	4	199	8
ZHOU Y	4	167	7
LI J	3	40	6
LIU J	3	98	6
WANG J	2	18	6
YANG Y	1	4	5
LI C	2	17	4
SHUAI C	2	10	4
ZHANG H	3	43	4

Table 3. 10 Most productive institutions

Affiliations	Articles
Inst Geog Sci and Nat Resources Res	28
Chinese Acad Sci	22
Nanjing Univ Informat Sci And Technol	16
Beijing Normal Univ	14
Xi An Jiao Tong Univ	
Univ Chinese Acad Sci	11
China Univ Geosci	10
Hong Kong Univ Sci And Technol	10
Sichuan Univ	9
Capital Normal Univ	8

3.2   Most Contributing Publications

The keywords-plus explored topic clustering and corresponding publications with the greatest contribution through factorial analysis. The Fig. 2 revealed the keywords-plus clusters. The dominant cluster was colored with red. It focuses on welfare framework, income, policy, inequality, livelihood, climate change, etc. The Fig. 3 and Table 4 showed the most contributing publications for clusters. Cluster colored with blue doesn't have any notable publications. Yuewen Jiang designed a multi-level index to explore the poverty influencing factors of rural households, and the results showed that 77.14% of the poverty is caused by family level factors. The most critical ecosystem could help achieve a better target poverty alleviation [3]. Brian E. Robinson et al. developed a method to estimating

the value of ecosystem services in terms of their contribution to household livelihoods in rural areas. Their research demonstrated how farmers livelihoods depend on ecosystem services [3]. Jianxin Li et al. explored the contribution of solar photovoltaic in poverty alleviation and development, the results show that the role of solar photovoltaic in poverty alleviation is small [4]. Yansui Liu et al. Examined the spatial pattern and its driving mechanism of China's rural poor population. The results showed that the poor population in China has obvious spatial agglomeration characteristics [5]. Poverty often occurs in mountainous areas, border areas and ethnic minority areas in central and western China. Disease, poor geographical conditions and fragile ecological environment are the main driving factors of poverty. Yang Zhou discussed the land policy innovation in the field of targeted poverty alleviation in China, and suggested that land policy innovation not only contribute to poverty reduction, but also bring risks which should be well protected [6]. Huiming Zhang et al. studied three financial support modes for photovoltaic energy project in target poverty alleviation, namely, government fully funded, government funded with loans, government funded with enterprise investment. Their findings suggested that government funded with enterprise investment is the most effective mode in term of earnings [7]. Cong Li et al. evaluated the impact of China's poverty alleviation, resettlement and resettlement program on human welfare and ecosystem. Their findings show that households in relocation and settlement program are more likely fall into the mode of "high happiness and high dependence" indicates that appropriate actions should be taken to help these families, especially sustainable livelihoods [1]. Wei Liu et al. studied the household vulnerability in Poverty Alleviation Resettlement by taking Ankang prefecture of Shanxi province as example. Their findings show that resettlement program positively influence on vulnerability, and relocation region, time and subsidy negatively influence vulnerability [4]. Huiming Zhang et al. reviewed 36 policies related to using photovoltaic power in targeted poverty alleviation, and the results suggested that there should be an increase in using economic policy; re-review the identification policies for low-income families; polices instrument should be used to reinforce technical support and maintain photovoltaic project; Improve performance appraisal policy and dynamic management policy [8]. Yuewen Jiang et al.identified the multi-level poverty influencing factors of peasant households. The results showed that 77.14% of the poverty is due to family level factors.

3.3   Thematic Map

Thematic map was used to identify existing themes and discuss the motor themes for future research. In Fig. 4, the research topics were distributed according to their centrality and density, recorded as x axis and y axis respectively, and divided into four quadrants. The interaction degree of the theme cluster, and density measures the internal connection strength of the theme clusters. The topics of the first quadrant were motor theme, which are important and developed well, but should not be considered as a direction of future research. The topics in second quadrant were developed well but not important, and should not be considered as future direction either. The theme in the third quadrant were weak themes, either appearing or disappearing. The fourth quadrant is the themes which are important but not developed well, so should be considered as future research directions.
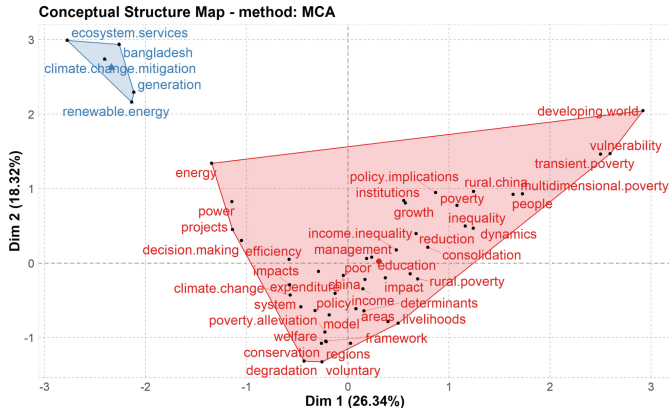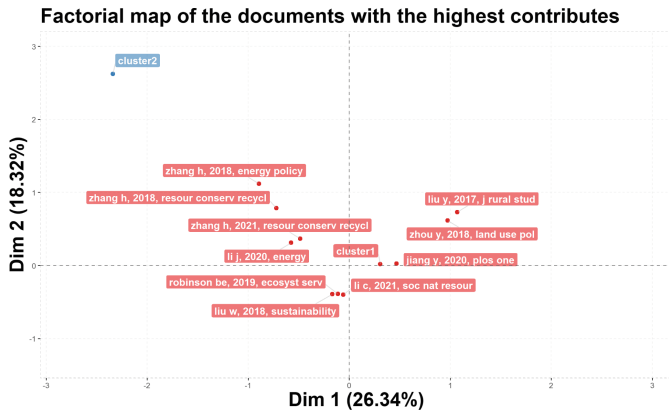
Fig. 2. Conceptual structure map

Fig. 3. Most contributing publications for clusters

Table 4. Top 10 most contributed papers

No.	Author	Title	Year
1	Zhang H; Xu Z; Sun C; Elahi E	Targeted Poverty Alleviation Using Photovoltaic Power: Review of Chinese Policies	2018
2	Li J; Wang Z; Cheng X; Shuai J; Shuai C; Liu J	Has Solar Pv Achieved The National Poverty Alleviation Goals? Empirical Evidence From The Performances Of 52 Villages In Rural China	2020

(*continued*)

Table 4. (*continued*)

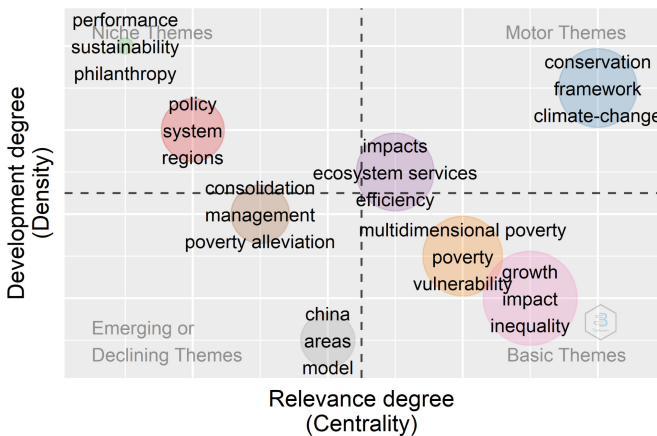| No.	Author	Title	Year
3	Zhang H; Xu Z; Zhou Y; Zhang R; Cao J	Optimal Subsidy Reduction Strategies For Photovoltaic Poverty Alleviation In China: A Cost-Benefit Analysis	2021
4	Zhang H; Xu Z; Zhou D; Qiu Y;Shen D	Targeted Poverty Alleviation Using Photovoltaic Power In China: Identifying Financial Options Through A Dynamic Game Analysis	2018
5	Robinson Be; Zheng H; Peng W	Disaggregating Livelihood Dependence on Ecosystem Services To Inform Land Management	2019
6	Liu W; Xu J; Li J	The Influence of Poverty Alleviation Resettlement On Rural Household Livelihood Vulnerability In The Western Mountainous Areas, China	2018
7	Liu Y; Liu J; Zhou Y	Spatio-Temporal Patterns of Rural Poverty In China And Targeted Poverty Alleviation Strategies	2017
8	Zhou Y; Guo Y; Liu Y; Wu W; Li Y	Targeted Poverty Alleviation and Land Policy Innovation: Some Practice And Policy Implications From China	2018
9	Jiang Y; Huang C; Yin D; Liang C; Wang Y	Constructing Hlm to Examine Multi-Level Poverty-Contributing Factors Of Farmer Households: Why And How?	2020
10	Li C; Guo M; Li S; Feldman M	The Impact of The Anti-Poverty Relocation And Settlement Program On Rural Households' Well-Being And Ecosystem Dependence: Evidence From Western China	2021

Fig. 4. Thematic map

4 Discussion and Conclusions

This study had made a comprehensive understanding of the development of poverty alleviation research in China during the 13th Five Year Plan period, and analyzed the corpus retrieved from the core collection of SciDev. Net using statistical and bibliometric methods. The research results indicated the research progress in this field. The fundamental articles were determined. The themes of prosperity were revealed. Sustainable development and multi-dimensional poverty are the motor themes.

China had already realized a great goal of eliminating poverty by the end 2020, and made great contribution to global poverty reduction. China also have got much valuable experience in poverty reduction, which could helpful for other countries in poverty reduction.

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