

Study on the Tendency of Industrial Research in Ethnic Minority Regions of China over the Past 30 Years Based on Bibliometric Analysis

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Abstract—This paper retrieves "ethnic minority" and "industry" in the Chinese journals of China Academic Journal Network Publishing Databases to conduct bibliometric analysis from multiple dimensions such as research progress, journals distribution, research field, research institution, high frequency words and research level. Research shows that the industrial research in ethnic minority regions of China dates back to 1990s and enjoys a rapid development to form a series of journals over the past 30 years, but stable core-author group has yet to be formed and institutions of higher learning and research institutions in Beijing and southwest and northwest minorities areas take the main task to conduct corresponding research, thus presenting diversified tendency for the industrial research in ethnic minority regions of China.

Keywords—ethnic minority industry; research trend; China

I. INTRODUCTION

Due to historical, geographical and economic reasons, most ethnic minority regions of China are economically underdeveloped. Thus, to explore the specialty industries in these areas is to explore economic development of ethnic minority regions. Although we have made fruitful achievements in related researches, the basic theory about industrial research in ethnic minority regions of China is still under discussion, especially lack of the objective researches and explanation from the aspect of literature and big date. In order to have a comprehensive and objective understanding on the present situation and tendency of industrial development research in ethnic minority regions of China, this paper studies this field from multiple dimensions based on bibliometric analysis to provide reference for health industrial development of ethnic minority regions of China.

II. DATA SOURCES AND PROCESSING

293 related papers about industries of ethnic minorities are obtained by retrieving papers with "ethnic minority" and "industry" as the key words between 1986 and 2016 and getting rid of unstandardized papers such as conference papers and newspaper in Chinese journals of China Academic Journal Network Publishing Databases. This paper carries out statistical analysis on the number of papers, years to publish papers, source publication and research subject and institutions

of industrial research in ethnic minority regions of China by adopting bibliometrics method and studies its characteristics and tendency over the past 30 years.

III. ANALYSIS ON RESEARCH TENDENCY

A. Time dimension

From the analysis of retrieval results, there were related papers in 1986. In the following years, the number of papers remained low, basically with 1 to 2 papers per year. With regard to research contents, related researches on the importance of poverty relief through developing industries in ethnic minority regions of China had paid much attention to in 1990s, but the industrial development of ethnic minority regions has yet to be considered as an independent research form. Entering 21st century, the numbers of related papers began to increase fast with annual increase rate of 11.4% on average, among which the number of papers published in the last 10 years of 2006-2016 has increased rapidly with 244 papers in total, accounting for 83.3% of total number. This indicates that the industrial development of ethnic minority regions of China gains increased influence, drawing more and more attention from educational circle and becoming one of hot issues in the study of ethnic minority regions of China. (As shown in Fig. 1)

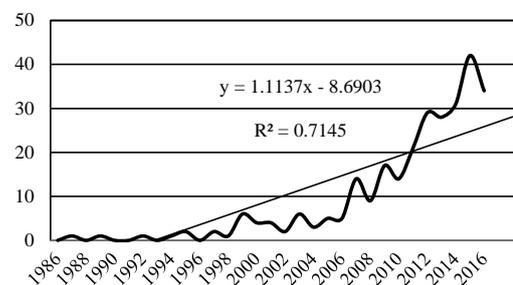


Fig. 1. Industry research development of ethnic minority regions of China

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B. Journals source and disciplines distribution

The top 10 Chinese core journals that are related with industrial research of ethnic minority regions are Guizhou Ethnic Studies, Journal of Yunan Minzu University (Social Sciences), Heilongjiang National Series, Forward Position, Manager' Journal, Journal of South-Central University for Nationalities (Humanities and Social Sciences), Journal of Lanzhou Jiaotong University, Journal of Anhui Agricultural Sciences, Ethnic Art Studies and Journal of Kaili University respectively [1-9]. There are 59 papers published in these 10 journals, accounting for 71.1% of total volume. Thus, these 10 journals are the core ones for industrial research of ethnic minority regions (as shown in Table 1). Besides the above 10 core journals, there are multiple journals with relatively small number papers published and there are over 100 journals with only 1 to 2 papers published.

TABLE I. TOP 10 JOURNALS OF INDUSTRIAL RESEARCH ON ETHNIC MINORITY REGIONS OF CHINA

Name of Journals	Number of Papers	Proportion
Guizhou Ethnic Studies	24	28.92
Journal of Yunan Minzu University	7	8.43
Heilongjiang National Series	5	6.02
Forward Position	4	4.82
Manager' Journal	4	4.82
Journal of South-Central University for Nationalities	3	3.61
Journal of Lanzhou Jiaotong University,	3	3.61
Journal of Anhui Agricultural Sciences	3	3.61
Ethnic Art Studies	3	3.61
Journal of Kaili University	3	3.61

It shows from the analysis on these journals that industrial research in ethnic minority regions of China involves in a wide range of disciplines mainly including literature, tourism, agriculture, economics, finance and many other cross-disciplines, which is of great significance to the theory improvement of industrial research of ethnic minority regions and practical guidance. (Fig. 2)

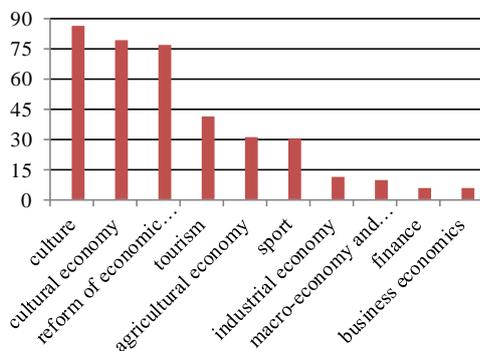


Fig. 2. Main disciplines fields of ethnic minority industrial research

C. Authors and organization distribution

In 293 papers, the top 3 authors who publish the most papers about industrial research of ethnic minority regions are Zhang Pu (7 articles), Zhang Xi'en (3 articles) and Zhang Kerang (3 articles)[10-12]. According to Price theory, authors who publish 2 papers are core authors. Through statistical analysis, there are 53 papers in total published by the authors who published 2 related articles, only accounting for 18.1% in 293 papers. This indicates that relatively stable core author group has yet to be formed in industrial research of ethnic minority regions of China.

In addition, the top 15 research institutions involving in this research field are as shown in Table 2, which obviously shows that institutions of higher learning are the most important institutions to study industries in ethnic minority regions. The distribution of these institutions have the following features: on the one hand, domestic first-rate research institutions on ethnic minority issues such as Minzu University of China have broad academic vision and face the whole nation to conduct their researches. On the other hand, most research institutions are located in densely-populated ethnic minority regions. Relying on their own geographical advantage, these institutions conduct industrial development of local ethnic minorities to gradually form research field with local characteristics. Inner Mongolia University of Science & Technology, Northwest Normal University, and Lanzhou Jiaotong University in northwest China study the industries of Mongol nationality, Tibetan nationality and Xinjiang. Yunnan Normal University, Sichuan University, Southwest Minzu University, Kunming University of Science and Technology, Guizhou University of Finance and Economics and Guilin University of Technology in southwest China study specialty industries of ethnic minorities such as culture, sport, tourism, etc. Jilin University and Dalian Minzu University in northeast and Wuhan University, Hubei University for Nationalities and South-Central University for Nationalities in central and south areas of China also base on local ethnic minorities to form corresponding characteristic industrial research.

TABLE II. MAIN RESEARCH INSTITUTIONS FOR INDUSTRIAL RESEARCH OF ETHNIC MINORITY REGIONS OF CHINA

Serial No.	Research institutions	Number of Papers
1	Minzu University of China	11
2	Inner Mongolia University of Science & Technology	10
3	South-Central University for Nationalities	9
4	Northwest Normal University	6
5	Southwest Minzu University	6
6	Lanzhou Jiaotong University	6
7	Yunnan Normal University	6
8	Hubei University for Nationalities	5
9	Guilin University of Technology	5
10	Dalian Minzu University	5
11	Jilin University	4
12	Wuhan University	4
13	Sichuan University	4
14	Kunming University of Science and Technology	4
15	Guizhou University of Finance and Economics	3

IV. ANALYSIS ON RESEARCH HOTSPOTS

Through bibliometric analysis, high frequency keywords which appear more than 5 times in 293 involved papers are as follows: ethnic minority, cultural industry, ethnic minority regions, regions inhabited by ethnic groups, tourist industry, industrial structure, suggestions, ethnic culture, specialty industry, development, industrial development, Guizhou, status quo, ethnic culture industry, industrialization, industries, economic development, innovation, problems, culture, industrial technology, Yunnan, ethnic minorities culture, etc. These key words are the focus of attention paid by national academic community on industrial research of ethnic minority regions over the past 30 years. (Fig. 3)

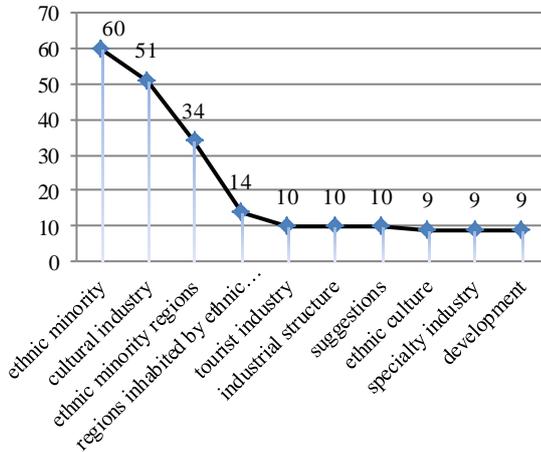


Fig. 3. Analysis on high frequency words of industrial research of ethnic minority regions of China

V. RESEARCH LEVEL AND METHODS

Over the past 30 years' industrial research of ethnic minority regions, there are 200 papers involving in basic social science research, accounting for 70.1% in all papers followed by guidance for social science industries (51 papers) and policy study (20 papers), which indicates that academic community pays more attention to basic analysis in this field. Generally speaking, multiple research achievements are generalization and summarization of practical experience on industrial development of ethnic minority regions (Fig. 4).

Research method generally can be divided into normative research and empirical research. In 293 papers conducted with bibliometric analysis, the papers adopting empirical research account for the largest proportion and place particular emphasis on such research method by combining with local ethnic minority regions on the whole, which shows that the vision of industrial research on ethnic minority regions of China remains to be widened and it is urgent to break through research field. A great number of researches also focus on the explanation of solutions. Statistics and bibliometric analysis tools, to a certain extent, are applied in this research field but have yet to be improved.



Fig. 4. Industrial research levels of ethnic minority regions of China

VI. CONCLUSION AND ENLIGHTENMENT

Since 1990s, the number of papers on industrial research in ethnic minority regions continues to grow before experiencing fluctuation and grows rapidly in recent years. In journals distribution, diversified journals involving in chemistry, tourism, agriculture, economics and finance shows that the industrial development in ethnic minority regions of China has become the focus of multidiscipline but has yet to form relatively mature core-author group. Due to vigorous support from government on industrial development of ethnic minority regions, the industrial researches conducted by domestic community continue to be profound and diversified in its research subjects. With respect to the areas, most researches are conducted by scholars from densely-populated ethnic minority regions such as southwest and northwest, which shows the basic characteristic of spatial distribution of resources of ethnic minority of China. Additionally, empirical research method is fully applied but new methods and quantitative analysis approach need to improve.

Up to December 2016, with the flourishing development of causes and specialty industries related to culture, sport and tourism in ethnic minority regions of China, more and more institutions of higher learning and research institutions pay increasing attention to this research field and the government and local authorities gradually increase support to industrial research of ethnic minority regions of China, which directly and indirectly promote health industrial development of ethnic minority regions. Take the national social science fund of China as an example; there are 35 related fund projects in total from the very first project in 1998 to 2016. In addition, the national natural science foundation of China, the trans-century training program foundation for talents, the national soft science research program and other fund support also show a marked growth trend.

Through bibliometric analysis, domestic academic community should deepen industrial research, actively broaden research vision and areas and keep track of international academic research hotspots. With regard to research methods, it should break through traditional experience and conclusion and qualitative description method and focus on scientific application of technologies and quantitative accurate analysis

based on big data and web-analysis. As for research direction, it should transform from basic research into applied research by the ways of research projects and symposium for local industries, explore cultural connotation of ethnic minority with new perspective and innovative concepts and analyze and summarize development direction of specialty industries featuring high technology, added value and cultural cohesiveness of ethnic minorities. By deepening the development research of specialty industries in ethnic minority regions, new engine of economic development in ethnic minority regions will be stimulated.

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