

Literature Review of Emerging Industry Research Status

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Keywords: Emerging industry; Bibliometrics

Abstract. Based on the 3801 emerging industry research literatures recorded in CAJD, this paper uses bibliometrics method to analyze, summarize and evaluate the research results of emerging industry from literature time, journal distribution, subject distribution, carrier distribution, research scholar distribution and other aspects. In addition, this paper also reveals the sequence of thought, tendency, key point, academic frontier domain of Chinese emerging industry' research and development from the angles of quantification and qualification, so as to provide reference for the practice and research of Chinese emerging industry.

1 Introduction

Emerging industry is a new division and new industry with the occurrence of scientific achievement, emerging technology or invention application. Now, emerging industry mainly means a series of emerging industry divisions emerged and developed due to the occurrence of electron, information, biology, new material, new energy, ocean, space and other new technology. So, development in emerging industry becomes the necessary requirement of improving the whole social efficiency and strengthening comprehensive national power. As China has already stepped into economically new normal state period, initiation in emerging industry and enhancement in effective supply become the efficient approach in accelerating continuous development of national economy. Therefore, more and more attentions are paid on emerging industry related subjects and relevant research achievements gradually become abundant.

As western scholars have an earlier initiation, more research achievements and a system formation in emerging industry, however, these cannot be applied in the practical activity of Chinese emerging industry. Even though Chinese scholars have a later initiation in the research of emerging industry, related research achievements are springing up in a large number with the improvement of paying attention to it. Chinese obtains many valuable achievements for the research of strategic emerging industry, especially in recent 10 years. Therefore, it has very important value and significance to review and analyze the research literature of strategic emerging industry in recent 10 years.

2 Literature selection

This paper takes CAJD as database and the journal thesis publically published in domestic journal as research sample to analyze the related thesis conditions contained in CAJD in recent 10 years, in order to reveal the basic condition of strategic emerging industry research. According to the search functions and characteristics of CAJD, see search results in table 1 specific to "emerging industry" using "title search".

Table 1 Quantity of emerging industry journal thesis out of the whole in recent 10 years

Journal category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
All journals	22	20	22	22	24	65	702	1069	1056	799	3801
Growth rate		-9.1%	10%	0%	9.1%	170.8%	980%	52.3%	-1.2%	-24.3%	
Core journals	8	1	3	7	7	7	101	259	313	288	994
Growth rate		-87.5%	200%	133.3%	0%	0%	1342.9%	156.4%	20.9%	-8.0%	

Overall, the quantity of Chinese thesis related to emerging industry in recent 10 years maintains faster increase with up to 3801 journal thesis totally, among which 994 are core journal thesis. This paper will take typical core journals as analysis samples in the follow-up analysis.

3 Research subject distribution

3.1 Category of research subject

For the analysis of recent 10 years' related core journal thesis recorded in CAJD, firstly, do preliminary screening by searching reference subject category through "title" and "key words", then, do second screening according to literature abstract and body, in order to conclude main research subjects, see table 2.

Table 2 Main research subject and quantity in recent 10 years' intellectual property research

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Theory	2	0	1	2	0	1	1	6	2	5	20
System	2	0	0	0	1	1	0	2	3	1	10
Management	0	0	0	1	1	0	1	4	1	3	11
Innovation	0	0	0	0	1	0	4	15	25	21	66
Industry	1	1	0	1	1	1	1	3	3	2	14
Training	0	0	0	0	1	0	5	10	10	6	32
Development & Approach	1	0	1	1	1	3	8	33	31	19	98
Question & Countermeasure	1	0	1	1	1	1	5	2	9	1	22
Assessment system	0	0	0	1	0	0	4	5	8	6	24
Policy	1	0	0	0	0	0	11	17	15	18	62
Strategic	0	0	0	0	0	0	58	159	201	198	616
Intellectual property	0	0	0	0	0	0	1	2	3	4	10
Ocean strategic	0	0	0	0	0	0	2	1	2	4	9

3.2 Analysis of main research subjects

From literature quantity of each subject, it can be seen that "strategic", "development &

approach”, “policy” as well as “innovation” are pretty keen to research with most concentrated achievements. Where, “strategic” research is the uppermost research aspect with bigger amount of quantity and prominent growth rate; but “development & approach”, “policy” as well as “innovation” is research hotspot. Since 2010, “policy” research has started a stable growth year after year, however, “development & approach” and “innovation” are wave line growth with bigger growing rate. Since 2010, “intellectual property” and “ocean strategic” research has started and showed increasing tendency (see figure 1).

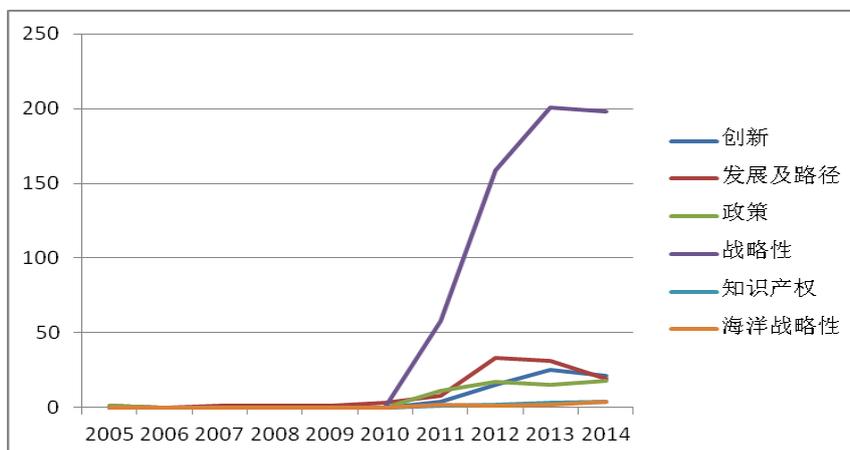


Figure 1 Main subjects and quantity variation of emerging industry in recent 10 years

In order to have a deeper and detailed reflection of the condition and tendency, this paper summarized the top 5 (related literature quantity) research subjects’ perspectives in recent 10 years (See table 3).

Table 3 Top 5 (research quantity) research subjects’ perspectives in recent 10 years

Main research subject	Top 5 (research quantity) research perspectives in recent 10 years				
Strategic	Risk	Network	Colleges	Carbon economy	International trade
	33	15	10	6	4
Development & Approach	Regular pattern	Integration interaction	Resources and environment	Chain group	
	13	10	4	4	
Policy	Finance	Financial	Revenue	System	Science & technology
	8	6	5	5	2
Innovation	Technology	Collaboration	Autonomously	Colony	Performance
	20	15	10	7	6

3.3 Subject with high quoted frequency

This paper judged literature’s academic influence according to the thesis’s quoted rate of emerging industry research published in CAJD. It took the total quoted frequency as the standard, listed the thesis in recent 10 years with the quoted frequency over 50 times and calculated the yearly average quoted rate (See table 4).

Table 4 Thesis with higher quoted rate in recent 10 years and yearly average quoted rate

	Title	Author	Journal	Publi sh year	Quote d freque ncy	Yearly averag e quoted rate
1	Cultivation and policy orientation of China strategic emerging industry	Zhu Ruibo	Reform	2011	196	49
2	Characteristics and policy orientation research of strategic emerging industry	Wan Gang	Truth seeking	2011	131	32.75
3	Grasp global industry adjustment opportunity, cultivate and develop strategic emerging industry	Li Xiaohua, Lv Tie	Macroec onomic study	2011	132	33
4	Cluster and system division of emerging industry – take emerging industry cluster of Shanghai Waigaoqiao Free Trade Zone as an example	Ren Shougen	Manage ment world	2005	127	12.7
5	Current condition analysis of China strategic emerging industry	Jiang Dapeng, Gu Xin	Scientifi c and technolo gical progress and counterm easure	2011	107	26.75
6	Mechanism analysis of emerging industry formation and development	Chen Gang	Journal of socialist theory guide	2005	79	7.9
7	Selection, assessment and example analysis of strategic emerging industry	He Zhengchu, Zhang Xun, Zhou Zhenhong	Scientolo gy and scientific technolo gy manage ment	2011	71	17.75
8	Selection principle and cultivation policy orientation of strategic emerging industry	He Zhengchu, Wu Yan	Scientolo gy research	2012	67	22.33

9	Assessment and selection of strategic emerging industry	Liu Hongchang, Wu Bo	Modern economy discussion	2011	68	17
10	Some thoughts in regard of strategic emerging industry development	Liu Hongchang	Scintology and scientific technology management	2012	59	19.67
11	Selection principle and cultivation policy orientation of China strategic emerging industry	Feng Hao	Economy research reference	2011	65	16.25
12	Experience and inspiration of Finland development strategic emerging industry	Zhou Fei, Wang Ning	Foreign trade practice	2011	59	14.75
13	Cluster cultivation and network characteristics of strategic emerging industry	Liu Zhiyang, Cheng Haishi	Reform	2011	58	14.5
14	Several recommendations on selection of cultivating strategic emerging industry	Wang Lizheng	Science and technology of China	2012	53	17.67
15	Development mode analysis of China strategic emerging industry	Xiao Xingzhi, Han Chao, Zhao Wenxia etc.,	Finance and economic research	2011	52	13
16	Development strategy, industry update and strategic Emerging industry selection	Feng Changgen	Science & technology review	2011	55	13.75

16 thesis with the quoted frequency over 50 times of the emerging industry related thesis in recent 10 years, among which “Cultivation and policy orientation of China strategic emerging industry” has the highest quoted frequency with yearly average quoted rate of 49. From the view of time, some thesis published in 2011 is paid close attention. From the view of subject, “Strategic” is the main research direction, “Development & approach” and “Assessment system” are quoted more.

4 Carrier distribution

Thesis related to emerging industry and recorded in CAJD in recent 10 years with over (include) 40 journals as follows: silicon valley (136), China scientific and technological industry(65), China science and technology industry park (62), scientific and technological countermeasures (56), commercial times (46), technological management research (45) as well as China scientific and

technological investment (40), which are mainly distributed in the two big categories of journals in information technology and economy & management.

5 Scholar structural condition

The scholars, who wrote emerging industry related thesis in recent 10 years recorded in CAJD with over (include) 10 journals as follows: He Zhengchu (Changsha University of Science and Technology, 16 journals), Zhong Qingliu (The CPC Hunan Provincial Party Committee Directly Office Party, 14 journals), Zhao Gang (China MOST Science and Technology Development Department, 14 journals), Zhang Xiaoqiang (NDRC, 12 journals), Wan Gang (Ministry of Science and Technology, 11 journals), Yu Xindong (The CPC Zhejiang Provincial Party Committee, 11 journals), Xiong Yongqing (Central South University, 11 journals), Wang Xinxin (China Science and Technology Information Research Institute, 10 journals) as well as Gu Haifeng (Donghua University, 10 journals). After analyzing the subsidiary organ of the above authors, they are mainly various colleges, national government agencies and research institutes.

6 Conclusions and recommendations

Emerging industry related literature in recent 10 years have higher theoretical significance to the practice of current industry, have very good instruction to the future theory research, but they also exist issues. This paper also analyzed emerging industry related research in recent 10 years and put forward concise recommendation.

Firstly, emerging industry related research in recent 10 years is mainly focusing on “strategic”, “development & approach”, “policy” and “innovation” aspects. Even though “system” and “management” research have increased, the total amount is still not too many, plus they have bigger differences compared with the mainly researched subjects. “Intellectual property”, “assessment system”, “industry” and “ocean strategy” have smaller amount of research on macro-controlled hot spots in the past years with incomplete research subject and not close connection with macro environment. Secondly, emerging industry related research in recent 10 years are from various colleges, national government agencies and research institutes, among which researchers of national government agencies accounting for bigger proportion with the research subject of macro-strategy policy generally. Under the circumstance of planned economic system, many behaviors of economic organizations become government behaviors or half government behaviors, therefore, concept must be changed. For emerging industry research, it must need to open to outside, encourage multiple research subjects entering into, break the access barrier, policy restraint, open to inside at the same time with open to outside, fully accelerate private enterprise force, push emerging industry research to market as well as accelerate the combination involving production, teaching and research.

All in all, this paper recommended relevant research on emerging industry to combine with practical economic environment, accelerate multiple subjects’ force, avoid repeated research phenomenon, take efforts to expand horizons, expand research subjects, enrich research perspectives, excavate research depth as well as carry out completely deep research.

Bibliography

- [1] Pu Laisi. *Scienology- Society of Technology Era* [M].Zhao Hongzhou, Jiang Guohua Translation version. Beijing: science press,1985.
- [2] Cao Xueyan, Hu Wenjing. *Progress Research of China Bibliometrics* [J]. Intelligence Journal.2004(02).
- [3] Qiu Junping. Informetrics (Four) *The 4th lesson Literature Information Discrete Distribution Regularity-Bullard Law* [J] . Intelligence Theory and Practice,2000,23(4):315—320.
- [4] Yang Zhihua. *Bullard Law in Quoted Journal Distribution and Establishment of Mathematical Model of Regularity in Quoted Journal Distribution* [J].Science and Technology

Communication.2015(03).

- [5] Brookes, Bertram C. *Bradford's law and the bibliography of science*. Nature . 1969.
- [6] Song Lingling. *On the Research of Library Network Information Resource Service of Bibliometrics based* [J].Scientific and Technological Information Development and Economy.2015(02).
- [7] Qiu Junping, Wang Yuefen. *Bibliometrics Content Analysis* [M] .Beijing: National LibraryPress,2008.
- [8] Yue Lijun, Han Shuhua. *Analysis and Research of Literature Thesis Keyword Link* [J]. Agricultural Library and Information Journal.2005(11).
- [9] Luo Shisheng. *Concept of Scientific Literature Keyword Link – One Statistical Analysis Technique* [J].Intelligence Journal.1994(02).
- [10] Lai Maosheng. *Science and Technology Information Retrieval*[M].Beijing: Peking University Press,1985.
- [11] Zhang Qiyu. *Information Retrieval Language*[M].Wuhan: Wuhan University Press,1983.