Scientific Research Publishing

The Evolution of Intellectual Structure in Organization Studies between 1990 and 2010: A Research Based on Bibliometric Analysis

Jinlan Zhang*, Fangwei Zhu, Xiuxia Sun, Peng Wang, Haoyang Song

Faculty of Management & Economics, Dalian University of Technology, Dalian, China
Email: *597190@qq.com

Abstract

The aim of this paper is to reveal the evolution of intellectual structure in the field of organization studies between 1990 and 2010, during which the complicated and diversified developing trends puzzled most researchers. 20386 academic articles from the top 41 journals are selected as the data source. With these data, terms co-occurrence analysis and clustering analysis are conducted with the software of CiteSpace. On the basis of bibliometric analysis, the paper identifies dominating research topics and changes of research focus in organization studies during the past two decades. Results show that the evolution path of organization studies can be traced out by the organizational elements of environment, strategy, institution and personnel, spanning different research levels. Finally the paper discusses the front research in future study.

Keywords

1. Introduction

Since 1950s, the study of organizations has been an active area. Organizational scholars are proud of the brilliant accomplishments of organization studies. It grew in terms of the numbers and prestige of scholars, number and reputation of journals and publications, and the number and quality of students [1]. It is said to be one of the most fundamental knowledge backgrounds to support the practice in managing organizations. People can trace back to find the clear evolutional path and various schools with different but definite views in organization studies. Entering the 1990s, with the rapid development of modern science and

technology, there are dynamic, complex and diverse tendencies in organizational management. The complexity of organizational environment is increasing, and the need for the study of organizations is strengthening. Affected by the complexity of management practice in enterprises, the branches of organization studies are increasingly multifarious and disorderly. The theoretical boundary of different schools has become increasingly vague. The major developments and trends of organization studies since 1990 have puzzled most researchers [2]. Hence, identifying and clarifying the evolution of intellectual structure in the field tends to be much important for the sustainable development of organization studies.

In other fields of management, articles about intellectual structure and evolution of research topics are frequently produced. The followings are some typical examples: Chen and Lee revealed topics and development trends in the knowledge domain's intellectual structure [3]; Nerur, Rasheed and Natarajan used the method of author co-citation to study the intellectual structure of the strategic management field [4]; Pilkington and Meredith, based on a co-citation analysis, analyzed the evolution of the intellectual structure of operations management in the year between 1980 and 2006 in Operation Management area [5]. However, similar cases seldom occur in the field of organization studies due to the complexity and diversity of research development. Scott (2004) provided an overview of organizational sociology, which overlapped with the larger area of organization studies to a great extent, focusing on the major developments and trends before 1990s and the future prospects after 1990s [6]. This could be considered as the latest comprehensive understanding of the development of organization studies. Other remarkable contributions come from the discussion of the evolution of the research community of organization studies, although the study only covers the situation in Anglophone North America during 1945-2000 [1], as well as the description of the transformation of organization studies with an historically based view [7]. Other reviews in this field mostly focus on a certain topic, such as organizational capability, organizational culture, self-organization theory, employee satisfaction, leadership etc. These reviews cannot support an overall and systematic understanding of the evolution of organization studies.

What kinds of changes have occurred in the field of organization studies for the past 20 years? Is there any clear development track to follow? What are the implications for the future development? These are the questions that this study is trying to answer. Choosing the years between 1990 and 2010 as a research period, the article selects organization-related literature from the top 41 ranked influential international journals in business management field as sources of research data. By using CiteSpace, the paper aims to display the evolution of research topics and intellectual structure in organization studies between 1990 and 2010. Hot topics and frontier issues in this field are also discussed in this study. Based on the analysis of focus and trends, we explore our insights for the future study of organizations.

This article includes five sections. The first part briefly reviews the develop-

ment of research topics in organization studies and introduces the research background of this study. The second part focuses on data and methodology. In the third and fourth part, two bibliometric analysises, terms co-occurrence analysis and clustering analysis, are presented with the help of CiteSpace. The next section reveals the intellectual structures in three periods between 1990 and 2010, and analyzes the hot research topics in organization studies. In the conclusion part, the evolution path in last two decades and suggestions on future studies are discussed.

2. Background and Literature Reviews

Basically, the field of organization studies was interdisciplinary from the outset. Its parent disciplines included sociology, anthropology, economics, psychology, political science, etc. As the field has its own specific focus—various forms of research and speculations on organizations—it has gradually separated itself from its parent disciplines and has expanded rapidly (Fairclough, 2005) [8]. In this paper, the term organization studies is used to refer to all research about anything in organizations, not only the macro part such as organizational design, organizational management, organizational economics, but also the micro part such as organizational psychology, organizational behavior.

The studies of organizations are highly related to the practice and development in organizations in working and social environments. The change of the environment and the organizations deeply influenced the academic research, in other words, changes of the organizations leaded the evolution of organization studies [9]. Drawing on this opinion, we overviewed the major developments in the field of organization studies according to the changes of the external environment.

In the first 50 years of the 20th century, the continually expanding of industrial production scale of the western countries accelerated the industrialization process. Enterprises strove to increase their productivity. Management personnel and scholars were impelled to think about the effective methods and deal with organizational problems systematically. Frederick W. Taylor, standing in the perspective of the first-line manager, discussed the suitable organization management mode for the daily production of enterprises. Henry Fayol, based on a global view, designed the organization pattern by taking into account all the enterprise activities. Max Weber, meanwhile, built an ideal universal organization model starting from the technical level. This period is called the classical organization studies, during which organization mode was studied from the point of view of the "static state, structure and system" paradigm [10]. In this period, the organization was regarded as a technical and economic system, focusing on the system while ignoring individual, emphasizing the structural division of labor while neglecting the interpersonal relationship. Later, as the mass production went on in 1960s, conflicts between production and labors increased. Scholars like George E. Mayo, Abraham H. Maslow and Fredrick Herzberg broke through the limitation that viewed organization as a technical and eco-

nomic system, and began the study of organizational behavioral science [11] (Herzberg, Mausner& Snyderman, 1993). Their theories emphasized that organization is a social system and personnel is the most important element in an organization [12] (Maslow, 1987). They advocated the human-centered research of management problems in the organization.

Since the 1970s, more theoretical genres and thoughts have been formed with the rapid development of modern science and technology and the increasingly complicated organization environment. The study of organizations has come into an era of prosperous development. Facing the flourishing situation, some scholars inferred that the organization research field seemed destined to be fragmented or a decisive battle against each other, and some other scholars were concerned about this long term destructive "paradigmwars" [13]. But it turned out that organization research schools were gradually on track to an integrated and inclusive road since the 1990s [14]. The study of organizations has become more comprehensive and applicative as mutual infiltration and fusion arose among these schools. Compared with the former schools which had outstanding positions and various viewpoints, the boundary of organization research and academic claims became weakened after 1990s. Fligstein and Feeland (1995) thought there were no innovative ideas in organization studies from the 1990s onward [15]. Scott implied that organization studies came into a convergence theoretical research period in which scholars tend to summarize, synthesize and apply the former theories. He said the field was evolving in new directions and facing changes of boundaries, strategies, power processes and conceptions, though there was not comparable creative intensity any more in the most recent decades [16].

Over the years, the continued accumulation and precipitation of the theoretical exploration and empirical testing referred to the general knowledge of organization, ultimately evolved into the field of organization studies. The study of organizations is rooted in the process of social development, which deepens people's understanding of objective laws of the organization and its behavior. Well-formed disciplines and traditions of research are formed in this field and we can get the general phenomenon of interest in organization studies when we make an overview. All of these studies are exploring and explaining on the issues of social development and organizational management. It makes up the basis of effectively understanding and managing organizations. While the research themes are not easy to identify since 1990s, it is essential to conduct the systematic review by applying a bibliometric analysis. In this way, we could get the specific subjects of research and the clear-cut evolement of intellectual structure in organization studies, providing a convenient condition to follow-up scholars.

3. Data and Methodology

3.1. Data Collection and Processing

Journal Citation Reports is recognized as the authority of journal evaluation re-

ports, which synthetically and objectively evaluates the influence of journals in a field using citation data based on over 11,000 scholarly and technical journals from more than 3300 publishers in over 80 countries. In the enhanced Journal Citation Reports® edition, we select "business" and "management" as subject categories which were supposed to cover most of the field of organization studies. We use the indicator that named Article Influence TM (AI) Score. The AI Score measures the average influence of a journal's articles and the mean is 1 [17]. The score greater than 1 indicates that the influence of each article in the journal is above-average. With the standard that the AI Score greater than 1, 41 journals are selected as data sources and applied to our research, as is shown in Table 1.

On this basis, we search with the topic of Organization*respectively on 41journals in Web of Science, and set the time limit from 1990 to 2010. The reason why we choose this time period in because it may take 4 - 6 years for one article is cited as a source by others since it was published in a journal，so we collect the data from 1990-2010 to reveal the intellectual structure in the field of organization studies and this can be more objective to identify the basis of the paper.

Finally, 20,386 pieces of target literatures are selected as the input of our bibliometric analysis. Considering the field of organization studies has been relatively mature, literature can be used to delineate the research topics and intellectual structure. Each piece of literature can be treated as a research topic to reflect several knowledge points. The knowledge network composed of the relationship of literatures suggests the research topics and intellectual structure for a specific period in a field.

Between 1990 and 2010 it demonstrated a rise in the quantity of our target literatures as shown in Figure 1. The solid line shows a steady growth trend in the in the field of organization studies, and the dotted line highlight the growth rate, it can been see from Figure 1, the growth rate is instability and looks like a roller coaster. We also find that the variation tendency can be divided into three stages: In earlier stage, high-speed but instable growth; in middle stage, slow-speed but stable growth; in later stage, vigorous growth and tend to be a burst. Considering this characteristic of literature distribution, we define three typical research periods, respectively for 1990-1996, period of oscillation development; 1997-2003, period of steady development; 2004-2010, period of burst growth. The internal correlation of knowledge in each period is very high, which suggests a common focus on the similar research topics. At the same time, the three periods are not isolated from one another and there's certain inner knowledge links and logic development in theory.

3.2. Citespace—A Bibliometric Analysis Tool

In recent years, the methods for identifying intellectual structure and evolution of research topics tend to be increasingly diversified. Bibliometric techniques provide an appropriate tool for studying the intellectual structure and research

Table 1. Data source journals and literature amounts.

| Rank	Journal Title	AI	Amount
1	ACAD MANAGE J	5.406	827
2	ACAD MANAGE REV	5.205	702
3	ADMIN SCI QUART	5.093	605
4	ACAD MANAG ANN	3.028	46
5	STRATEGIC MANAGE J	2.957	694
6	ORGAN SCI	2.942	882
7	RES ORGAN BEHAV	2.906	133
8	MIS QUART	2.76	321
9	ORGAN RES METHODS	2.681	191
10	J MANAGE	2.665	637
11	PERS PSYCHOL	2.636	678
12	J MRKETING	2.524	210
13	MANAGE SCI	2.504	378
14	J MARKETING RES	2.43	71
15	ORGAN BEHAV HUM DEC	2.084	274
16	INFORM SYST RES	2.02	174
17	MRKETING SCI	1.967	48
18	J SUPPLY CHAIN MANAG	1.958	29
19	OPER RES	1.928	40
20	J ORGAN BEHAV	1.854	788
21	J ECON MANAGE STRAT	1.734	65
22	J OPER MANAG	1.661	231
23	J CONSUM RES	1.659	17
24	J ENVIRON ECON MANAG	1.606	4
25	J MANAGE STUD	1.53	854
26	J INT BUS STUD	1.512	301
27	J BUS VENTURING	1.398	256
28	DECISION SCI	1.367	192
29	RES POLICY	1.353	333
30	STRATEG ENTREP J	1.3	l42
31	ORGAN STUD	1.299	1142
32	INT MANAG REV	1.278	114
33	ENTREP THEORY PRACT	1.209	152
34	LEADERSHIP QUART	1.185	388
35	J MANAGE INFORM SYST	1.164	201
36	OMEGA-INT J MANAGE S	1.077	219
37	J ACAD MARKET SCI	1.053	171
38	INT J FORECASTING	1.05	26
39	HARVARD BUS REV	1.042	697
40	J CONSUM PSYCHOL	1.011	9
41	IMA J MANAG MATH	1.006	5
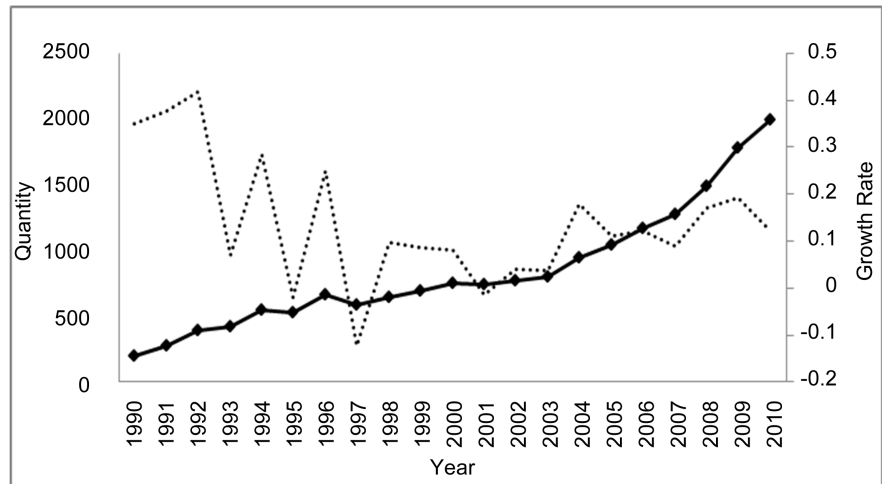
Figure 1. The quantitative variation of target literature.

topics of the field. Semantic analysis, data mining and graphics display have played a more functional role in literature analysis [18]. These methods are considered to be objective and quantitative, avoiding analysis deviations caused by researchers' subjective assumption. Especially for an interdisciplinary research area like organization studies, Bibliometric method is a key tool in presenting topics and development trends inintellectual structure in comprehensive and precise way. CiteSpace, the analyzing tool of this paper, is the most distinctive and influential visual software in the information analysis field in recent years. It was developed by Dr. Chaomei Chen in September 2003, and it was updated to version CiteSpace-2.2.R11 in 2011. CiteSpace has been widely used by over 60 countries for 10 thousand times and has become a universally applied new tool in Scientometrics. With the help of CiteSpace, not only can we get structural and temporal analyses of a variety of networks derived from scientific publications, including collaboration networks, document co-citation networks and co-occurrence networks, we can also interpret the network patterns and historical patterns, including identifying the fast-growth topical areas, finding citation hotspots in the land of publications, decomposing a network into clusters, automatic labeling clusters with terms from citing articles, geospatial patterns of collaboration, and unique areas of international collaboration [19].

3.3. Terms Co-Occurrence Analysis

In order to explore the evolution of research topics in organization studies, we employ the analysis of terms co-occurrence network provided by CiteSpace. Terms co-occurrence is defined as the paired presence of two terms in the same article. If terms A and B both appear in one particular article, we call them terms co-occurrence. Terms B and C may co-occur in another article, things go on like this, finally a co-occurrence network of these terms will be created. The co-occurrence network can reveal the collective interconnection of terms as well as the research hotspot within a specific field of knowledge. Because of this, we believe the function of terms co-occurrence network provided by CiteSpace is useful in

realizing our research objectives in this paper.

To run CiteSpace, we import the data downloaded from Web of Science, set time zone from 1990 to 2010 and time span as 1 year, set the thresholds of three levels of co-occurrence frequency in three time divisions of preceding, middle and rear as (2,1,20), (3,2,20), (3,2,20), and select the source of subject terms as Title, Abstract, Descriptors and Identifiers. Figure 2 shows the knowledge map generated by terms co-occurrence network analysis in CiteSpace.

In the map the nodes and links stand for co-occurrenc pairs of terms and the colors of links reflect research years when they first co-occurred. There are only limited nodes and links, with nodes of low co-occurrence frequency failing to appear due to the setting of threshold. The change of color from dark to light reflects the evolution trend of the knowledge. As Figure 2 shows, We can see three periods according to the color changes clearly, which is almost consistent with the division of three typical research periods of the target literature. The biggest circle, in the left of Figure 2, represents the research period 1990-1996 which was labeled by organization performance, performance and firm performance *et al.* The circle in the middle of Figure 2 represents the research period 1997-2003 which was labeled by knowledge, trust behavior and resource-based view, *et al.* The rest of the circle in Figure 2 represents the research period 2004-2010 which was labeled by ambidexterity, innovation and Leadership skill, *et al.*

Along with the knowledge map, CiteSpace will also export the Network Summary Table which records the complete information of the terms co-occurrence network. It includes the frequency, centrality and burst of the co-occurrence terms. The frequency directly embodies the degree of the term being studied and the centrality reflects the role of the term in the network. These two indicators will tell us about the most common research topics as well as the intellectual structures during the period of development, while the burst will help us to find out the front researches in recent and future studies.
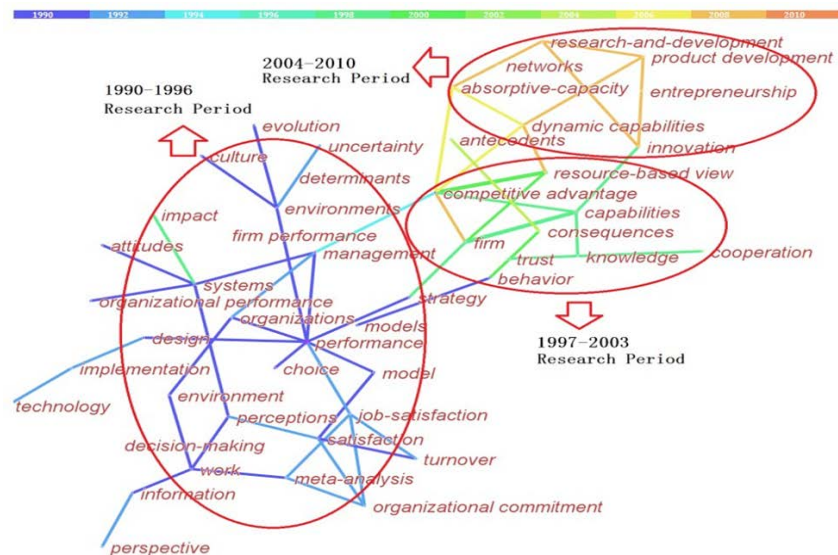

Figure 2. The knowledge map of terms co-occurrence network.

Based on the Network Summary Table, we screened and removed the terms artificially which have the similar conception, ambiguous expression or have no relevance with our research questions. For example, we can't get any ideas of research topics from some of the terms like "management", "organization", "model" and so on. Finally we edited the table and output the terms with high frequency and centrality, to support the interpretation of knowledge map and analysis of the co-occurrence network. Table 2 shows the first 50 terms with high frequency in the period of 1990-2010.

Table 2. High frequency co-occurrence terms.

Rank	Frequency	Centrality	Co-occurrence Terms
1	4085	0.69	organization performance
2	988	0.21	innovation
3	936	0.1	strategy
4	766	0.01	organizational behavior
5	747	0.29	competitive advantage
6	719	0.08	knowledge management
7	675	0.13	industry
8	672	0.04	work
9	616	0.16	information technology
10	581	0.25	technology
11	447	0.07	decision-making
12	409	0.16	systems
13	408	0.15	environment
14	374	0.12	dynamic capabilities
15	354	0.01	power
16	322	0.1	networks
17	321	0.09	commitment
18	310	0.03	resource-based view
19	291	0.09	evolution
20	278	0.11	trust
21	272	0.01	entrepreneurship
22	267	0.04	market
23	259	0.05	leadership
24	256	0.19	job-satisfaction
25	233	0.01	organizational culture
26	230	0.01	perceptions
27	230	0.01	meta-analysis
28	230	0.24	communication
29	216	0.07	organizational design

Continued

30	213	0.02	product development
31	209	0.02	diversification
32	203	0.15	attitudes
33	202	0.03	absorptive capacity
34	191	0.01	research-and-development
35	189	0.01	governance
36	187	0.07	strategic alliances
37	186	0.01	identity
38	185	0.26	turnover
39	172	0.01	integration
40	171	0.07	choice
41	169	0.19	cooperation
42	159	0.13	organizational commitment
43	157	0.03	organizational change
44	147	0.01	conflict
45	144	0.13	implementation
46	138	0.05	uncertainty
47	133	0.01	transformation
48	125	0.01	personality
49	112	0.01	diffusion
50	110	0.01	time

3.4. Clustering Analysis

On the basis of terms co-occurrence network, we go on with clustering analysis in CiteSpace and get the clusters with close internal relations of intellectual structure. Each cluster has its size and mean year, which suggests the quantity and period of the co-occurrence terms as well as their source literatures. Moreover, CiteSpace offers clustering labels according to the characteristics of co-occurrence terms with a specific algorithm (Here we choose the TFIDF-algorithm). From these labels we can get objective information of the evolution of intellectual structure instead of subjective interpretation by ourselves. Table 3 shows the clustering results in the field of organization studies in three periods.

4. Discussion

Through going back to the text of the source literatures, we get more information on these clusters and further discuss the intellectual structure of organization studies in three periods in the following section.

4.1. The Intellectual Structures in 1990-1996 Period

In the 1970s and 1980s, organizational ecology was the hot topic in the field of

Table 3. Research topics of organization studies in three periods.

Period	Cluster ID	Size	Mean	Period
1990-1996 Period	15	13	1991	choice (6.29); involvement (6.28); ecology (6.28); network infrastructure (6.27); fast response (6.27); adaptation (6.30); density dependence (6.28)
	14	10	1993	organizational design (5.75); paradigm shift (5.75); information technology (5.75); innovation (5.75); organizational change (5.76)
	1	8	1996	organizational citizenship behavior (2.39); employee (2.26); performance (2.34); psychology (2.42); organizational commitment (2.42)
1997-2003 Period	15	13	1991	resource-based view (7.78); environment (7.78); resource allocation (7.78); resource dependence theory (6.89); inter-organizational (6.87)
	14	10	1993	decision-making (4.54); strategic alliances (4.54); multinational corporation (4.99); joint ventures (4.99); local partner collaboration (4.99)
	1	8	1996	organizational politics (2.98); fraud (2.80); organizational hegemony (2.98); institution (2.83); organizational identity (2.98)
2004-2010 Period	7	8	1998	ambidexterity (3.54); ambidextrous organization (3.54); Exploitation (3.01); exploration (3.01); structural differentiation (3.12)
	10	13	2000	innovation (4.22); knowledge (4.22); absorptive capacity (4.05); research and development (4.05); organizational learning (4.22)
	11	4	2002	Leadership skill (1.63); trust (1.50); entrepreneurship (1.36); transformational leadership (1.63); inter personal relationship (1.36)

organization studies. It combined the knowledge of biology, ecology, sociology and other disciplines, drew on the concepts, models and methods from institutional economics and industrial economics, and studied the development of individual organizations and their interactions with the environment. Enter 1990s, this topic was still preferred by many scholars who were curious about the process of organizational change. Hannan and Freeman promoted the change of analysis level for the organization development process from a single individual to organization population with the same type of organizations [20]. The population was defined as a system which was constituted by a range of organization community and the environment interacting with them. In the same system, organizations usually had similar structures and goals. The study on the characteristics and heterogeneity in the process of their emerging, growth, competition and recession fascinated many scholars. For example, Delacroix and Swamina than tracked the development of organization "population" in wine industry during the ten years of research. Their conclusion didn't support the formulation of the relationship between density and failing rate of organizations proposed by Hannan and Freeman; instead they found that prior failings could inspire organizations' ability to avoid elimination by migrating to neighboring niches and by enlarging their initial niches [21]. Another transverse comparative study of the brewing industry in Germany and the United States showed that the organizational evolution of the two brewing industries was remarkably similar and density dependent [22]. Accompanied by the development of organizational ecology, longitudinal study methods such as event-history analysis is widely used and improved.

Due to the progress of information technology and the increasing spread of knowledge economy, great changes happened in various fields such as marketing, technology, economy and culture. Organizational change was studied from multi-angles dynamically during this period. Most organizational researchers were concerned about how to adapt themselves to the new situation promptly and effectively. Knights and Morgan found that there was limited attention to the implications of consumption and consumerism for the analysis of organization study especially when the nature of consumer society was changing. They considered the sociology of organizations should make a greater contribution on discussions of consumption and associated debates concerning contemporary consumer society [23]. Otherwise, information technology was one of the most important enablers for organizational changes in this period. The development of information technology pushed forward the major change in the structure, function and process of organizations [24]. The redesign of IT-based business process was becoming increasingly important in organizational practice.

In addition, the demand for the study on organizational adaptation and its social identity in a new era also appeared in the research topic of organizational researchers. Organizations are regarded as independent object of study and the research topics such as social identity, organizational image, and role theory are investigated deeply. What's more, this gave rise to the combination between psychology and organization studies, and more studies tended to focus on the level of organizational behavior and psychological applications in this research period. Many scholars centered on the developments and changes of organizational members and the organization itself-look into the relationship between emotion and work outcomes of staff, investigate the approach to job satisfaction [25], explore the management techniques which can affect corporate performance, reputation, and CEO pay (Brief, Butcher & Roberson, 1995),think about the affection of receptivity on the emotional labor , find out the ways to obtain the satisfaction of employee [26] and so on. All of these have made great contribution to the development of organization studies and the practical application of organizational behavioral science.

4.2. The Intellectual Structures in 1997-2003 Period

Accompanied by inter-organizational competition becoming increasingly fierce, the question on how to keep competitive advantage for organizations arouses more concern. Some people keep an eye on the codependent relationship between the organization and the environment, and conduct their research on the basis of resource dependence theory initiated by Pfeffer and Salancik [27]. The environment including economic as well as political systems is an important foundation for the existence and development of organization. Organizations constantly exchange resources with environment to ensure the competitive advantage. These researches pay close attention to the way how organization can achieve its effective competition resources from environment rather than the organizational environment itself. In other words, it is more important to con-

trol and utilize resources than simply depend on it. Peteraf emphasized that it was especially important to recognize and identify resources which have the maximum utility, and seeking the balance of resource exchanges to reduce the dependence of resources would be taken as access to the core of competitive advantage [28]. While resource dependence theory focused on the external resource exchange and control, other researches emphasized the resources inside the firm as sources of competitive advantage. These researches applied the resource-based view which was put forward by Birger Wernerfelt in 1984. For example, Miller carried out empirical and application study systematically on the resource-based view. In the research, they made a distinction between property based and knowledge based resources, with the former helped performance the most in stable and predictable environment, whereas the latter resources would be more helpful in changing and unpredictable environment [29]. Similarly, other scholars started thinking about the problem of resource allocation, including resource optimization, influencing factors and conceptual model derived from Typology [30].

In the new era of the 21st century, economic globalization becomes an important tendency. International strategy is adopted by more and more organizations in an attempt to obtain a competitive advantage. Many scholars follow the pace of internationalization of enterprises to track their international expansion path and diversification mode, to investigate the environmental impact and entrepreneurs' transition in the process of internationalization, and to analyze the international strategic positioning and decision making [31]. One of the hottest topics is the impact of Foreign Direct Investment (FDI) in organization and management practices. Child pointed out that FDI had impact on domestic management practice, but different economic environments lead to different impacts and changes [32]. During this period China was undergoing economic transition and state-owned enterprise reform which inspired wide attention and a lot of research. One of the most significant findings comes from Peng and Luo. They devoted to the study of China in transition economy and how to gain competitive advantage in the globalization process [33]. For example, they confirmed that the diversity of experience in organizational learning by multinational enterprises operating in a transition economy had more lasting impact on subunit performance than the intensity of experience based on a survey of 108 multinational enterprises subunits operating in China [34].

Besides, some research topics related to social phenomena such as organizational hegemony, fraud, discrimination and conflict come into a big cluster. In these studies, most researchers believed there was a certain culture system in the formation of these problems. They highlighted the cultural characteristics of environment in affecting the organizational structure and behavior. Brown and his colleagues focused on the research of organizational hegemony and found that keeping silence of the constitution of the organization as a regime of power contributes to the generation of organizational hegemony. Language was an important medium of social control and power, as well as the means of self-authorship

[35]. By the method of experiment, Brief summarized that organizational bias was not directly related to modern racism and discrimination at work, but would evolve into employment discrimination under the influence of a system with obedience to authority [36]. These issues lead to the reconsideration on institution influence. Some researchers believed that institutional changes can do benefit on the solution of these problems. Lawrence et al researched on the inter-organizational collaboration and suggested that collaboration could act as a source of institutional change through the generation of new practices, rules, and technologies which might become new institutions if be diffused sufficiently [37].

4.3. The Intellectual Structures in 2004-2010 Period

Around 2005, there is a cluster mainly talking about organizational ambidexterity, which is defined as the dual nature of organization. Most of the discussions are about the paradox or conflict issues in organizational context. Gouldner emphasized the "Janus-faced" nature of organization as a rational system and natural system [38]. Scott and Davis elaborated the paradox of organization which was understood as formal structures subject to calculable manipulation for one thing, and social structures inescapably imbedded in an institutional matrix for another [16]. Burgers and his colleagues studied the relationship between structural differentiation and ambidexterity, and they believed that structural differentiation had an effect on ambidexterity through integration mechanisms [39]. The connotation of organizational ambidexterity has been explored largely and the conflict forces enriched from exploration and exploitation to more situations. Researchers believed that ambidexterity could be obtained by organizations through balancing between these conflicting forces [40].

As knowledge is playing an increasingly important role in economic development, the investigation on knowledge and organizational learning has never stopped. The viewpoint of organizational learning as a way to obtain long-term sustainable competitive advantage has been established and well accepted in practice. More scholars conduct the study on how to make better, faster and more effective in organizational learning. The learning context becomes more broad and flexible including complementary learning from competitors or alliances, practice transfer learning, team learning [41] and learning from failure [42]. In the meantime, acceptance and absorptive capacity was deemed as research priorities. Researchers tried to find out the emergence of absorptive capacity from the actions and interactions of individual, organizational, and inter-organizational [43]. The study on multinational companies carried on study of absorptive capacity on the basic idea of Chandler's absorbed conceptual model [44]. Volberda et al emphasized the importance of "micro-antecedents" and "macro-antecedents" of absorptive capacity which could influence future outcomes such as competitive advantage, innovation, and firm performance [45].

Entrepreneurship is the third cluster in the period of 2004-2010. During this period, the study goes deep into certain particular aspect of entrepreneurship characteristic. There are lots of experimental and quasi-experimental studies on

the influence of entrepreneurship, especially on the new direction of strategic entrepreneurship [46]. In Shepherd and his colleagues' research, they analyzed the entrepreneurs who employed impression management strategies in response to the negative attributions associated with the stigma of venture failure and argued that such strategy was exactly to enhance the psychological well-being of the failed entrepreneur through self-verification and self-determination [47]. Other researchers analyzed psychological processes linking authentic leadership to follower behaviors, and focused on the estimating of return on leadership development investment [48]. Some other researchers are more interested in entrepreneurial behavior research in the case of uncertainty or failure. Keywords for entrepreneurship also include entrepreneurs' emotional intelligence, emotional contagion, authentic leadership and leadership impact, suggesting that entrepreneurship is really a hot topic in organization studies around 2010.

5. Theoretical and Practical Implications

With the help of terms co-occurrence analysis and clustering analysis by using Citespace software, these paper display the evolution of research topics, intellectual structure and hot topics in organization studies between 1990 and 2010. Our research will extend apply contextual of bibliometric method and Citespace software. And our findings will help researchers gain an insight into the organization studies. The hot topics will help researchers to track the research front in organization studies.

Our study also investigates the evolution of the intellectual structure of organization studies and tries to find the development path that the studies followed in these two decades. Our finding indicate that the research of organization studies has never got rid of the questions about the organization elements, the research of organization studies can be divided into several different levels, from micro-level to macro-level, the front researches in the field of organization studies involve self-concept, aggression, psychological security, persistence, and disaster. These findings will provide a channel for communication between academics and practitioners. These findings will also help the business school to make some appropriate issues being taught in graduate programs dealing with organization behavior, human resource management and some other discipline.

6. Conclusions

Making a general survey of the study of organizations from 1990 to 2010, we find that organization studies have been heading in the direction of deriving insights from traditional organization theory, combining with different times and social background, and evolving into many new theoretical branches. The research tends to be more dynamic and flexible, closely with practice in multi-perspectives. As the most influential knowledge background in the modern social system, organization studies are playing an increasingly important role in its interaction with society. With the help of terms co-occurrence analysis and clustering analysis, we investigate the evolution of the intellectual structure of

organization studies and try to find the development path that the studies followed in these two decades. Some interesting findings can be concluded as follows:

Firstly, we find that the research of organization studies has never got rid of the questions about the organization elements, and the evolution of the intellectual structure is established on the studies about organizational elements such as environment, strategy, institution and personnel. For example, organizational population and resource dependence researches were talking about the environment of organizations; the topics of organizational changes, internationalization and organizational learning focused on the research themes about organizational strategy; the discussion of organizational politics and ambidexterity based on the theory of organizational institution; Organization behavioral studies and entrepreneurship explored their research from the organization members.

Secondly, the research of organization studies can be divided into several different levels, from micro-level to macro-level. For the micro-level, most literature focuses on the individual and organization levels, and for the macro-level mostly on the inter-organization and system levels. Considering four kinds of essential elements the evolution path based on, as well as the four levels the studies covered, we explored the intellectual structure of organization studies into four main researching lines, as is shown in Figure 3.

Thirdly, several hot topics are particularly remarkable throughout the whole period of organization studies between 1990 and 2010. For one thing, the scholars paid so much attention on the issues of organizational performance. Lots of topics centered around the effects on performance, such as the relationship between positional advantage and performance, strategic resources and performance, leadership and performance, organizational learning and performance. Organizational performance was regarded as the most important dependent variable in organization studies. For another thing, as the knowledge economic era is coming, the study of knowledge has been flourishing in the last two decades. There has been a constant increase in new perspectives and ideas ranging from the study of the influence of the knowledge on organizational development, to the study of how to turn knowledge into effective driving force for organizational development. In addition, interests in the organization leaders are more than ever and entrepreneurship has become the main emphasis of research in the field of organization studies. Particularly, studies tend to focus more on the micro level of individual emotional, psychology and characteristics.

Finally, according to the results of burst in CiteSpace, the front researches in the field of organization studies involve self-concept, aggression, psychological security, persistence, and disaster. It indicates that the study of organizations is becoming increasingly sensitive to the uncertain external environment. While the influence of global economic crisis is continuing, as well as the spread of negative emotions in the organization, the demand for organization security and stability research is further strengthened. As the research trends show, the new directions of organization studies will be fully reflected as inter disciplinary re-

search evolving from the continuous integration of organization theory with psychology, marketing, supply chain management, strategic management, and other areas.

This article dedicates to illustrating the latest development and the evolution of the intellectual structure of organization studies, which may be valuable for the researchers to grasp the research focus and trends in organization studies. However, due to the purification of the data are insufficient, his study has its limitations in the methodology. In order to remedy this limitation, we do some explanation and give some examples by tracking back to the representative literatures. This may lead to subjectivity to some extent. Additional research is required to extend the range of analysis objects. Given the above defects, the future research should try to refine the method in the comprehensiveness and rigor, and show the complete analysis of the evolution of research topics in organization studies.

Acknowledgements

References

[1] Augier, M., March, J.G. and Sullivan, B.N. (2005) Notes on the Evolution of a Research Community: Organization Studies in Anglophone North America, 1945-2000. *Organization Science*, **16**, 85-95. https://doi.org/10.1287/orsc.1040.0108

[2] Üsdiken, B. and Kieser, A. (2004) Introduction: History in Organisation Studies. *Business History*, **46**, 321-330. https://doi.org/10.1080/0007679042000219166

[3] Chen, T.T. and Lee, M.R. (2006) Revealing Research Themes and Trends in Knowledge Management: From 1995 to 2010. *Advances in Knowledge Acquisition and Management*, **4303**, 99-107.

[4] Nerur, S.P., Rasheed, A.A. and Natarajan, V. (2008) The Intellectual Structure of the Strategic Management Field: An Author Co-Citation Analysis. *Strategic Management Journal*, **29**, 319-336. https://doi.org/10.1002/smj.659

[5] Pilkingtona, A. and Meredith, J. (2009) The Evolution of the Intellectual Structure of Operations Management—1980-2006: A Citation/Co-Citation Analysis. *Journal of Operations Management*, **27**, 185-202.

[6] Scott, W.R. (2004) Reflections on a Half Century of Organizational Sociology. *Annual Review of Sociology*, **30**, 1-21.
https://doi.org/10.1146/annurev.soc.30.012703.110644

[7] Clark, P. and Rowlinson, M. (2004) The Treatment of History in Organisation Studies: Towards an "Historic Turn"? *Business History*, **46**, 331-352.
https://doi.org/10.1080/0007679042000219175

[8] Fairclough, N. (2005) Peripheral Vision. Discourse Analysis in Organization Studies: The Case for Critical Realism. *Organization Studies*, **26**, 915-939.
https://doi.org/10.1177/0170840605054610

[9] Stretesky, P.B., Huss, S. and Lynch, M.J. (2012) Density Dependence and Environmental Justice Organizations, 1970-2008. *Social Science Journal*, **49**, 343-351.

[10] Clegg, S.R., Nord, W.R., Cynthia, H. and Tom, L. (2006) The Sage Handbook of

Organization Studies. Sage Publications, London, 23-44.

[11] Herzberg, F., Mausner, B. and Snyderman, B.B. (1993) The Motivation to Work. Transaction Publishers, New Brunswick, 3-5.

[12] Maslow, A.H. (1987) Motivation and Personality. Harper & Row Publishers, New York, 10-20.

[13] Aldrich, H.E. (1992) Incommensurable Paradigms? Vital Signs from Three Perspectives, Rethinking Organization: New Directions in Organization Theory and Analysis. Sage publications Ltd., London, 61-65.

[14] Scott, W.R. (1998) Organizations: Rational, Natural, and Open Systems. 4th Edition, Prentice-Hall, Englewood Cliffs, 18-19.

[15] Fligstein, N. and Feeland, R. (1995) Theoretical and Comparative Perspectives on Corporate Organization. *Annual Review of Sociology*, **21**, 21-43.
https://doi.org/10.1146/annurev.so.21.080195.000321

[16] Scott, W.R. and Davis, G.F. (2007) Organizations and Organizing. Rational, Natural, and Open System Perspectives. 9th Edition, Prentice-Hall, Englewood Cliffs, 35-39.

[17] Bergstrom, C.T. (2007) Eigenfactor: Measuring the Value and Prestige of Scholarly Journals. *College & Research Libraries News*, **68**, 314-316.
https://doi.org/10.5860/crln.68.5.7804

[18] Chen, C. (2001) Visualizing a Knowledge Domain's Intellectual Structure. *Computer*, **34**, 65-71. https://doi.org/10.1109/2.910895

[19] Chen, C. (2006) CiteSpace II: Detecting and Visualizing Emerging Trends and Transient Patterns in Scientific Literature. *Journal of the American Society for Information Science & Technology*, **57**, 359-377. https://doi.org/10.1002/asi.20317

[20] Hannan, M.T. and Freeman, J. (1993) Organizational Ecology. Harvard University Press, Cambridge.

[21] Delacroix, J. and Swaminathan, A. (1991) Cosmetic, Speculative, and Adaptive Organizational Change in the Wine Industry: A Longitudinal Study. *Administrative Science Quarterly*, **36**, 631-661. https://doi.org/10.2307/2393277

[22] Carroll, G.R., Preisendoerfer, P., Swaminathan, A. and Wiedenmayer, G. (1993) Brewery and Brauerei: The Organizational Ecology of Brewing. *Organization Studies*, **14**, 155-188. https://doi.org/10.1177/017084069301400201

[23] Knights, D. and Morgan, G. (1993) Organization Theory and Consumption in a Post-Modern Era. *Organization Studies*, **14**, 211-234.
https://doi.org/10.1177/017084069301400203

[24] Grover, V., Teng, J.T.C. and Fiedler, K.D. (1993) Information Technology Enabled Business Process Redesign: An Integrated Planning Framework. *Omega*, **21**, 433-447.

[25] Staw, B.M., Sutton, R.I. and Pelled, L.H. (1994) Employee Positive Emotion and Favorable Outcomes at the Workplace. *Organization Science*, **5**, 51-71.
https://doi.org/10.1287/orsc.5.1.51

[26] Podsakoff, P.M., Mackenzie, S.B. and Bommer, W.H. (1996) Transformational Leader Behaviors and Substitutes for Leadership as Determinants of Employee Satisfaction, Commitment, Trust, and Organizational Citizenship Behaviors. *Journal of Management*, **22**, 259-298.

[27] Salancik, G.R. and Pfeffer, J. (1978) Uncertainty, Secrecy, and the Choice of Similar Others. *Social Psychology*, **41**, 246-255. https://doi.org/10.2307/3033561

[28] Peteraf, M. (1997) Resource-Based and Evolutionary Theories of the Firm: Towards

a Synthesis by Cynthia A. Montgomery. *Review of Industrial Organization*, **3**, 465-467.

[29] Miller, D. and Shamsie, J. (1999) Strategic Responses to Three Kinds of Uncertainty: Product Line Simplicity at the Hollywood Film Studios. *Journal of Management*, **25**, 97-116. https://doi.org/10.1177/014920639902500105

[30] Hillman, A.J., Cannella, A.A. and Paetzold, R.L. (2000) The Resource Dependence Role of Corporate Directors: Strategic Adaptation of Board Composition in Response to Environmental Change. *Journal of Management Studies*, **37**, 235-256. https://doi.org/10.1111/1467-6486.00179

[31] Zahra, S.A., Ireland, R.D. and Hitt, M.A. (2000) International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance. *Academy of Management Journal*, **43**, 925-950. https://doi.org/10.2307/1556420

[32] Child, J. (2002) A Configurational Analysis of International Joint Ventures. *Organization Studies*, **23**, 781-815. https://doi.org/10.1177/0170840602235005

[33] Peng, M.W. and Luo, Y. (2000) Managerial Ties and Firm Performance in a Transition Economy: The Nature of a Micro-Macro Link. *Academy of Management Journal*, **43**, 486-501.

[34] Luo, Y. and Peng, M.W. (1999) Learning to Compete in a Transition Economy: Experience, Environment, and Performance. *Journal of International Business Studies*, **30**, 269-295.

[35] Brown, A.D. and Coupland, C. (2005) Sounds of Silence: Graduate Trainees, Hegemony and Resistance. *Organization Studies*, **26**, 1049-1069. https://doi.org/10.1177/0170840605053540

[36] Brief, A.P., Dietz, J., Cohen, R.R., Pugh, S.D. and Vaslow, J.B. (2000) Just Doing Business: Modern Racism and Obedience to Authority as Explanations for Employment Discrimination. *Organizational Behavior and Human Decision Processes*, **81**, 72-97.

[37] Lawrence, T.B., Hardy, C. and Phillips, N. (2002) Institutional Effects of Interorganizational Collaboration: The Emergence of Proto-Institutions. *Academy of Management Journal*, **45**, 281-290. https://doi.org/10.2307/3069297

[38] Hallett, T. and Ventresca, M.J. (2006) Inhabited Institutions: Social Interactions and Organizational Forms in Gouldner's *Patterns of Industrial Bureaucracy*. *Theory & Society*, **35**, 213-236. https://doi.org/10.1007/s11186-006-9003-z

[39] Burgers, J.H., Jansen, J.J.P., Van den Bosch, F.A.J. and Volberda, H.W. (2009) Structural Differentiation and Corporate Venturing: The Moderating Role of Formal and Informal Integration Mechanisms. *Journal of Business Venturing*, **24**, 206-220.

[40] Gibson, C.B. and Birkinshaw, J. (2004) The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity. *Academy of Management Journal*, **47**, 209-226. https://doi.org/10.2307/20159573

[41] Edmondson, A.C. (2008) The Competitive Imperative of Learning. *Harvard Business Review*, **86**, 60-67.

[42] Shepherd, D.A. and Cardon, M.S. (2009) Negative Emotional Reactions to Project Failure and the Self-Compassion to Learn from the Experience. *Journal of Management Studies*, **46**, 923-949. https://doi.org/10.1111/j.1467-6486.2009.00821.x

[43] Chandler, A.D. (1977) The Visible Hand: The Managerial Revolution in American Business. Harvard University Press, Cambridge, 123-126.

[44] Todorova, G. and Durisin, B. (2007) Absorptive Capacity: Valuing a Reconceptua-

lization. *Academy of Management Review*, **32**, 774-786.
https://doi.org/10.5465/AMR.2007.25275513

[45] Volberda, H.W., Foss, N.J. and Lyles, M.A. (2010) Perspective—Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organization Science*, **21**, 931-951. https://doi.org/10.1287/orsc.1090.0503

[46] Ireland, R.D., Hitt, M.A. and Sirmon, D.G. (2009) A Model of Strategic Entrepreneurship: The Construct and its Dimensions. *Journal of Management*, **29**, 963-989.

[47] Shepherd, D.A., Wiklund, J. and Haynie, J.M. (2009) Moving Forward: Balancing the Financial and Emotional Costs of Business Failure. *Journal of Business Venturing*, **24**, 134-148.

[48] Avolio, B.J., Avey, J.B. and Quisenberry, D. (2010) Estimating Return on Leadership Development Investment. *The Leadership Quarterly*, **21**, 633-644.