

THE STATE OF THE SCIENCE OF ACCOUNTABILITY THEORY RELATED TO LEADERSHIP STUDIES: PERSPECTIVE ON THE INVISIBLE NETWORK OF KNOWLEDGE

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Abstract- To explore the intellectual structure of accountability related to leadership research in the last decade, the most crucial publications, most influential scholars, as well as the correlations among the publications of these scholars were identified. In this study, bibliometric techniques (citation analysis and cocitation analysis) were used to analyze citation relationships, showing trends and patterns of leadership literature. By analyzing 42,760 citations of 515 articles regarding leadership published from 2004 to 2013 obtained from the Science Citation Index and Social Sciences Citation Index databases, a knowledge network of leadership studies was mapped. The mapping results can be used to help identify the direction of leadership research and provide a valuable tool for researchers to access the literature in this field.

Keywords - Bibliometric technique, accountability, leadership, timeline

I. INTRODUCTION

In this paper, the problems arising from the struggle to establish leadership were empirically investigated by examining the literature by using citation data obtained from database. A brief review of similar bibliometric studies is presented to introduce the approach, accompanied by a description of the data. The principal investigation was a data mining technology that was performed to determine the latent structure underlying the leadership literature.

Citation are essential research tools for evaluating the core knowledge of an academic field [1], [2]. A few studies using bibliometrics to examine leadership research have been published [3], [4], but few have reported citation analysis in the leadership field. Therefore, conducting this study fills the gap in leadership research with accountability by providing a detailed evaluation of applying citation to leadership research.

The aim of this study was to provide leadership researchers with a unique map to improve their understanding of leadership-related publications about the accountability theory and to provide a systematic and objective map of various themes and concepts in the development of the leadership field. The linkages among publications were also identified and their statuses, positions, and contributions to the development of the leadership field were verified. Citation analysis were the principal methods used, and research timeline was performed to identify the knowledge generation underlying the leadership literature with accountability theory. To explore the main changes in leadership research in the last decade, the data was divided into two stages: the first 5 years and the second 5 years. The changes in the key research topics and their implications for the evolution of leadership research during the past decade are also discussed.

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II. STUDIES OF ACADEMIC LITERATURE

Various techniques can be used to examine a body of literature. The most frequently used method is the simple literature review whereby a highly subjective approach is used to structure earlier studies [5]. Objective and quantitative techniques have recently become popular as the online databases available are increasing. Bibliometrics, the application of mathematical and statistical techniques to the study of publications and professional communications, is an essential approach in multiple fields [6]. Two of the most indispensable and widely used tools are citation and cocitation analysis. Citation analysis is based on the assumption that authors cite papers they consider crucial for the development of their research, and that heavily cited articles are more likely to have exerted a substantial influence on the subject than those that are less frequently cited [7]. This tool was popularized by the work of Garfield [8], who applied citation analysis to preexisting indexes, the Science Citation Index (SCI) and Social Sciences Citation Index (SSCI).

2.1 Citation Analysis

The citation analysis method is mainly used to analyze the reference phenomenon or objects of journals, papers, and authors, and to explore the relationship between the sources of literature and citations. Implementing this method can help researchers understand the current state of development of certain disciplines, the literature usage characteristics in these disciplines, the correlations among disciplines in the literature, and future trends of research.

2.1 Research Timeline

The objective of this paper is to trace the evolution of the intellectual structure of the talent management field. The historical timeline of research concepts, themes and methods will provide a clear overview of the leadership and accountability research path in the period from 2004 to 2013.

III.METHODOLOGY

In this study, the SCI and SSCI were used for analysis. SCI and SSCI are widely used databases that include articles published in more than 8000 of the leading scholarly journals worldwide [9]. Arguments that other online databases might also be used for such analysis exist; however, using SCI and SSCI provided the most comprehensive and most acceptable databases of leadership publications. To collect the data, a keyword was used to identify the relevant article titles and abstracts in the SCI and SSCI. Using “accountability” and “leadership” as the keyword, 515 journal articles were collected, and those articles cited 42,760 publications as references.

The citation data used in this study included journal articles, authors, publication journals, publication dates, and cited references. Based on the objective of this study, the intellectual structure of accountability and leadership between 2004 and 2013 was explored. This period was chosen because contemporary leadership studies conducted during the last decade represent the most up-to-date and likely the most crucial research. Citation and cocitation analysis were the main methods used in this study. By using citation and cocitation analysis, three stages were assumed in this research, each of which required different approaches for examining the development of leadership studies. First, the databases were identified as the sources of leadership publications. Data collection and analysis techniques were then designed to collect information regarding research topics, authors, and journals on leadership research.

IV.RESULTS

4.1 Citation Analysis

To identify the key publications and scholars that have established the foundation of leadership research, citation data were tabulated for each of the 515 source documents and 42,760 references by using Microsoft Excel. The citation analysis produced remarkable background statistics, as shown in the following tables. Table I lists the most cited journals in the digital divide area during the previous decade, among which the *Public Administration Review*, *LANCET*, and *Educational Administration Quarterly* were the three most cited journals. The general pattern of the most cited journals showed that leadership research features journals that specifically discuss management, and education.

Accountability related studies published in high cited journals

In the last 10 to 15 years, however, the concept of accountability has become fashionable not just in expanding circles of political scientists and economists but among the broader community of scholars and practitioners concerned with such diverse areas as administration, development,

business ethics, governance, international organizations, policy networks, democratization, civil society, and welfare state reform [10]. Within the study of organizations, accountability has been linked to numerous phenomena including judgment and decision-making, performance appraisal, negotiation, human resource management, influence tactics, risk taking, safety, and motivation [11]. This study try to figure out the relationship between accountability and leadership theory.

Table 1: The most frequently cited journals: 2003-2012

Journal	Total Citation	Journal	Total Citation
Public Administration Review	236	Phi Delta Kappan	75
LANCET	206	American Educational Research Journal	74
Educational Administration Quarterly	195	American Political Science Review	74
Academy of Management Review	132	Journal of Business Ethics	74
Academy of Management Journal	123	Public Administration	73
Leadership Quarterly	120	Harvard Business Review	72
Educational Evaluation and Policy Analysis	118	Journal of Educational Administration	67
JAMA-Journal of the American Medical Association	118	Journal of Personality and Social Psychology	63
Teachers College Record	110	Health Affairs	62
Academic Medicine	103	School Effectiveness and School Improvement	59
Administrative Science Quarterly	103	American Journal of Political Science	58
Journal of Applied Psychology	102	Educational Leadership	56
Journal of Public Administration Research and Theory	89	ANN M AM ED RES ASS	55
New England Journal of Medicine	87	Educational Research	55
British Medical Journal	78	Journal of Management	53

Frequency distribution of publications by business and management journals

Table 2 lists the number of articles on the accountability published in various business and management journals in the period 2004–2013. We reviewed 263 articles published in 39 leading business and management journals; among them the highest number of articles was found in OBHDP, the journal which promoted the accountability in its early days. OBHDP published 33 of the 179 articles that appeared in business and management journals in the first 5 years (2004–2008). The next most popular journal was HBR, which carried 25 accountability articles (11.03%). Certain other journals such as OST, JAP, HRs, JMS, and JBR also featured articles on the accountability. Table 8 also shows that several journals published no articles on the accountability. Several factors would affect this trend, including editorial policy and quality of submissions received.

Table 2 further depicts that during the period under study, some leading journals published no articles on the accountability. These journals were CMR, DS, HRMJ, I&M,

IJOPM, JIBS, MISQE, OR, ORL, SDR. Our review of the editorial policies of these outlets indicates that although these journals encouraged submissions from any relevant area and with no constraint on research methodologies, authors might have avoided the journals for possible publication. There was little or no track record of their publishing leadership studies relating to the accountability that predominantly deployed surveys and qualitative case studies.

Table 2: Frequency distribution of articles on the accountability published in business and management journals

Journal acronyms	Journal	2004-2008	2009-2013	Total	%
OBHDP	Organizational Behavior and Human Decision Processes	33	12	45	17.11%
HBR	Harvard Business Review	25	4	29	11.03%
OST	Organization Studies	8	6	14	5.32%
JAP	Journal of Applied Psychology	9	5	14	5.32%
HRs	Human Relations	9	2	11	4.18%
JMS	Journal of Management Studies	7	4	11	4.18%
JBR	Journal of Business Research	3	7	10	3.80%
OMEGA	OMEGA International Journal of Management Science	6	4	10	3.80%
ASQ	British Journal of Management	4	4	8	3.04%
HRM	Human Resource Management	5	3	8	3.04%
JOM	Journal of Management	6	2	8	3.04%
AMR	Administrative Science Quarterly	5	2	7	2.66%
LRP	Long Range Planning	7	0	7	2.66%
OS	Organization Science	4	3	7	2.66%
AMLE	Academy of Management Review	4	1	5	1.90%
IJHRM	International Journal of Human Resource Management	4	1	5	1.90%
LQ	Leadership Quarterly	2	3	5	1.90%
MITSMR	MIT Sloan Management Review	3	2	5	1.90%
MSC	Management Science	5	0	5	1.90%
AMJ	Academy of Management Journal	3	1	4	1.52%
BJM	California Management Review	4	0	4	1.52%
JOB	Journal of Organizational Behavior	2	2	4	1.52%
JPIM	Journal of Product Innovation Management	2	2	4	1.52%
TAMP	Academy of Management Perspectives	3	1	4	1.52%
HRMR	Human Resource Management Review	2	1	3	1.14%
JBV	Journal of Business Venturing	2	1	3	1.14%
MIR	Management International Review	2	1	3	1.14%
EJIN	European Journal of Information Systems	1	1	2	0.76%
JMIS	Journal of Management Information Systems	0	2	2	0.76%
JOPM	Journal of Operations Management	0	2	2	0.76%
MISQ	MIS Quarterly	2	0	2	0.76%

R&DM	R & D Management Research in	2	0	2	0.76%
ROB	Organizational Behavior	1	1	2	0.76%
SCM	Supply Chain Management: An International Journal	1	1	2	0.76%
SMJ	Strategic Management Journal	1	1	2	0.76%
AJM	Australian Journal of Management	1	0	1	0.38%
JWB	Journal of World Business	0	1	1	0.38%
SO	Strategic Organization	0	1	1	0.38%
TJB	Journal of Business	1	0	1	0.38%
CMR	Decision Sciences Academy of	0	0	0	0.00%
DS	Management Learning and Education	0	0	0	0.00%
HRMJ	Human Resource Management Journal	0	0	0	0.00%
I&M	Information and Management	0	0	0	0.00%
IJOPM	International Journal of Operations and Production Management	0	0	0	0.00%
JIBS	Journal of International Business Studies	0	0	0	0.00%
MISQE	MIS Quarterly Executive: A Research Journal Dedicated to Improving Practice	0	0	0	0.00%
OR	Operations Research	0	0	0	0.00%
ORL	Operations Research Letters	0	0	0	0.00%
SDR	System Dynamics Review	0	0	0	0.00%
	Total	179	84	263	100.00%

Frequency distribution of articles by leadership journals

Table 3 presents the frequency distribution of articles on the accountability published by 6 leadership journals. During the one decades under study, 40 of the 78 articles (51.28%) on the subject were published in the second half (2009–2013). Overall, the highest number of articles (35) appeared in Educational Leadership, one of the premier journals in leadership, followed by Educational Management Administration & Leadership (25). A sizeable number of articles appeared in other journals: experimental research and surveys in Nonprofit Management & Leadership (11), Leadership Quarterly (5), Leadership (1), and Leadership & Organization Journal (1). However, education and educational research must be used in interpreting the frequency data since some journals such as Educational Leadership and Educational Management Administration & Leadership publish more issues per year than others.

The most influential documents and authors

The most cited and most influential documents by the most influential scholars were then identified using their total counts of citations within the selected journal articles. As shown in Table 4, the most cited accountability and leadership publication between 2004 and 2013 was “The Discovery of Grounded Theory” by Glaser and Strauss, followed by “Qualitative data analysis” by Miles, and

Table 3 Accountability studies published in leadership journals

Journal	2004-2008	2009-2013	Total	%
Educational Leadership	35	0	35	44.87%
Educational Management Administration & Leadership	0	25	25	32.05%
Nonprofit Management & Leadership	0	11	11	14.10%
Leadership Quarterly	2	3	5	6.41%
Leadership	1	0	1	1.28%
Leadership & Organization Journal	0	1	1	1.28%
Total	38	40	78	100.00%

Table 4: Highly cited documents: 2004-2013

Full Citation Index For Document	Total Citations
Glaser B., 1967, DISCOVERY GROUNDED T	18
Miles M. B., 1994, QUALITATIVE DATA ANA	16
Burns JM, 1978, LEADERSHIP	15
Yin R.K., 1994, CASE STUDY RES DESIG	15
Bryk A. S., 2002, TRUST SCH CORE RESOU	14
Spillane J. P., 2001, ED RES, V30, P23	14
O'Day JA, 2002, HARVARD EDUC REV, V72, P293	13
Strauss A., 1998, BASICS QUALITATIVE R	13
Yin RK, 2003, CASE STUDY RES DESIG	12
Ball SJ, 2003, J EDUC POLICY, V18, P215	11
Lincoln Y. S., 1985, NATURALISTIC INQUIRY	11
WEICK KE, 1976, ADMIN SCI QUART, V21, P1	11
Fullan M., 2001, LEADING CULTURE CHAN	10
Hallinger P, 1996, EDUC ADMIN QUART, V32, P5	10
Hallinger P, 1998, SCH EFF SCH IMPROV, V9, P157	10
Leithwood K., 2004, LEADERSHIP INFLUENCE	10
Lerner JS, 1999, PSYCHOL BULL, V125, P255	9
Spillane J., 2006, DISTRIBUTED LEADERSH	9
Bass BM, 1985, LEADERSHIP PERFORMAN	8
Cuban L., 1988, MANAGERIAL IMPERATIV	8
Diamond JB, 2004, TEACH COLL REC, V106, P1145	8
Lortie D., 1975, SCHOOLTEACHER SOCIOL	8
McNeil L., 2000, CONTRADICTIONS SCH R	8
Merriam S. B., 1998, QUALITATIVE RES CASE	8
Osborne David, 1992, REINVENTING GOVT ENT	8
Senge P. M., 1990, 5 DISCIPLINE ART PRA	8
Spillane JP, 2004, J CURRICULUM STUD, V36, P3	8
Strauss A., 1990, BASICS QUALITATIVE R	8
Frank KA, 2004, SOCIOL EDUC, V77, P148	7
JENSEN MC, 1976, J FINANC ECON, V3, P305	7

When the journal articles and books were combined, the six most cited scholars between 2004 and 2013 were Spillane, Leithwood, Fullan, Hallinger, Carver, and Coburn (Table 5). These scholars exerted the greatest influence on the development of the digital divide area and thus collectively define this field. Their contributions represent the focus of the main research in the field and thus provide an indication of the popularity of certain leadership topics as well as their historical value.

Table 5: Highly Cited Authors: 2004-2013

Author	Frequency	Author	Frequency
Spillane JP	83	Moynihan DP	21
Leithwood K.	79	Weick KE	21
Henry K	49	Daniels N	20
Fullan M.	36	Miles M. B.	20
Hallinger P	32	Murphy J.	20
Carver J	29	World Bank	20
Coburn CE	27	Glaser B. G.	19
Strauss A.	23	Ball SJ	18
Bryk A. S.	22	Hood C	18
Hargreaves A.	22	Murphy J	18

4.2 Research Timeline

The objective of this paper was to trace the evolution of the intellectual structure of the accountability related to leadership field. The historical timeline of research concepts, themes, and methods provides a clear overview of the leadership research path in the period from 2004 to 2013 (Table. 6). Dramatic changes are affecting the world of work; therefore, the main topics in leadership studies are also changing. Since Accountability is understood as an implicit or explicit expectation that one may be called on to justify one’s actions to others, which tends to motivate reflection on one’s own decisions and behaviors [12]. Common topics related to accountability theory provide a better vertically integrated hierarchies to networks of specialists, managers, and the change in the paradigm of decision making and providing instructions for followers. In addition, the definition of work itself is evolving; the idea of a job as a fixed collection of tasks is disappearing, and there is a new emphasis on constantly evolving practices to fulfill the ever-increasing demands of employees. However, leading this change rather than simply following it requires a break from traditional practices and a focus on rigorous research that addresses emerging trends. Several new and old topics and keywords demonstrate the view of leaders as a dynamic entity in constant interaction with their environments, as shown in Tables 6. In other words, modern managers must adapt to the substantial changes that are occurring regarding precludes, management, and service values.

Table 6: Historical timeline of accountability and leadership: 2004-2013

Timeline	Citations	Type	Title
1967	18	B	Glaser B. G., DISCOVERY GROUNDED T
1975	8	B	Lortie D., SCHOOLTEACHER SOCIOL
1976	11	J	WEICK KE, ADMIN SCI QUART, V21, P1
1976	7	J	JENSEN MC, J FINANC ECON, V3, P305
1978	15	B	Burns JM, LEADERSHIP
1985	11	B	Lincoln Y. S., NATURALISTIC INQUIRY
1985	8	B	Bass BM, LEADERSHIP PERFORMAN
1988	8	B	Cuban L., MANAGERIAL IMPERATIV
1990	8	B	Senge P. M., 5 DISCIPLINE ART PRA
1990	8	B	Strauss A., BASICS QUALITATIVE R
1992	8	B	Osborne David, REINVENTING GOVT ENT
1994	16	B	Miles M. B., QUALITATIVE DATA ANA
1994	15	B	Yin R.K., CASE STUDY RES DESIG
1996	10	J	Hallinger P, EDUC ADMIN QUART, V32, P5
1998	13	B	Strauss A., BASICS QUALITATIVE R
1998	10	J	Hallinger P, SCH EFF SCH IMPROV, V9, P157
1998	8	B	Merriam S. B., QUALITATIVE RES CASE
1999	9	J	Lerner JS, PSYCHOL BULL, V125, P255
2000	8	B	McNeil L., CONTRADICTIONS SCH R
2001	14	J	Spillane J. P., ED RES, V30, P23
2001	10	B	Fullan M., LEADING CULTURE CHAN
2002	14	B	Bryk A. S., TRUST SCH CORE RESOU
2002	13	J	O'Day JA, HARVARD EDUC REV, V72, P293
2003	12	B	Yin RK, CASE STUDY RES DESIG
2003	11	J	Ball SJ, J EDUC POLICY, V18, P215
2004	10	B	Leithwood K., LEADERSHIP INFLUENCE
2004	8	J	Diamond JB, TEACH COLL REC, V106, P1145
2004	8	J	Spillane JP, J CURRICULUM STUD, V36, P3
2004	7	J	Frank KA, SOCIOL EDUC, V77, P148
2006	9	B	Spillane J., DISTRIBUTED LEADERSH

V. CONCLUSION

Leadership was extensively studied during the past decade. In this study, leadership research was investigated using citation and co citation data published in the SCI and SSCI between 2004 and 2013. The Invisible Network of Knowledge of accountability theory related to leadership studies indicated that the field now has its own literature and that it has developed into a legitimate academic field. The publication of leadership-specific journals, such as the *Public Administration Review*, *LANCET*, and *Educational Administration Quarterly*, indicates that leadership has gained the status required for an independent research field. Because the leadership field is still new and the analysis has shown that it has an evolving structure, it is believed that accountability theory related to leadership publication outlets will gain the popularity and prestige that is required to become a more prominent academic field when the current paradigms and key research themes in leadership studies, how they interrelate, and what they represent have been identified. As the number of scholars and resources contributing to leadership increases, the academic environment conducive for the cross-fertilization of research ideas will be formed and leadership as a research field will gain more momentum for further development.

VI. STUDY LIMITATION

Although attention was paid to quality at all stages, this perspective on the Invisible Network of Knowledge review is limited by the search words employed, the databases accessed, the frame and method of searching for literature and the limited empirical research on accountability related to leadership.

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