

STRUCTURE OF THE ORGANIZATIONAL AMBIDEXTERITY FIELD: QUALITATIVE LITERATURE REVIEW, ARTICLE CO-CITATION ANALYSIS, AND SCIENCE MAPPING

STRUKTURA ORGANIZACIJSKOG POLJA AMBIDEKSTRIJE: KVALITATIVNI PREGLED LITERATURE, ANALIZA KOCITIRANJA U ZNANSTVENIM RADOVIMA I MAPIRANJE ZNANOSTI

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Abstract

There are a growing number of studies that argue the importance of organizational ambidexterity for the sustained competitive advantage of firms. However, ambidexterity scholars have applied different definitions, conceptualizations and measures in their discussions of numerous significant and complex organizational phenomena and this has led to the divergence of this construct. The purpose of this article is to apply a bibliometric analysis, combined with the qualitative literature review, to reconcile the mixed results of prior studies and attain a more comprehensive understanding on how the ambidexterity field grew and evolved during the last 24 years. To map the intellectual structure of the ambidexterity fields, i.e. the structural pattern of citing behaviour among various scholars, we performed a citation and co-citation analysis. Our findings highlight the intellectual base articles in the ambidexterity field and synthesize the various insights on the conceptualizations of ambidexterity in extant research, which may be used as a starting point to understanding the origins of the field.

Sažetak

U porastu je broj znanstvenih radova koji analiziraju značaj organizacijske ambidekstrije u odnosu na održivu konkurentsku prednost poduzeća. Znanstvenici koji se bave ambidekstrijom koriste različite definicije, konceptualizacije i mjerenja u svojim radovima i diskusijama posvećenim mnogobrojnim značajnim i složenim organizacijskim fenomenima, što je dovelo do divergencije u poimanju polja ambidekstrije. Cilj je ovog rada primjena bibliometrijske analize u kombinaciji s kvalitativnim pregledom literature da bi se uskladili heterogeni rezultati iz prethodnih znanstvenih istraživanja i postiglo šire razumijevanje rasta i razvitka polja ambidekstrije u posljednje 24 godine. U svrhu mapiranja intelektualne strukture polja ambidekstrije, tj. strukturnog obrasca citiranja različitih znanstvenika, provedena je analiza citiranja i kocitiranja. Rezultati analize ukazuju na intelektualnu bazu znanstvenih radova u polju ambidekstrije i isto tako sintetiziraju različita polazišta konceptualizacije ambidekstrije u postojećim istraživanjima te se oni mogu koristiti kao polazište za razumijevanje polja ambidekstrije.

Introduction

Researchers are using the notion of ambidexterity, the ability of humans to use both hands

with equal skill, as a metaphor for organizations that are dexterous, i.e. capable of both exploiting and exploring /1/. Researchers have

used this notion to explain and discuss numerous significant and complex organizational phenomena. It is widely recognized in the various fields of strategic management (Lubatkin, Simsek, Ling, & Veiga, 2006; Smith & Tushman, 2005), innovation and technology management (He & Wong, 2004), organizational learning (Levinthal & March, 1993) and organizational behavior (Gibson & Birkinshaw, 2004). Moreover, the importance of ambidexterity to practice is evident in the many prescriptions offered for organizational performance improvement and survival (Gibson & Birkinshaw, 2004). Although this notion has stimulated a lot of research in different areas, research on organizational ambidexterity remains a diverse, fragmented and still poorly understood phenomenon (Li, Vanhaverbeke, & Schoenmakers, 2008; Simsek, 2009). However, in the last two decades, organizational ambidexterity has become increasingly recognized. An ambidextrous organization rests on the premise that a firm is able to simultaneously pursue two (often) conflicting domains, i.e. exploration and exploitation /2/. March's seminal exploration-exploitation framework (1991) has triggered substantial research and found support in different scholars /3/, /4/. Although the interest in ambidexterity has increased over the years, there is still ambiguity regarding the theoretical nature of the construct /5/. This has contributed to inconsistency in the interpretation of ambidexterity across, and within, different studies. The variety of definitions, level of analysis and measurements have led to different conceptualizations which hamper the comparison and replication of findings /6/, /7/. Therefore, we have used science mapping based on bibliometrics to produce a quantitative literature review that results in the identification of key patterns of closely connected articles on the topic of ambidexterity. By identifying central researchers and turning-point articles, we help to unify various conceptualizations of ambidexterity. Moreover, identification of the intellectual structure within the ambidexterity field (and closely interrelated exploration-exploitation field) has been scarcely discussed in the present literature. This pa-

per aims to provide a clearer distinction within the field of ambidexterity by conducting an in-depth bibliographic review. To capture the evolution of knowledge in ambidexterity (and distinct dimensions, i.e. exploration and exploitation), and the structural connection pattern of articles in different journals, we carried out the following two-step analysis. First, we applied co-citation analysis, i.e. a technique that uses co-citations of article pairs as the variable that indicates their distances from each other /8/. Second, we applied science mapping, i.e. a technique that uses direct citations among primary authors to find representations of intellectual connections within the field /9/, /10/. This enabled us to identify key turning-point articles and knowledge base that had the highest impact on the ambidexterity discussion within the academic literature. In sum, by understanding the citation patterns (incorporating all the citations that are included in the ISI Web of Science) and using articles as the units of analysis, we were able to trace the evolution of the intellectual structure of the ambidexterity field for the period from 1991 to 2015.

Literature Review

To deal with the uncertainty and ambiguity of its external environment, a firm needs to be ambidextrous. The concept of organizational ambidexterity is defined as the ability of an organization to pursue differing, and often competing, strategic acts /11/, /12/. Many researchers in general agree with this original definition. Unfortunately, confusion is still present regarding the precise definition of exploration and exploitation, and hence ambidexterity. Therefore the ambiguity and vagueness in using concepts such as ambidexterity, exploration and exploitation is still present in the literature /13/. Previous empirical research has investigated the effect of the exploration-exploitation dichotomy on performance from various perspectives, the implication being that both strategic acts may lead to different innovation performance outcomes (He & Wong, 2004; Katila & Ahuja, 2002; Lavie, Stettner, & Tushman, 2010). For example, one

group of scholars has observed the positive performance effects of balance (He & Wong, 2004; Jansen, Van Den Bosch, & Volberda, 2006; Lin, Yang, & Demirkan, 2007), while another group has found negative effects (Lavie, Kang, & Rosenkopf, 2011). Gupta, Smith, and Shalley /14/ present four main issues which researchers need to carefully address in their research of exploration and exploitation: issues of continuity or orthogonality, issues of ambidexterity and punctuated equilibrium and duality versus specialization. In the following section, we explain the issues of ambidexterity and punctuated equilibrium. Consensus exists in the management literature regarding organizational ambidexterity. This relates to a need for balance between exploration and exploitation, because it is important for a firm's survival (in the short and long run) and sustained competitive advantage. However, it is still unclear how this balance can be achieved. In the literature there are two mechanisms which help organizations to achieve this balance: ambidexterity /15/ (Benner & Tushman, 2003) and punctuated equilibrium /16/, /17/, /18/. Ambidexterity is defined as the simultaneous pursuit of both exploration and exploitation via loosely coupled and differentiated subunits or individuals, each of which specializes in either exploration or exploitation, while punctuated equilibrium refers to temporal rather than organizational differentiation and suggests that cycling through periods of exploration and exploitation is a more viable approach than a simultaneous pursuit of the two /19/. Despite a growing body of literature in favour of the balanced approach, introduced by March /20/, followed by Tushman and O'Reilly /21/ and favoured by

many, the different conceptualizations and measurements of exploration and exploitation are still yielding inconsistent findings /22/. Balance is a term frequently used by various scholars in both streams, yet there is no universally accepted definition of balance. On the one side, studies that *separately* (independently) measure exploration and exploitation use different operationalizations for balance, such as adding exploration and exploitation, measuring the relative difference between the two, or calculating their multiplicative interactions /23/, /24/. This approach rests on arguments of combined organizational perspective. *Combined organizational perspective* builds on the premise that balance occurs when firms maintain high levels of both exploration and exploitation /25/. Ambidexterity happens only in situations where firms maintain a level of both (and additionally high levels of both should be maximized to achieve a high level of organizational ambidexterity) /26/, /27/. One group of scholars conceptualized punctuated equilibrium as *balanced perspective of organizational ambidexterity* /28/, /29/. Balanced perspective suggests considering exploration–exploitation as a continuum and advises the use of a single variable for capturing exploration–exploitation (Lavie & Rosenkopf, 2006; Lin et al., 2007; Uotila, Maula, Keil, & Zahra, 2009). It refers to organizational ambidexterity as a midpoint, or an optimal point, on a continuum with exploration at one end and exploitation at the other /30/. Yet, there is no compelling rationale for preferring one measure over the other /31/. As shown in Table 1 there are different conceptualizations of ambidexterity.

Table 1: Trade-offs in ambidexterity field

Author (year)	Study type	Study design	Level of analysis	Exploration-exploitation duality	Measurement of OA*	Measurement of performance
He and Wong (2004)	Empirical	Large-scale survey of 206 manufacturing firms	Firm	Exploratory innovations vs. exploitative innovations	Balanced and combined	Objective measure; sales growth
Jansen et al. (2006)	Empirical	Large scale survey of multi-unit firm	Business unit	Exploratory innovations vs. exploitative innovations	Combined	Objective measure; profitability
Gibson and Birkinshaw (2004)	Empirical	Interviews and surveys in 41 business units	Business unit	Alignment vs. adaptability	Combined	Perceptual measure of the business unit
Im and Rai (2008)	Empirical	Survey of company in logistics industry	Interorganizational level	Exploratory vs. exploitative knowledge sharing	Combined	Perceptual relationship of firm performance
Lin et al. (2007)	Empirical and simulation	Archival study of 95 companies from five U.S. industries	Firm and alliance	Exploratory vs. exploitative alliances	Balanced	Objective measure; growth and profitability
Rothaermel and Deeds (2004)	Empirical	Archival study of 325 biotechnological companies	Firm	Exploratory vs. exploitative alliances	Balanced	New product development

Methods

To provide a thorough examination of the development of the ambidexterity field (and interrelated exploration-exploitation field), we conducted a citation/co-citation analysis of published papers over the last 24 years. Research on exploration-exploitation is more developed and mature, while related ambidexterity has steadily been growing over the last 10 years, so we conducted a bibliometric co-citation analysis in order to gain more information about the domain and scope of the ambidexterity field.

Generating the Bibliometric Data

The period from 1991 to 2015 was chosen for the examined timeframe. We started our quest

for theoretical foundations of ambidexterity by conducting a Web of Science search for the term “ambidexterity” and the following related keywords based on insights from qualitative research: “exploration” or “exploitation”. We used the aforementioned timeframe from the Social Science Citation Index database of ISIs Web of Science. The Social Science Citation Index database is one of the most frequently used for bibliometric studies. There are several categories that can be used for filtering relevant publications. Therefore, we refined by areas: management or business, and limited the search to reviews and articles. We obtained a database containing 732 units of literature. After additional filtering as explained above, we reduced the number of articles to 369 units. The sample of primary articles (citations of these primary articles are

used in the analyses) thus includes 369 documents from the ISI Web of Science from the period 1991–2015 that fit the keywords relevant for ambidexterity field. An average citation per article is 20.99. In sum, they were later cited by others 7,746 times. Figure 2 demonstrates how the primary articles were published in terms of the actual publication dates within the period, while Figure 1 provides the longitudinal distribution of citations of those articles. This information is helpful in terms of detecting the change of the interest for the topic over a period of more than 24 years.

Distribution of published papers over the years and the longitudinal distribution of citations of those publications are presented in Figure 1 and Figure 2. Figure 1 presents how distribution of citations changed over the years. Moreover, it indicates the influence of these citations on the overall field. Because of

Figure 1: Number of citations of selected ambidexterity papers

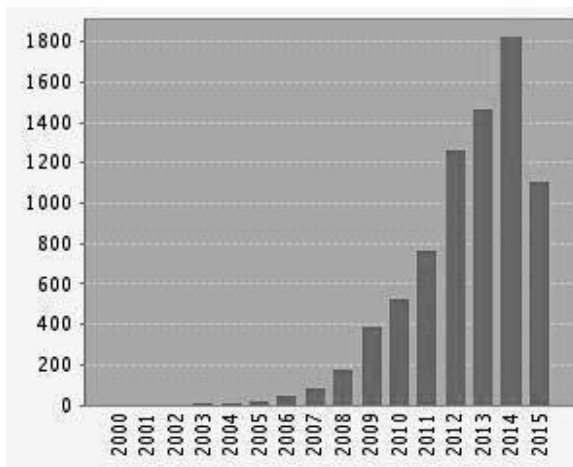
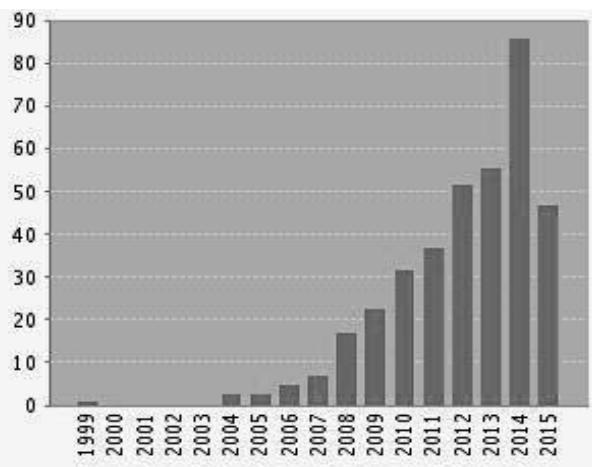


Figure 1: Number of citations of selected ambidexterity papers

For journals that publish research on ambidexterity we extracted the ranking of records by source title from the Web of Science. The majority of the scientific papers in the area of ambidexterity research were published in leading journals in the field of management

the relatively small amount of papers published in the period 1991-2000, the graphic presentation in Figure 2 only provides data from 2000 to 2015, although the analysis was conducted for the period from 1991 to 2015. Results obtained from the descriptive analysis are a sort of a “guide” in assessing the popularity of the topic. Moreover, it provides us with information about how interest in the field has changed. After March’s seminal paper in the exploration-exploitation field published in 1991, the first paper that catches the interest of the searcher was published in 1996. However, the breakthrough of the field began in 2004 (Gibson and Birkinshaw’s paper). The field reached its high point in 2013, with over 85 published papers during that year. The influence of these papers grew steadily towards the end of 2013. Interestingly, the highest number of primary papers was in 2014.

Figure 2: Distribution of selected primary articles per year during 1991-2015



research. We used the criterion that there should be at least two records of publications in the journal. The distribution of the publications through the journals (source titles) is presented in Table 2.

Table 2: Records of Web of Science ambidexterity search by source titles field

Field: Source Titles	Record Count	% of 369
Organization Science	21	5.91
Journal of Management Studies	14	3.79
International Journal of Technology Management	13	3.52
Journal of Product Innovation Management	12	3.25
Management Decision	12	3.25
Strategic Management Journal	11	2.98
R&D Management	10	2.71
International Journal of Human Management	8	2.16
Long Range Planning	8	2.16
Technovation	8	2.16

Note: Top 10 results (min. records 2), sorted by record count

The analysis showed that almost 6% of all publications from the ambidexterity field were published in *Organization Science*, followed by the *Journal of Management Studies* with a 4% share. We can conclude that ambidexterity as a topic catches the interest of researchers and leads to growing interest in different fields of studies. To sum up, there has been a proliferation of interest on the topic of ambidexterity in different fields of studies. It is present across different fields, from strategic management, innovation and technology management, to organizational learning and adaptation.

Co-citation analysis

After gaining some preliminary information about the 369 papers selected from the field, we needed to obtain more information about the structure of the field. We used one of the most validated bibliometric methods, i.e. co-citation analysis. A basic premise of co-citation analysis is that it is more likely that the content of two items is related if they are cited together (Zupic & Čater, 2014). Co-citation analysis uses co-citation counts to develop a measure of similarity between documents,

authors, or journals (McCain, 1990; Zupic & Čater, 2014). Depending on the unit of the analysis, different types of co-citation analysis, document, author or journal co-citation analysis, can be used (McCain, 1990; 1991; White & McCain, 1998). Co-citation analysis was performed with Bibexcel software for citation analysis (Persson, Danell, & Schneider, 2009) and Pajek software for network analysis (Batagelj & Mrvar, 1998).

The top cited references in the field can be seen in Table 3. The most prominent is the article by March (1991). He is by far the most often cited (254 times in primary articles during 1991-2015). March (1991) is followed by Gibson and Birkinshaw (2004). Gibson and Birkinshaw (2004) investigated the antecedents and consequences of contextual ambidexterity, i.e. an approach that refers to key decision makers' "behavioural capacity to simultaneously demonstrate alignment and adaptability" (Gibson & Birkinshaw, 2004: 209). The third best result was a paper by He and Wong (2004). He and Wong (2004) analysed the joint influence of exploratory and exploitative strategy on performance.

Table 3: Top cited references in the field

Number of citations	Data on the paper (First author, year, volume, first page, journal)
254	March J, 1991, V2, P71, Organ Sci
239	Gibson, C, 2004, V47, P209, Acad Manage J
188	He Z, 2004, V15, P484, Organ Sci
175	Tushman M, 1996, V38, P8, Calif Manage Rev
165	Raisch S, 2008, V34, P375, J Manage
159	Levinthal D, 1993, V14, P95, Strategic Manage J
157	Benner M, 2003, V28, P238, Acad Manage J
150	Gupta A, 2006, V49, p693, Acad Manage J
111	Raisch S, 2009, V20, P685, Organ Sci
107	Smith W, 2005, V16, P522, Organ Sci

The next table lists articles that were most often cited together. The premise is the following: if two articles are repeatedly cited together, this means they must be closely related to each other (Almahendra & Ambos, 2015). Ar-

ticles by Gibson and Birkinshaw (2004) and March (1991) were most often co-cited together in 1991-2015 – 187 times. The top-four list of co-citations analysis is presented in Table 4.

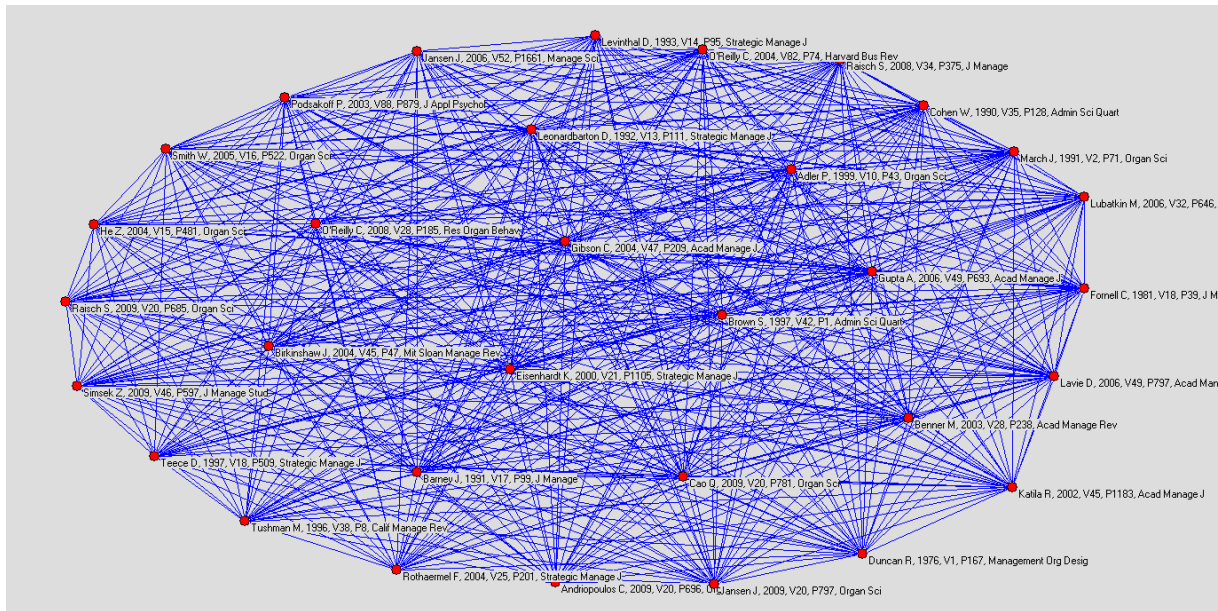
Table 4: Top co-citations in the ambidexterity field

Number of co-citations	Citation 1	Citation 1
187	(C. Gibson, 2004)	(J. March, 1991)
159	(Z. He, 2004)	(J. March, 1991)
153	(C. Gibson, 2004)	(Z. He, 2004)
141	(C. Gibson, 2004)	(M. Tushman, 1996)

Analysis of the co-citation network reveals theoretical foundations on which the ambidexterity field has been built. Centrally positioned in the network is the work of Gibson and Birkinshaw (2004), March (1991), He and Wong (2004) and Tushman and O'Reilly (1996). These studies are the most important for the development of the ambidexterity field in the examined period from 1991 to 2015. As foundational studies they are closely related to other groups of scholars. Four papers (co-cited

in different combinations with one another) in Table 4 comprise the origins of the ambidexterity field. Primarily, the field is driven by resource-based theory, and originates from the behavioural and evolutionary theory of the firm. Co-citation analysis enabled us to create a network of all related citations in the field, which is presented in Figure 3.

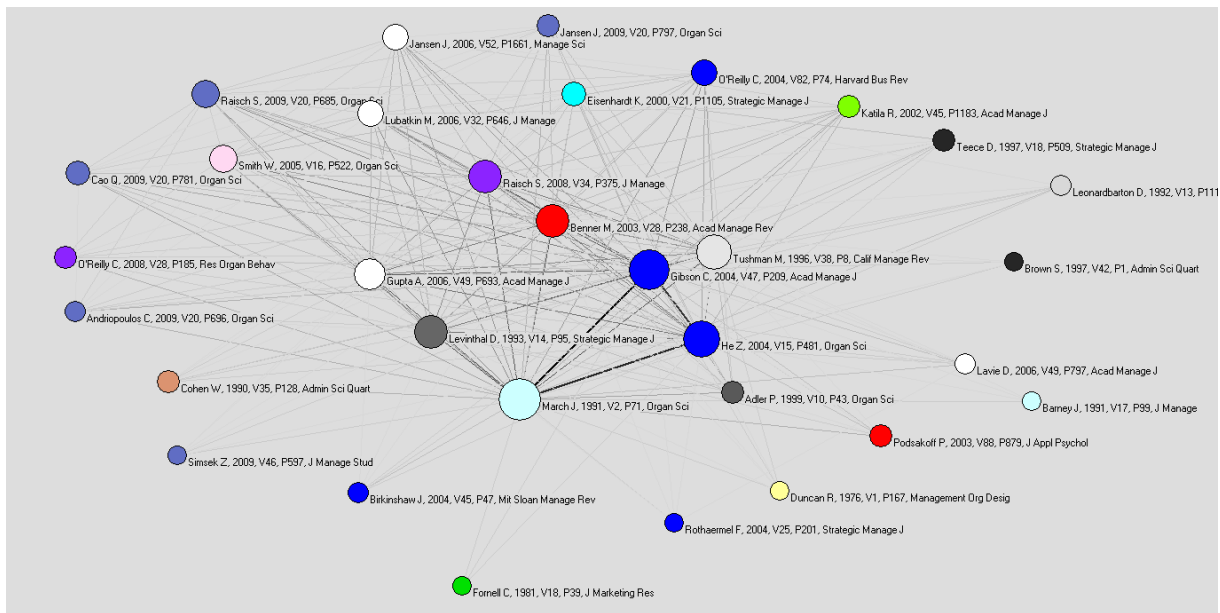
Figure 3: The whole co-citation network of the ambidexterity field (Kamada-Kawai view)



Most papers examined in this study are closely related to each other. They create a dense cluster with Gibson and Birkinshaw (2004) at the centre of the ambidexterity intellectual space. Furthermore, to provide a clearer picture of the field, lines with values lower than 30 were removed, citations were segregated by colours, and vertices were added (size of nodes represents number of citations). Nodes represent authors, e.g. the size of March's, Gibson's and He and Wong's nodes are the largest

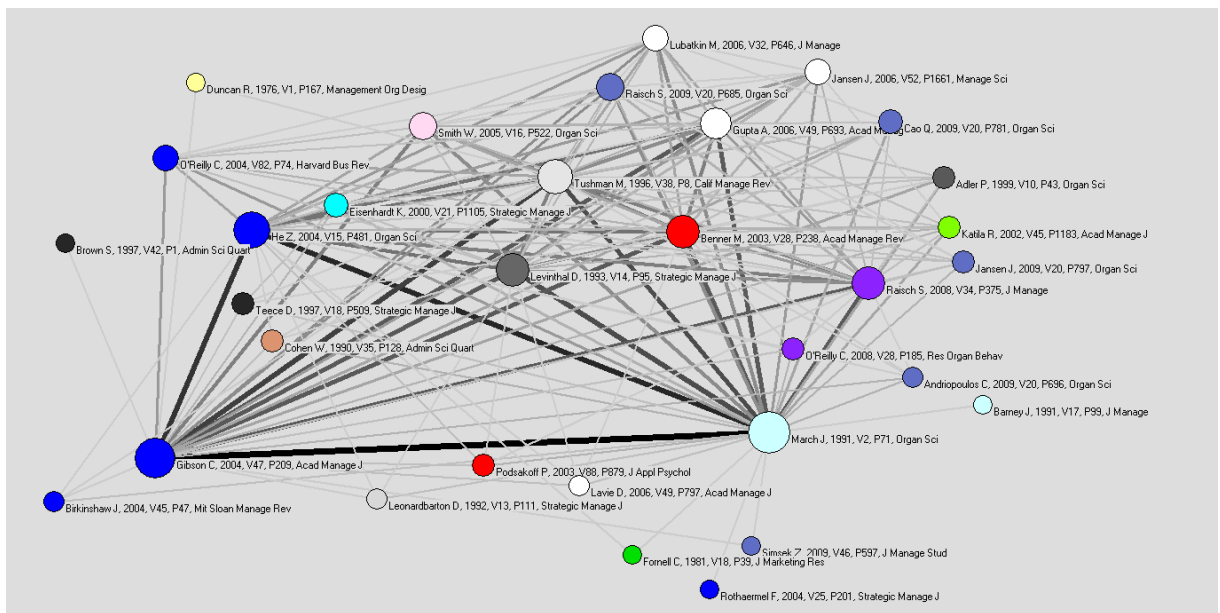
which means they have the most cited articles. The colours of the nodes are grouped by publication year. Thus, e.g. blue-coloured nodes represent publications that were published in 2004. The thickness of the line between the two nodes is also very important. This thickness of the line between the two nodes indicates the strength of the co-citation. It can be noticed that the network in Figure 4 has several cuts, i.e. groups, while the main context is the centre.

Figure 4: Ambidexterity co-citation network



Note: cut-off = 30

Figure 5: Ambidexterity co-citation network



Note: cut-off = 40

Co-citation structure analysis reveals the most influential articles in the topic area. Intellectual base articles can be easily detected by the thickness of the lines. In Figure 5, lines with values lower than 40 have been removed to make the picture more intuitive and clearer. Based on this criterion, core papers on the ambidexterity topic can be easily identified. In addition to Gibson and Birkinshaw (2004), we have identified four other intellectual base

articles; March (1991), He and Wong (2004), Tushman and O'Reilly (1996) and Levinthal and March (1993).

Discussions and Conclusion

In management research the topic of organizational ambidexterity has become increasingly popular in the last two decades. It owes its popularity to the argument that organizational

ambidexterity is important for firm performance and sustained competitive advantage /32/, /33/. However, prior organizational ambidexterity studies have been conducted in a variety of methodological settings and industries. In turn, the empirical results have been mixed. Hence, our purpose in this paper was to systematically examine organizational ambidexterity and to systematize the mixed results of prior research. By conducting a bibliometric analysis of prior studies on organizational ambidexterity, we were able to analyse the overall organizational ambidexterity field, and identify key turning-point articles and the knowledge base that had the highest impact on the discussion of ambidexterity within the academic literature. Overall, we found that organizational ambidexterity was largely influenced by four intellectual base articles. Nevertheless, the results also indicated a presence of several overlapping theoretical perspectives.

The origin of the ambidexterity field is not completely understood, and thus far previous research has not generated an overarching theory /34/. Recently, O'Reilly and Tushman /35/ used ambidexterity as a metaphor for the Rorschach test, i.e. a test in which one sees whatever one wants. Thus, by understanding the citation patterns and using articles as units of analysis, we were able to trace the evolution of the intellectual structure of the ambidexterity field. Without doubt, this will provide a critical platform for further investigation of the phenomenon of the organizational ambidexterity.

Reviewing the various papers on the topic of ambidexterity, we summarize our main findings. From the analysis we noted there are two main forms of ambidexterity at the firm/organizational level. The first view, called *structural ambidexterity*, was originally proposed by Duncan /36/ (in Figures 4 and 5, the yellow-coloured node represents Duncan's publication that was published in 1976). Duncan suggested the concept of "dual structures", i.e. structural separation (into distinct units) between different types of activities. This view was afterwards successfully adopt-

ed by Tushman and O'Reilly /37/ in their seminal work on ambidexterity. In Figure 5 we can see that Duncan's work is connected to the work of Tushman and O'Reilly /38/. It also has a connection to Gibson & Birkinshaw's work /39/ which will be explained below. In 2004, Gibson and Birkinshaw introduced another form of organizational ambidexterity, i.e. *contextual ambidexterity*, and defined it as "behavioural capacity to simultaneously demonstrate alignment and adaptability across an entire business unit". Instead of creating dual structural arrangements, leaders need to ensure a *context* characterized by a combination of stretch, discipline, support and trust /40/. Creating a business unit context which enables individuals to make their own judgements on dividing their own time between the demands for exploration and exploitation is the basic premise of contextual ambidexterity. Although contextual differs from structural, they should be view as complementary /41/. Thus, both views, i.e. contextual or structural, fit with the *combined perspective* introduced and conceptualized by another group of scholars /42/.

Combining the insights from the literature review and the co-citation analysis, we can derive that firms equally favour structural and contextual solutions of organizational ambidexterity. Both views are equally compelling, as well as theoretically and empirically validated in a variety of industries and methodological settings. The same rationale exists in measuring the ambidexterity construct. As Lavie et al. /43/ note, there is no compelling rationale for preferring one measure over the other. For instance, He and Wong /44/ and Gibson and Birkinshaw /45/ used a multiplicative score between exploration and exploitation, while Lubatkin, Simsek, Ling, & Veiga /46/ used an absolute difference score between exploration and exploitation. Junni and colleagues /47/ in their meta-analysis argued that most scholars have a strong preference for a specific approach, yet different measurements of organisational ambidexterity are not providing consistent results.

In an attempt to define the constituent elements of ambidexterity, scholars applied am-

bidexterity in different fields, following different theoretical streams. Thus, from the bibliometric analysis followed by literature review we can link the theoretical streams to the main views of ambidexterity (i.e. structural or contextual). Raisch and Birkinshaw /48/ point out several theoretical streams related to ambidexterity, i.e. organizational learning, technological innovation, organizational adaptation, strategic management and organizational design. From our analysis we can notice that different literature streams, including organizational learning, technological innovation, organizational adaptation, strategic management, and organizational design, prevail in research on organizational ambidexterity (see Table 2). For instance, organization theory scholars such as Duncan (1976), Smith and Tushman (2005) and Tushman and O'Reilly (1996) follow the organizational design perspective. Although we did not obtain an in-depth analysis of the exact number of papers that explicitly follow a structural or a contextual view, we can obtain a structural pattern from the co-citations analysis in the ambidexterity field (see Table 4). In a large portion of papers the theoretical literature stream and/or ambidexterity view is not clearly stated. From our literature review and co-citation analysis we can notice (see Table 4) that mixed theoretical perspectives and ambidexterity views exist. For instance, He and Wong /49/ follow both the organizational learning and technological innovation perspective, but it is unclear whether they follow a structural or a contextual view. Confusion deepened when we took into account the measurement of ambidexterity, i.e. combined or balanced.

There are several key results that can be drawn from bibliometric analysis. First, the origins of the ambidexterity field are investigated by identifying the intellectual base articles. Second, the ambidexterity field has become a popular topic in the last 15 years, mostly because of its versatility. The negative side of this story is an outpouring number of studies (more or less empirical ones with mixed results) which deepen the ambiguity related to the field. By identifying intellectual base articles, our study also reveals a linkage between

ambidexterity and different theories, such as the RBV of a firm, evolutionary theory and behaviour theory.

Furthermore, our examination of the notion of organisational ambidexterity revealed two important issues in extant literature. First, we found no single clear-cut conceptualization of the organisational ambidexterity construct. While one view indicates context, i.e. business units, which encourages trust and discipline and where individuals can make their own choices in dividing time allocated for exploitative- or explorative-oriented activities, another view embraces structurally ambidextrous design, where one unit is responsible for exploration-oriented activities and another for exploitation-oriented activities. Both are strategically integrated by leaders, i.e. managers.

The core message of this article is that organizational ambidexterity in prior studies is to a large extent influenced by specific methodological choices adopted by the researcher. Furthermore, mixed empirical evidence yields inconsistent results because studies on organizational ambidexterity have been conducted using different measurements and research designs. Taken together, our findings have several important implications for future research. Related to our findings of the identification of the knowledge base that had the highest impact on the ambidexterity discussion, it is vital for future research to include other major social sciences databases such as EBSCO Business Source Premier, and ScienceDirect and, in that way, include other important and useful publications within the ambidexterity field.

Notes

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