“Review of scientific literature on BPM concept in social sciences”

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REVIEW OF SCIENTIFIC LITERATURE ON BPM CONCEPT IN SOCIAL SCIENCES

Abstract

The business process management (BPM) approach enhances organizational competitiveness and facilitates digital business transformations. Successful implementation of BPM necessitates a comprehensive understanding of its conceptual foundations and developmental trajectory. This study aims to investigate BPM studies in social sciences, unraveling the evolution and main pillars of the BPM concept. The research methodology comprises a bibliometric analysis of 95 articles indexed in the Web of Science Core Collection from 1997 to 2023 using the Biblioshiny App, followed by a narrative literature review of the most highly cited publications.

The results unveil a notable shift in BPM research to information technologies, reflecting an interdisciplinary nature of the BPM concept (going beyond management itself). However, the analysis indicates that BPM research in social sciences tends to be specialized and localized, characterized by limited collaboration among scholars, research teams, institutions, and countries. The study identifies a diverse range of relevant research topics encompassing the maturity concept, business process, process orientation, process performance, success factors, and data and knowledge management. Process modeling and improvement emerge as central but underexplored areas, while strategic management, complexity theory, and organizational processes display declining thematic trends. The most frequently cited research papers primarily focus on enriching BPM practices through integrating digital tools and innovations, emphasizing the role of organizational culture in facilitating BPM implementation and investigating the relationship between BPM and supply chain integration and performance.

Keywords business process management, bibliometrics, digital transformation, social sciences, Web of Science

JEL Classification Y50, M10, M15, L20

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INTRODUCTION

Business process management (BPM) is a systematic and thorough approach to designing, analyzing, implementing, monitoring, and continuously enhancing business processes inside and outside an organization. In today's complex and competitive business environment, incorporating BPM practices has become essential for organizations to stay ahead (Szelągowski & Berniak-Woźny, 2022). By transforming management mechanisms, structures, and approaches, adopting BPM practices can improve an organization's overall performance (Dumas et al., 2018). Moreover, BPM plays a vital role in digital business transformations (Stjepić et al., 2020; Melnyk et al., 2022). Organizations that successfully implement BPM practices demonstrate greater competitiveness and flexibility in adapting to changing external conditions and fulfilling consumer demands. This universal approach can be applied across various industries and even be employed to manage community development. However, the successful implementation of BPM necessitates a clear understanding of its conceptual foundations and modern trends.

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The concept of business process management has a relatively extensive history of formation and development, spanning over three decades. It has undergone significant changes in its fundamental ideas and principles throughout its evolution. The past few decades, characterized by remarkable advancements in information technologies, have significantly affected the content and practices of BPM (Del Giudice et al., 2018; Lizano-Mora et al., 2021). Recent changes resulting from further advancements in information technologies, the emergence of big data, and the widespread adoption of artificial intelligence (AI) transform management practices and the design of organizations, thus redefining the understanding of business process management. Given these circumstances, exploring the foundations and changes of the BPM concept within the domain of management science becomes essential and relevant. Investigating the origins, historical development, and emerging trends can enrich the field of management science and guide practitioners in making informed decisions regarding BPM implementation and improvement.

1. LITERATURE REVIEW

With the exponential growth of scientific knowledge and the increasing number of research publications, bibliometric reviews have become desirable for revealing the state-of-the-art in specific research fields. Employing bibliometric techniques provides a reliable means of identifying publication trends, conceptual foundations, and their transformation within a research field (Donthu et al., 2021). Additionally, bibliometric studies allow identifying influential research that warrants further exploration. In the past decade, more than 1,000 bibliometric studies have been published annually (Donthu et al., 2021). However, few such reviews exist concerning the BPM framework (Lizano-Mora et al., 2021).

It is worth noting that while the overall number of BPM bibliometric reviews is relatively small, their frequency has increased significantly in recent years, indicating a growing awareness of the need to understand insights in the totality of accumulated knowledge on business process management.

The earliest study by van der Aalst (2013) utilized systematic review techniques to explore the application of BPM techniques in modeling and improving business processes. The study structured existing BPM research and analyzed them within a historical context. The findings revealed growing attention toward BPM over the last decade, the main research areas, and practical aspects of the BPM application, including "process modeling languages, process enactment infrastructures, process model analysis, process mining, process flexibility, and reuse."

Iritani et al. (2015) examined articles indexed in the Web of Science from 1994 to 2014 using the search query "Business Process Management." Scholars identified the interdisciplinary nature of BPM, tracing its origins to fields such as business process reengineering, total quality management, and information systems. The study identified two primary schools of research, one concentrating on organizational management and the other on BPM technologies. It was found that most publications focused on lifecycle and organizational management, while BPM practices emphasized process modeling and implementation.

Ensslin et al. (2017) focused on performance evaluation and strategic aspects. They included the term "BPM" in the search query along with the terms above, significantly limiting the publications collection. They found that the "International Journal of Operations & Production Management" was the most relevant source, which differed from previous reviews. The study also revealed that the authors with the most publications primarily researched performance evaluation and strategy rather than BPM.

Klun and Trkman (2018) analyzed English papers on business processes, modeling, reengineering, and optimization using citation and co-citation analysis techniques. They focused on publications indexed in the Web of Science from 1990 onwards. The study identified several clusters of scholarly work, including practice-oriented business process reengineering, workflow management, BPM concepts (which covered modeling and changes in business processes, modeling techniques, and methodologies), methods and information technology of business process modeling, and BPM success factors.

Lizano-Mora et al. (2021) reviewed business process management (BPM) publications found in various databases such as Web of Science, Scopus, EBSCO, and Google Scholar from 2000 to 2020. The authors linked the growth of BPM publications to the emergence of various technologies, such as cloud computing, the Internet of Things (IoT), and artificial intelligence (AI), during specific periods (2009, 2012, 2016, and 2018–2020). They identified primary sources of publications, influential authors, and two clusters: management and IT. The authors noted that BPM is still in development, with many publications being single-authored and collaboration being limited and scattered. They emphasized the need for future research to focus on management, frameworks, and performance to "demystify BPM" and eliminate its narrow perception as merely an improved management practice and business information system.

Muff et al. (2021) employed bibliometric analysis and Latent Dirichlet Analysis to investigate the metadata and content of publications from conferences and workshops focused on BPM. The results revealed the significant influence of Germany and the Netherlands in the research field. The authors identified key research topics such as process mining and event logs, business process models and BPMN, services and messaging, and other related areas. Process mining is a promising direction for further BPM research.

Numerous literature reviews have been conducted on business process management, each examining different facets of this critical organizational practice. These include comparisons to lean management and the potential for simultaneous implementation (Maldonado et al., 2020), methods for effective business process modeling (Entringer et al., 2021), sustainability considerations such as green BPM (Couckuyt & Van Looy, 2020), process mining within the context of BPM (Zerbino et al., 2021), and the role of ambidexterity in BPM (Helbin & Van Looy, 2021). These diverse perspectives offer valuable insights into the complexities of BPM and highlight its significance as a management approach.

To summarize, existing review publications on business process management vary in analysis period, publication time, search query, and database. However, they share commonalities. Iritani et al. (2015), Lizano-Mora et al. (2021), and Muff et al. (2021) utilized a broad search term ("business process management") with certain limitations on publication types and databases. The findings suggest that business process management is a multidisciplinary field with two primary research areas: management and information systems. However, no reviews are available that examine the conceptualization of BPM from a social sciences perspective.

Thus, this paper aims to explore the research landscape and conceptual foundations of Business Process Management (BPM) in social sciences, employing quantitative and qualitative review methods.

2. METHOD

For data collection, the Web of Science Core Collection database, known for its social sciences and humanities coverage, was used as the primary source of bibliographic data. The database's built-in analytical and refinement tools were employed for data collection and refinement. A search query was developed to collect relevant documents on the BPM concept while minimizing "information noise": TS=("business process management" AND (concept OR theory OR framework)), limited to articles. The search yielded 723 articles as of March 21, 2023.

For data refinement, the "Analyze results" tool was used to visualize the distribution of research by Web of Science categories. The results were further refined by filtering for Citation topics meso (selecting only "Management" and "Operations Research & Management Science"), Web of Science Categories (limited to only "Management," "Business," "Economics," and "Operations Research Management Science"), and Research Areas (selected only "Business Economics" and "Operations Research Management Science"). Only English-language articles were included, resulting in a final sample of 123 articles.

For data screening, a thorough review of the collected papers, including titles, keywords, and abstracts, was conducted to ensure their relevance

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Table 1. Lists of stop words and synonyms uploaded to Biblioshiny App

Stop words (excluded)	List of synonyms and word forms (reduced to a single expression marked in bold)
Research; study; paper; purpose; survey; case study; framework; findings; literature; results; proposed; studies; authors; based; article; conducted; identified; related; bpm; business; management; literature review; review; chapter	**bpm**, business process management, business process management (bpm), business processes management
	process, processes
	organization, organization, organisation, organizations
	approach, approaches
	concept, concepts
	method, methods
	system, systems
	company, companies
	implication, implications
	practice, practices
	operation, operations

to the study's objectives. Based on this review, 28 papers were excluded for reasons such as lacking an abstract and keywords (one paper) or being inconsistent with the research request (27 papers focusing on individual cases of BPM implementation or using BPM as a context for researching other issues). The final dataset (Koblianska et al., 2023) comprises 95 articles.

The dataset was pre-screened for data cleaning to identify words that might distort the content, including search query words, synonyms, and derived word forms. A list of stop words and synonyms was compiled (Table 1) and applied during the analysis to address this issue.

The study utilized the Biblioshiny App Ver. 4.1 launched through the Bibliometrix R package in RStudio software (Aria & Cuccurullo, 2017; R-project, n.d.; RStudio, n.d.) for bibliometric analysis. The analysis involved quantitative methods and science mapping techniques, including publication counts, citation and co-citation analysis, bibliographic coupling, co-author and co-word analysis, clustering, and visualization. Co-word analysis was applied to keywords and abstracts to reveal the research content. Lists of stop words and synonyms (Table 1) were uploaded to the Biblioshiny App, and the built-in option of stemming was also applied to improve the accuracy of the analysis. Clustering was performed using the Walktrap algorithm, which identifies closely connected nodes and maximizes the network's modularity by iteratively identifying groups.

Next, a narrative literature review method was employed to fully characterize the content of BPM research and identify the main issues under investigation. Analysis, synthesis, generalization, and grouping methods were used to review the most cited publications, which were identified based on the number of annual citations.

3. RESULTS

Before proceeding with the analysis of the final collection, it is essential to comment on the distribution of documents obtained from the initial search query before applying filters based on fields of science. The majority of the articles retrieved (558) were classified under the field of computer science, followed by electrical engineering (46) and information and library science (42). In comparison, the number of articles categorized under management, business, and operations research in management science was 198, 125, and 64, respectively. These findings suggest that the topic of business process management, which originated within the management discipline and was closely associated with operational and strategic management, is undergoing a transformation and acquiring new dimensions. This evolution can be attributed to the increasing digitalization of business processes and the broader application of digital tools to enhance organizational and management practices. Consequently, BPM is gaining prominence as a relevant and applied research topic in information technology and computer science.

Table 2 describes the collection analyzed. The earliest articles date back to 1997, indicating a temporal span of research in the field of business process management (BPM). An average annual increase

in publications is 4.32% suggesting a sustained research interest in the field. One notable aspect is the relatively high proportion of single-authored publications, accounting for approximately 16% of the total. Another collection characteristic is the relatively small average research group size, with fewer than three persons per group. Compared to other fields, such as research on the food system's sustainability, which exhibits a larger average research group size of 4.55 people (Kalachevska et al., 2022), the BPM research community appears to favor smaller research teams. The level of international cooperation within the collection is relatively low, at only 20%.

Table 2. Descriptive data for the bibliographic collection

Source: Koblianska et al. (2023).

Description	Value
Timespan	1997:2023
Sources (Journals, Books, etc.)	35
Documents	95
Annual Growth Rate %	4,32
Document Average Age	6,56
Average citations per doc	16,14
References	4823
Keywords Plus (ID)	218
Author's Keywords (DE)	320
Authors	232
Authors of single-authored docs	13
Single-authored docs	15
Co-Authors per Doc	2,72
International co-authorships %	20
article	88
article; book chapter	7

Over the past 15 years, there has been a steady increase in the number of studies on the BPM concept, as depicted in Figure 1. The graph provides insight into periods of heightened attention to the BPM concept. Notably, in 2010, the number of publications on BPM increased significantly, accounting for five documents twice as high as in previous years. Similarly, in 2017, the number of publications doubled (8) compared to the preceding periods, followed by the continuous growth of publication activity until 2019. However, there is a decline in scientific interest in BPM in social sciences, with only six articles published in 2022, which is lower than in 2017.

The Business Process Management Journal emerges as the primary platform for disseminating research findings in the field of BPM, with 38 articles (40% of the collection). Other sources, such as the Information Systems and E-Business Management Journal, have five publications each, while 35 other sources have contributed fewer documents to the collection. Regarding citation impact, the Business Process Management Journal also stands out with 579 citations, indicating its significance in the field. Other sources with notable citation counts include MIS Quarterly (136 citations) and Harvard Business Review (114 citations).

Figure 2 presents a three-field plot illustrating the most significant institutions, authors, and main topics. It is noteworthy to mention specific

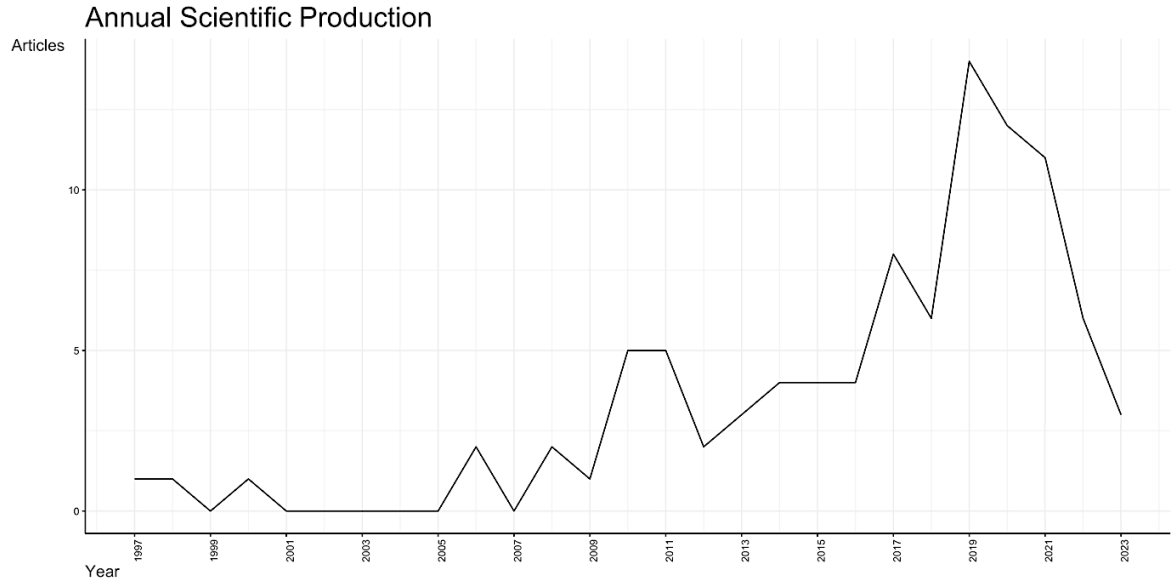

Figure 1. Annual scientific production

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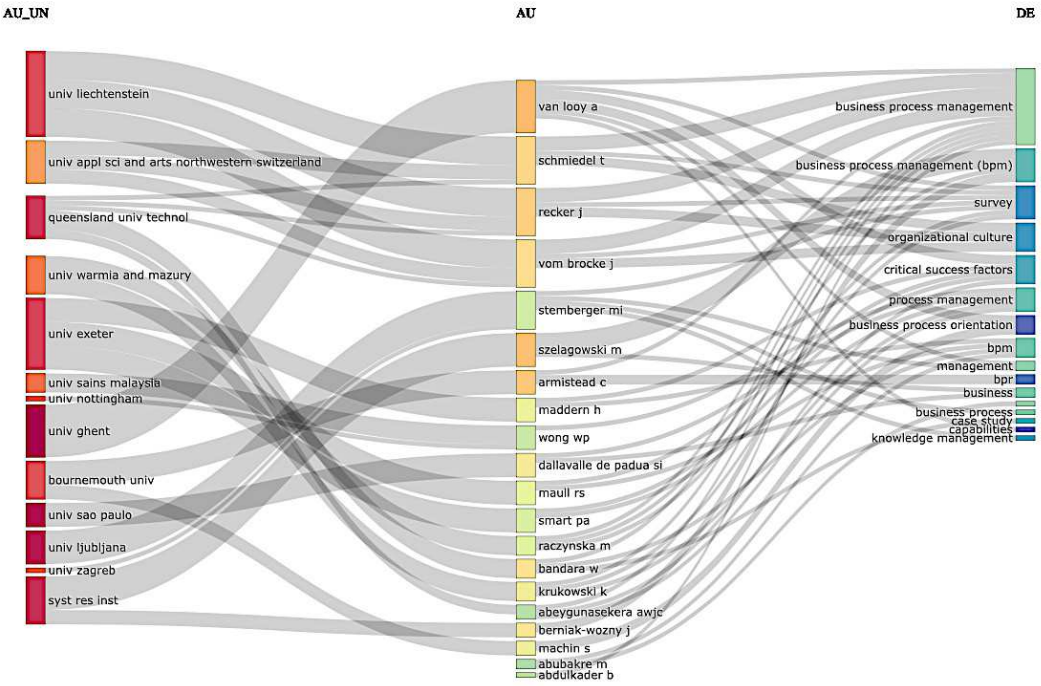


Figure 2. Three-field plot: institutions (AU_UN) – authors (AU) – author's keywords (DE)

aspects studied within the BPM framework and the authors' notable contributions. For example, Schmiedel, Recker, and vom Brocke focus their research on organizational culture, while van Looy, Maddern, Maull, Smart, and Abeygunasekera explore critical success factors for BPM implementation. Van Looy and Machin investigate business process orientation, and van Looy also emphasizes capabilities for BPM. Stemberger's research centers around knowledge management as a part of BPM. These authors are among the most influential contributors, and Figure 3 illustrates their productivity during the studied period.

The top five institutions contributing to BPM concept research are Ghent University in Belgium, the University of São Paulo in Brazil, the University of Ljubljana in Slovenia, Turin University in Italy, and the Systems Research Institute of the Polish Academy of Sciences in Poland.

The map of researchers' collaboration (Figure 4a) highlights the presence of various research groups in the field of BPM. Among these groups, the teams of Recker, vom Brocke and Schmiedel, and Maull, Maddern, and Smart are noted for their high productivity and close collaboration. The

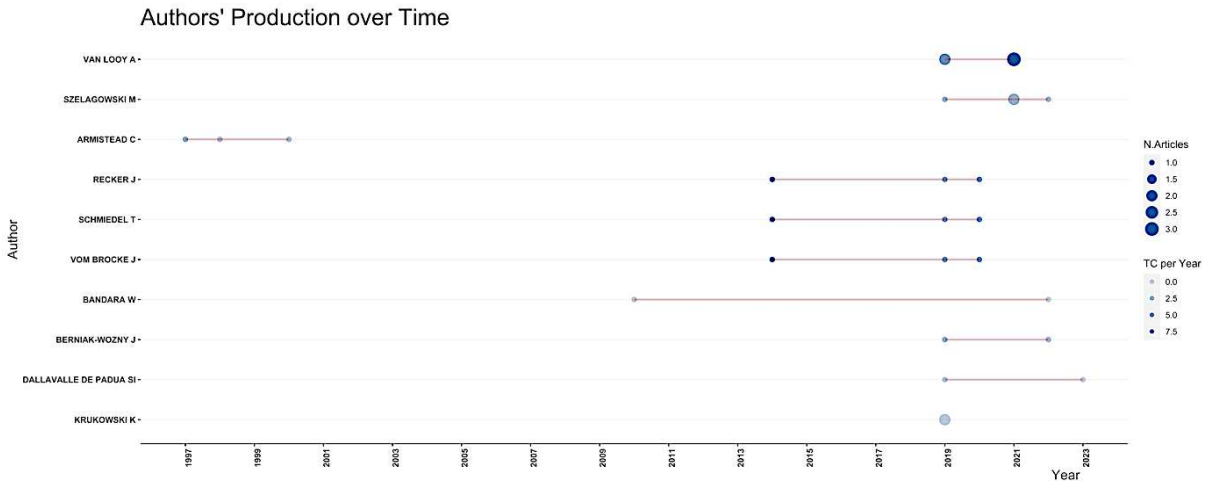
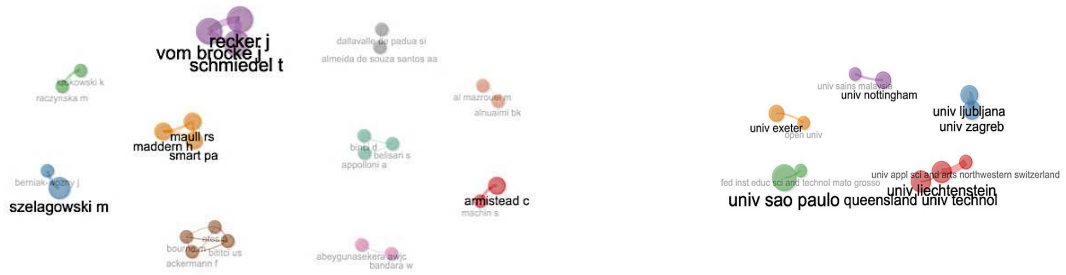


Figure 3. Authors' production over time



a) Authors' collaboration network map

b) Institutions' collaboration network map

Figure 4. Social structures: authors and institutions collaboration

institutions' collaboration map (Figure 4b) shows only five clusters of inter-institutional collaboration that do not interact with each other.

Regarding countries' productivity and collaboration, Brazil holds the top spot in the number of published papers, with 34 papers. Close behind is the UK with 31 papers, Italy with 29, Germany with 22, and Poland with 20. Scholars from the UK began their research on the BPM concept one of the earliest, and led in the number of publications until 2022. In 2011, German and Italian scientists began their BPM studies, while Brazilian and Polish researchers started theirs in 2014 and 2018, respectively. The international collaboration rate varies across these countries, with Italy having the highest rate at 0.57, followed by the UK at 0.25 and Brazil at 0.09. Research in Germany and Poland is only conducted within national research groups.

Examining co-citation and bibliographic coupling provides insights into established schools of thought. A network map of papers' co-citation, as shown in Figure 5, reveals two distinct groups of studies. The first group centers around Trkman (2010), highlighted in red in the figure and containing 29 local citations. The second group is clustered around Hammer (2007), containing 23 local citations. Upon closer examination of these publications, it becomes apparent that the first group primarily focuses on critical success factors in BPM implementation, based on integrating contingency, "dynamic capabilities," and "task-technology fit" ideas. Trkman (2010) proposes a model to ensure coherence between the business environment and processes, which is crucial for achieving BPM success. In contrast, Hammer's Process and Enterprise Maturity Model (PEMM) concept serves as the primary reference for publications in the second group. This model outlines the factors determin-

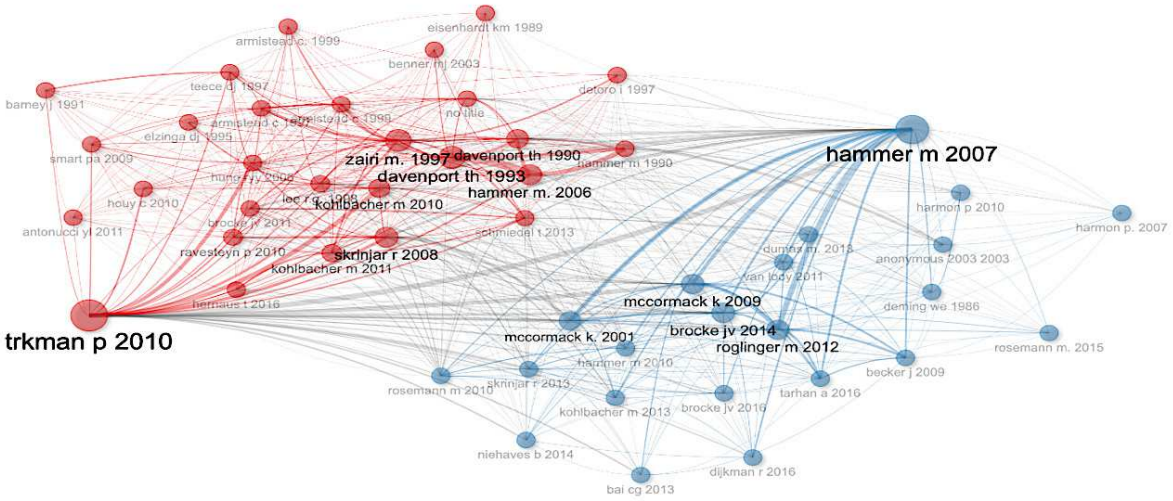


Figure 5. Documents' co-citation network map

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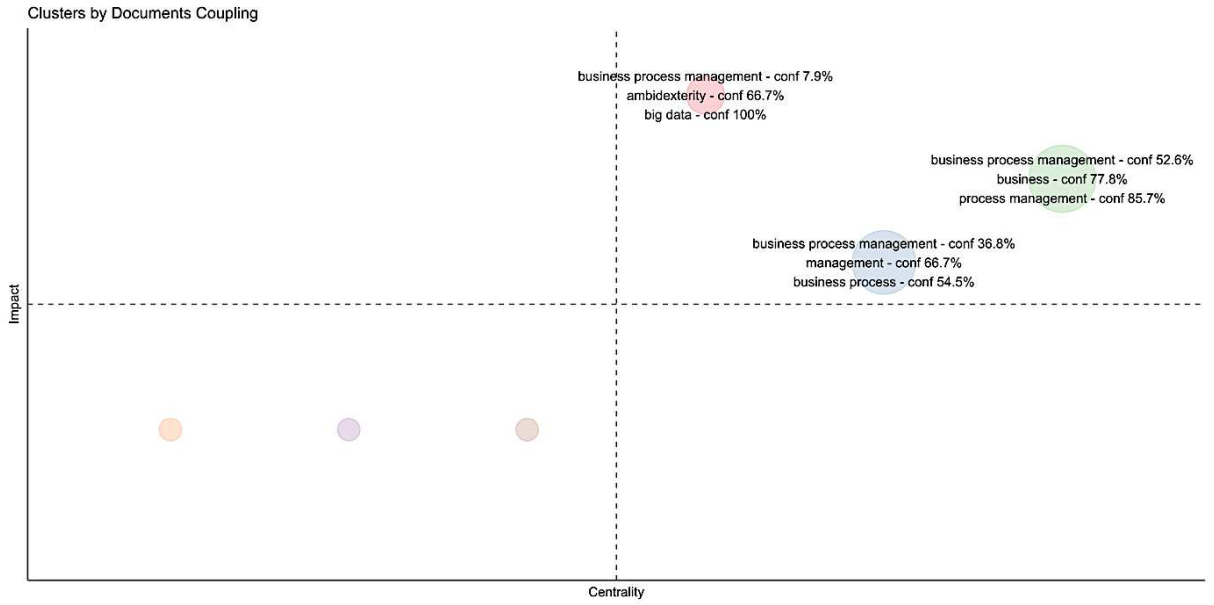

Figure 6. Clusters by documents coupling by references (labels by authors' keywords)

ing the maturity of processes and organizations, including conditions, components, and opportunities (Hammer, 2007).

Through documents coupling by references (as shown in Figure 6), three distinct clusters of relevant research were identified:

1) the first cluster, represented by a red circle, centers on Big Data and Ambidexterity themes. Despite having only four articles in the collection, this cluster has garnered the highest global citations. Notable publications in this cluster, which have the highest normalized total citations, include Rialti et al. (2018), Chatterjee et al. (2020), and Battisti et al. (2020);

2) the second cluster, shown in green, is focused on Process Management and Business. This cluster includes the most significant number of documents in the collection, with 50 papers, but has less influence than the first cluster. Leading publications include Szelągowski and Berniak-Woźny (2022), Van Looy (2021), and Pradabwong et al. (2017);

3) the third cluster is centered around Management and Business Process. Although it has a minor influence, this cluster is still significant, covering 37 documents in the collection. The top three cited publications in this cluster are Binci et al. (2020), Bititci et al. (2011), and Bucher and Winter (2010).

Word clouds of authors' keywords and keywords plus (Figure 7) highlight the primary focus areas. These clouds visually depict word frequency through font size and display the connections between words through their disposition. Among the most frequent authors' keywords, Business Process takes the top spot, followed closely by Process Management. These terms intrinsically relate to other areas, such as Knowledge Management, Ambidexterity, Process Maturity, BPM Lifecycle, and Digital Transformation. In addition to these, other essential terms in BPM research include Critical Success Factors, Organizational Culture, and Process (Figure 7a). Furthermore, the keywords plus word cloud (Figure 7b) reveal the significance of Performance in BPM research, particularly in the context of System-Model-Information Technology and Impact-Strategy-Process Orientation.

In Figure 8, the co-occurrence network map displays important terms from abstracts that act as central connectors, representing key concepts or ideas. The map reveals three different research clusters:

1) studies concentrating on Process, where terms like Data, Change, Perspective, Service, and

a) Author's keyword word cloud

b) Keywords plus word cloud

Figure 7. Word cloud by word's frequency (stop words and synonyms lists applied)

Strategy are frequently used in Organization, Practice, and Implementation. This cluster is the main one in the network;

2) research frequently using the term Approach, along with terms like Knowledge, Method, Integration, System, and Application;

3) studies that use Organizational as the anchor term connecting notions like Culture, Design, Benefits, Maturity, Theory, and Adoption.

The thematic map of abstract bigrams depicted in Figure 9 exhibits the primary topics under scrutiny. The following results were obtained:

- motor themes cover a wide range of subjects. However, the concept of Maturity is the most developed and rapidly evolving research theme. This topic encompasses studies on maturity assessment, information technologies, and digital transformations. The Business Process topic, which includes Process Management and BPM, is less influential, albeit the most common. It covers various aspects, including BPM implementation, life cycle, quality management, and performance evaluation. Other relevant research issues include Process Orientation and BPM Success, Success Factors, Data Collection and Competitive Advantage, Process Performance, and Knowledge Management;

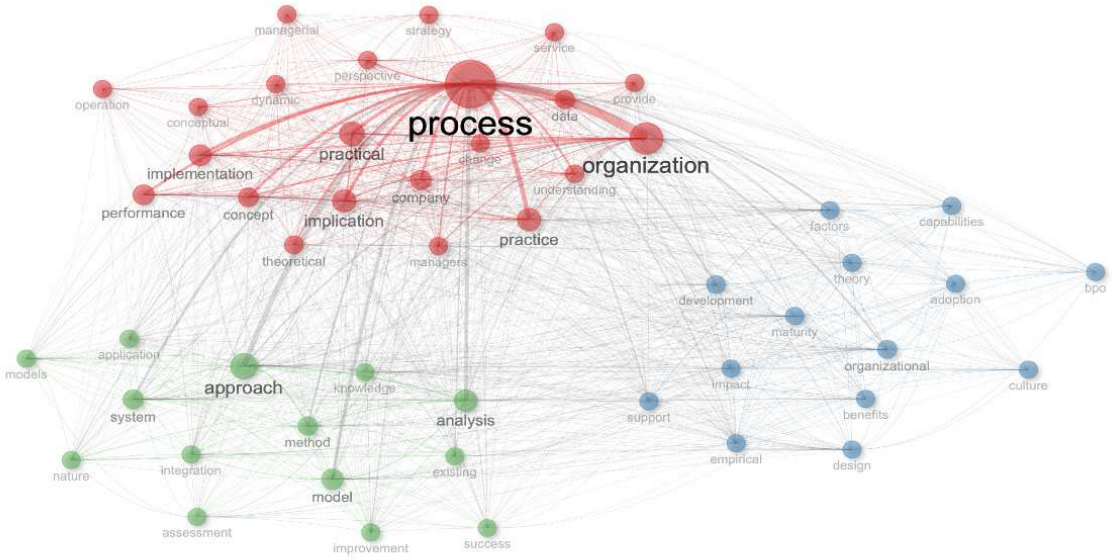

Figure 8. Word co-occurrence network map by abstracts' unigrams (stemming, stop words, and synonyms lists applied)

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- central but underdeveloped research topics include Process Modelling and Improvement, which involve issues like management practices' change, business, and improvement initiatives;

- niche research area comprises studies that examine changes in processes;

- Operations Management and Strategic Management, Organizational Processes examined through the Complexity Theory and Ambidexterity represent underdeveloped research themes.

Through the analysis of trend topics (Figure 10), it is possible to monitor the evolution of research content over time. In the early 2000s, BPM research focused on social and capital issues. In 2008, the scope of research shifted towards consumers and enterprise resource planning (ERP), which remained relevant for the following decade. Between 2010 and 2018, scholarly works concentrated on customer service, management, business process architecture, and BPM implementation. From 2015 to 2020, the emphasis was on implementation aspects such as analysis, organization, systems, benefits, integration, and capabilities. The latest research (2020–2023) focuses on maturity, capabilities, conformance, institutionalization, promotion, and start-ups.

Finally, Table 3 contains the bibliographic information for the highly cited papers in this collection. Despite the differences, these papers share some common ideas.

Chatterjee et al. (2020), Rialti et al. (2018), and Van Looy (2021) investigate the technological dimension of BPM implementation and its impact on organizations. Rialti et al. (2018) delve into the role of business process management systems in supporting the agility of ambidextrous. They emphasize the criticality of the BPM system's capability to collect and analyze big data for maintaining operational and market agility. Chatterjee et al. (2020) focus on knowledge management and the application of AI-based consumer management systems. They identify factors that contribute to the success of implementing such systems, including leadership support, overcoming resistance to change, and the ease of system use. Van Looy (2021) ex-

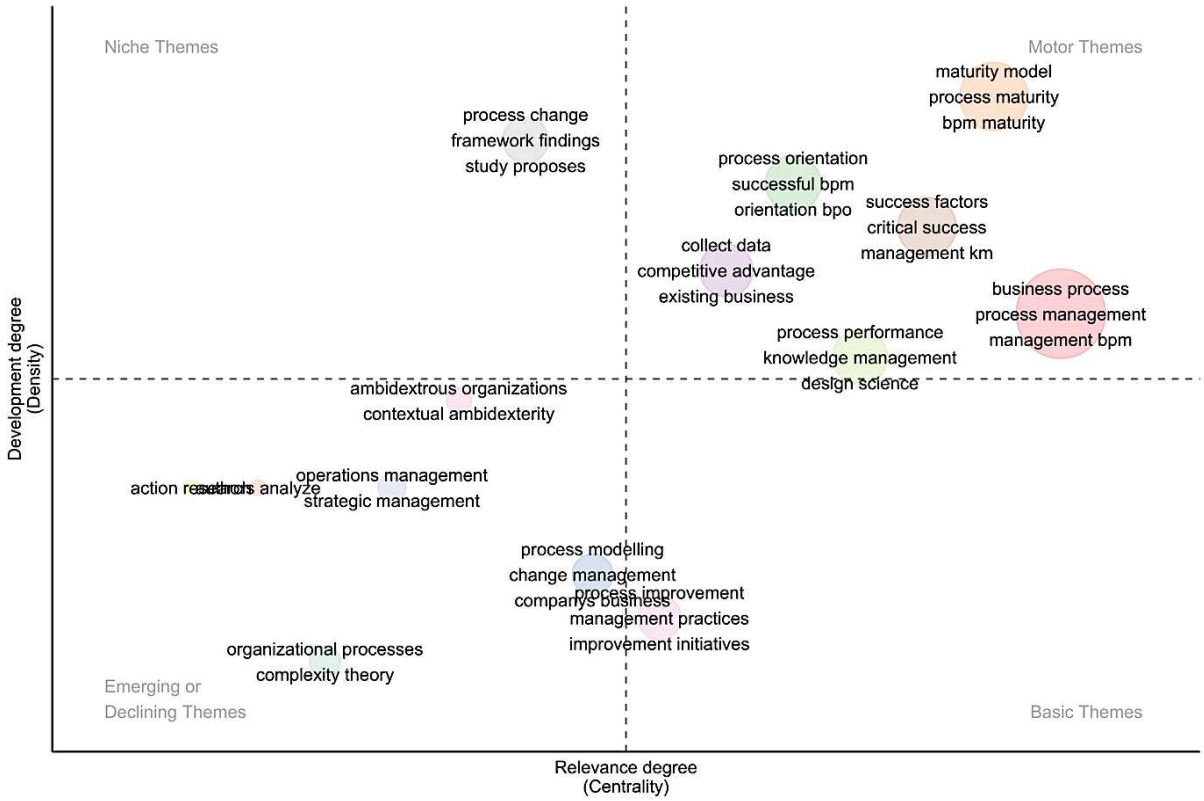

Figure 9. Thematic map by abstracts bigrams (stemming, stop words, and synonyms lists applied)

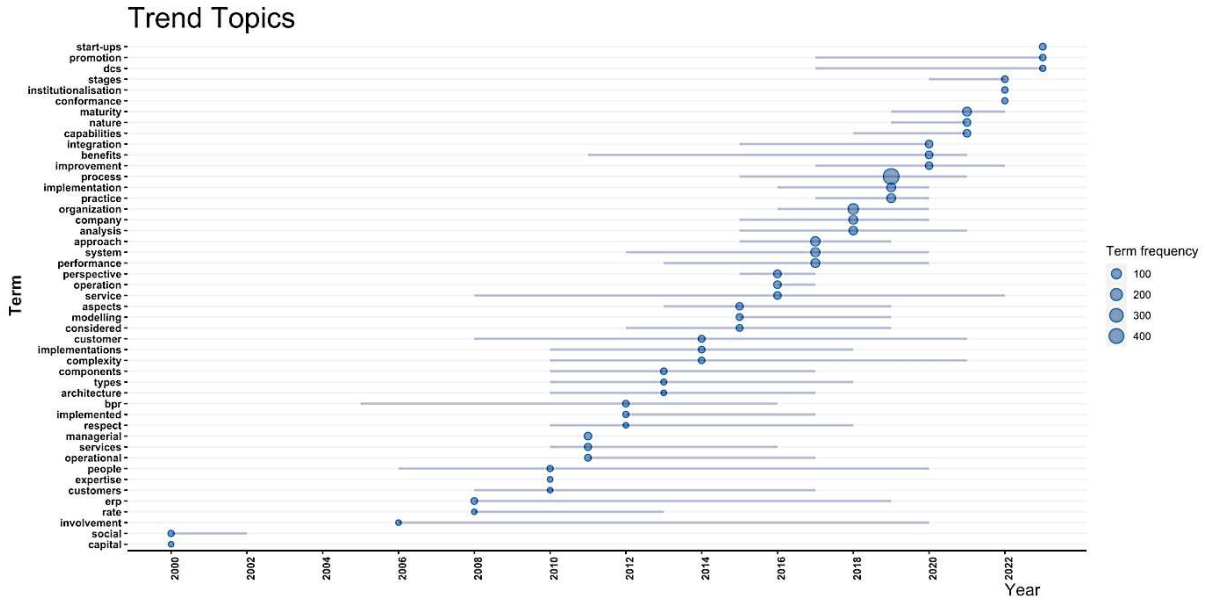

Figure 10. Trend topics by abstracts unigrams (stemming, stop words, and synonyms lists applied)

plores BPM transformation to facilitate the implementation of digital process innovations (DPI). Through survey results from managers worldwide, the study examines the relationship between BPM and DPI and identifies contextual factors influencing their alignment. It proposes a theoretical framework to determine the information system and DPI that best meet the organization's needs, along with a matrix for assessing readiness and suitable organizational types.

Another crucial aspect of BPM is its organizational basis (Bititci et al., 2011; Hung, 2006; Schmiedel et al., 2014, 2020). In this context, scholars investigate the human factor, relationships, culture, and organizational management as the basis of BPM success. For instance, Hung (2006) regarded BPM as a complex of components, including "Process Alignment" and "People Involvement," which are positively related to organizational performance. Empirical data support the claim that

Table 3. The top ten cited papers in the collection by a number of annual global citations

Paper (title and reference)	Number of total citations per year	Number of total citations	Number of normalized total citations
Ambidextrous organization and agility in Big Data Era (Rialti et al., 2018)	10.17	61	3.24
Knowledge management in improving business process: An interpretative framework for successful implementation of AI–CRM–km system in organizations (Chatterjee et al., 2020)	10.00	40	2.84
Development and validation of an instrument to measure organizational cultures' support of Business Process Management (Schmiedel et al., 2014)	9.70	97	2.14
Business Process Management and supply chain collaboration: Effects on performance and competitiveness (Pradabwong et al., 2017)	8.57	60	4.00
Business Process Management as competitive advantage: A review and empirical study (Hung, 2006)	7.83	141	1.58
Aligning firm's value system and open innovation: A new framework of Business Process Management Beyond the Business Model Innovation. (Abdulkader et al., 2020)	7.75	31	2.20
A quantitative and qualitative study of the link between Business Process Management and Digital Innovation (Van Looy, 2021)	7.00	21	4.20
Managerial processes: Business process that sustain performance (Bititci et al., 2011)	5.69	74	2.43
BPM and change management (Binci et al., 2020)	5.60	28	2.93
The relation between BPM culture, BPM methods, and process performance: Evidence from quantitative field studies (Schmiedel et al., 2020)	5.25	21	1.49

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People Involvement directly impacts organizational performance, whereas Process Alignment is mediating. The study highlights that strategic compliance is critical in Process Alignment, while empowering employees is the basis for People Involvement (Hung, 2006). Bititci et al. (2011) suggest the interrelationship of five management processes ("Managing Performance," "Managing Decision Making," "Managing Communications," "Managing Culture," and "Managing Change") to be crucial for an organization's performance and not individual processes or activities. Scholars suggest different roles of various management processes in ensuring performance: culture and communication management are proven to contribute to long-term benefits instead of short-term performance (focusing on performance management). Using empirical data, Bititci et al. (2011), like Hung (2006), point out the importance of the manager's perception of his role, so organizations should emphasize the manager's selection, training, and fitting.

Recent research has increasingly conceptualized the organizational culture's role in facilitating BPM implementation. Schmiedel et al. (2014) developed an approach to measure the effectiveness of organizational culture (of different types) regarding BPM implementation. Next, Schmiedel et al. (2020) has empirically proven that BPM success is not ensured by BPM methods only but by the BPM culture, which acts as a mediator. The study demonstrates that using BPM methods leads to forming a culture that contributes to the process's performance and the organization's success. However, methods will not increase organizational performance without a proper BPM culture built upon "customer orientation, excellence, responsibility, and teamwork" (Schmiedel et al., 2020).

The relationship between BPM and ambidexterity is a significant research issue discussed by Binci et al. (2020) and Rialti et al. (2018). Although not the primary focus of BPM research, studies in this area are highly influential and cited. BPM is viewed as a practical approach to implementing ambidexterity strategies, and Binci et al. (2020) propose examining the BPM concept within the framework of ambidexterity theory. They identify four key aspects of BPM: task specialization, system interoperability, identity, and leadership. These aspects facilitate the transfer and conversion of knowledge, promote ambiguity and feedback for change, and ultimately enable ambidexterity. However, Van Looy (2021) highlights the importance of contextual factors that influence the success of BPM implementation within an organization. Similar to the proposals of Schmiedel et al. (2014), Binci et al. (2020) emphasize the role of cultural factors in adopting BPM, suggesting that identity and leadership are crucial contextual factors that enable organizational change and promote ambidexterity.

Abdulkader et al. (2020) and Pradabwong et al. (2017) investigate the interrelationship between BPM and integration effects within companies. Pradabwong et al. (2017) suggest that adopting BPM facilitates successful supply chain integration and improves organizational and supply chain performance. Through empirical data, the authors find that firms practicing BPM engage more effectively with supply chain partners, and collaboration in the supply chain mediates the impact of BPM on organizational performance. Therefore, BPM stimulates supply chain collaboration, strengthening internal capabilities and enhancing performance by creating a collaborative advantage. Abdulkader et al. (2020) explore the concept of BPM in the context of firms' interactions and their ability to innovate. The study examines the configuration of systems that enable innovation creation and diffusion at the firm, network, and ecosystem levels. The study finds that closer cooperation between firms within the network is beneficial for creating shared value, and the degree of business model openness plays a crucial role in spreading shared value within the ecosystem and leveraging innovation.

4. DISCUSSION

Applying quantitative research methods to analyze academic publications indexed in the Web of Science has provided valuable insights into the landscape of BPM research in social sciences. The findings indicate a decline in publications on BPM since 2019. However, this does not diminish the topic's significance, as the number of publications on business process management remains substantial, as previously highlighted by

Lizano-Mora et al. (2021). Instead, this trend reflects a focus shift to the information technology domain. This observation aligns with Klun and Trkman (2018), who noted the transformation of BPM from a management discipline to a subdomain of Information Systems based on the changes in publication sources. This study confirms this shift finding the Management of Information Systems Quarterly (MISQ) Journal among the top cited sources. Nevertheless, the Business Process Management Journal remains the primary platform for disseminating research findings, as previously identified by Iritani et al. (2015).

This study also identified leading scholars and institutions researching BPM theory in social sciences. The most influential authors, including Schmiedel, Recker, vom Brocke, van Looy, Szelągowski, and Berniak-Woźny, have been actively involved in BPM research since 2014–2019. However, it was found that many researchers prefer to work individually, and collaborative research is generally conducted by small research groups, indicating a low level of collaboration. These findings align with Lizano-Mora et al. (2021). This, alongside an observed limited collaboration among institutions and countries, indicates that BPM research is highly specialized and localized. This can be attributed to the varying organizational and cultural management practices and technological adoption, which are influenced by socio-economic contexts and regions, highlighting the significance of these factors in BPM studies.

Contrary to previous findings that highlighted Germany and the Netherlands as leaders in BPM research (Muff et al., 2021), this paper identified Brazil, the UK, and Italy as leading countries in terms of productivity, with the earliest research on BPM in management science conducted in the UK. These findings indicate the global distribution of BPM research and the contributions made by various countries in advancing the field.

BPM research in social sciences has been influenced by Trkman's (2010) concept of the correspondence between business processes and business environment, and Hammer's (2007) research on process and organizational maturity. The existing research can be categorized into clusters that study process management and its application in business, the management of business processes, and the intersection of big data and ambidexterity. The largest portion of the analyzed collection focuses on process management, indicating its central role in the BPM framework. Content analysis of abstracts supports this finding, as "process" is the key term representing many studies in the collection.

Relevant research topics in BPM are diverse and cover maturity concepts, business processes, process orientation, process performance, success factors, and data and knowledge management. The maturity concept stands out as the most influential and developed topic, while the theme of "business process" (often associated with process management) encompasses most studies. However, research on business process modeling and improvement, though found central by Klun and Trkman (2018), must be developed more. Furthermore, research on the strategic management context, complexity theory, and organizational processes concerning the BPM concept could be stronger, which contrasts with the findings of Ensslin et al. (2017). This is surprising since the competitiveness realized through BPM implementation is closely tied to strategic aspects of business development, indicating a close relationship between BPM and strategic management.

The analysis also reveals a shift in research focus over time, with early 2000s studies exploring social and capital issues, while recent trends highlight topics such as start-ups, promotion, institutionalization, and conformance.

A comprehensive analysis of highly cited publications identifies three key areas representing the BPM concept in social sciences: the application of modern digital tools and innovations to enhance BPM, the significance of organizational culture in successful BPM implementation, and the role of BPM in improving supply chain integration and performance. These areas highlight two main streams of BPM research in management, reflecting the ongoing "people VS technology" debate and the need for integrating organizational and digital culture to enable the successful digitalization of BPM. This integration represents a promising area for future BPM studies, as solving the modern management challenge of combining or-

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ganizational and digital culture is essential. Empirical research was preferred over theoretical exploration, as they provide factual evidence for building theoretical constructs that can enrich the BPM concept. Therefore, future empirical studies can contribute to the "demystification of the BPM concept," as Lizano-Mora et al. (2021) suggested.

CONCLUSION

This paper provides an overview of the research landscape and BPM conceptual bases in social sciences by disclosing publication dynamics, leading authors, institutions, countries, research content, themes, and trends. The results of quantitative analysis are complemented with a thorough qualitative review of the most influential papers.

The findings highlight the evolving nature of BPM, with a shift toward the information technology domain and an increasing emphasis on interdisciplinary approaches. Specialized and localized studies, with limited collaboration among scholars, organizations, and countries, characterize the research landscape of BPM, suggesting the significance of socio-economic context in BPM research and practices.

Process management (in business) represents the most spread issue in BPM studies in management. Considering the strong influence of big data and ambidexterity research, this complements the explanation of BPM studies' transition toward the information technology domain.

Relevant themes for BPM research in management and business sciences are miscellaneous, with a prevalence of maturity concepts and business processes (co-occurring with process management). There is a need for further investigation into underexplored areas such as process modeling and improvement, as well as the integration of BPM with strategic management, complexity theory, and organizational processes.

The most influential research in the field focuses on digital tools and innovations for BPM improvement, the significance of organizational culture for BPM success, and the role of BPM in enhancing supply chain integration and performance. Future research should further explore the integration of organizational and digital culture, examine practical cases in this area, and delve into under-investigated topics.

For practitioners, the paper highlights the significance of implementing big data analysis, AI technologies, and digital innovation to enhance BPM. It also emphasizes the importance of developing a supportive management and organizational culture, assessing readiness and ability for integration, and fostering organizational flexibility and decentralization. By considering these factors, organizations can effectively implement and improve BPM practices, leading to improved performance and competitiveness.

Overall, this paper contributes to understanding BPM in social sciences, providing insights that can guide future research endeavors and inform practical approaches to leveraging BPM for organizational success.

AUTHOR CONTRIBUTIONS

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