

Serendipity in management studies: a literature review and future research directions

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Received 24 February 2022

Revised 23 July 2022

Accepted 19 September 2022

Abstract

Purpose – Management research on serendipity, which is defined as a search that leads to an unintended discovery, has increased considerably over the last three decades. In this article, management research on serendipity (up to the end of 2021) is reviewed and synthesised.

Design/methodology/approach – A bibliometric analysis was conducted on 85 peer-reviewed articles extracted from the Scopus database, which was then integrated with a systematic literature review.

Findings – The bibliometric analysis revealed that management literature on serendipity is framed around four main thematic areas: conceptual boundaries, conditions favouring serendipity and outcomes, foreign market entry and the relationship between serendipity, networks and assets. A systematic literature review was then conducted on each of the identified clusters.

Originality/value – The present article offers a systematised view of the extant body of research on serendipity in management studies. Based on the findings, the main implications and future research agendas are discussed.

Keywords Serendipity, Planned luck, Unintended discovery, Chance opportunity, Systematic literature review, Bibliometric techniques

Paper type Literature review

1. Introduction

There are often reasons why firms are 'lucky' (Porter, 1991, p. 110).

Investigations into the reasons behind business performance occupy a central position within the management literature (Porter, 1991). The resource-based perspective suggests that valuable, rare, hard-to-imitate resources and the cultivation of distinctive capabilities are key aspects of a firm's performance (Barney, 1991). Interestingly, as the outcomes of firms' decisions are contingent upon several factors, luck has been acknowledged as a residual yet relevant explanation for performance differentials between organisations (Barney, 1986; Parnell and Dent, 2009; Parnell *et al.*, 2012). Denrell *et al.* (2003) have consistently contended that a firm's performance depends on effort, alertness, flexibility, and luck. While pure luck is difficult to anticipate, meaning it can hardly be included in strategy formulation processes, firms can plan somewhat for certain types of luck (Busch and Barkema, 2020; Liu and de

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The author would like to thank Professor Brandon Randolph-Seng, Editor-In-Chief, for believing in the potential of this study, and the Associate Editor and anonymous reviewers for their precious comments during the review process. Finally, the author wants to express sincere gratitude to the author's friend Dr. Giacomo Marzi for inspiring the author along the way to build this piece of research.

Declarations of interest: none.



Rond, 2016; Ma, 2002). Accordingly, this article focuses on serendipity as a specific type of luck (Liu and de Rond, 2016).

In the management literature, serendipity has been defined as a “search leading to unintended discovery” (Dew, 2009, p. 735) and has been conceptualised as a combination of searching, contingency, and prior knowledge (Dew, 2009). Given the significant role that this type of luck plays in determining a firm’s performance, the number of studies on serendipity is spread across several management streams of research. In particular, scholars have devoted great attention to the conceptual boundaries of serendipity (Brown, 2005, 2006; Cunha *et al.*, 2015; de Rond, 2014; Liu and de Rond, 2016), its relatedness with other managerial concepts (Cunha *et al.*, 2010), its philosophical foundations (Fatien Diochon *et al.*, 2018), and the logical reverse (Giustiniano *et al.*, 2016). Moreover, scholars have explored some specific conditions inside organisations that can favour the emergence of serendipity (e.g. Graebner, 2004; Halachmi and Woron, 2013). Similarly, when serendipity arises, it could be difficult to harness momentum and realise serendipitous value by converting promising situations into positive turning points (e.g. Denrell *et al.*, 2003). From the analysis, it emerged that serendipity can be an enabler of internationalisation processes (e.g. Khoury *et al.*, 2021), unexpected early growth after foreign market entry (e.g. Wood *et al.*, 2011), network creation (e.g. Engel *et al.*, 2017), and the acquisition of strategic assets (e.g. Schmidt, 2015).

Despite the increasing number of studies on serendipity and the escalating use of the phenomenon in practice, much remains unknown about this topic, as it is a relatively new concept. Accordingly, various scholars have highlighted the necessity of providing theoretical integration to the extant knowledge on serendipity in the management field (Liu and de Rond, 2016; Yaqub, 2018). Moreover, there are several reasons why a systematisation of the existing body of knowledge on serendipity is required. First, serendipity research is fragmented across a number of management streams. Due to this fragmentation, serendipity remains an elusive concept because it has been analysed through several conceptual lenses and methodological approaches. These differences in theoretical perspectives and methodologies create remarkable complexities when attempting to frame a complete picture of the state of the art, especially when reading articles in isolation. Furthermore, serendipity is often suggested by management scholars as a possible reason for “unexplained” outcomes. While this trend implicitly corroborates the relevance of serendipity in both theory and practice, serendipity is typically mentioned at the end of papers as a “side comment” rather than a main object of the investigation. Accordingly, serendipity often remains undertheorised, which, combined with the width of conceptual and methodological perspectives, has seriously hindered the development of serendipity theory in management studies. Against this backdrop, the present article maps studies in which serendipity is a central locus of attention and where the authors offer considerable theoretical advancements on the topic.

Second, although the number of published articles on the topic suggests that we know a great deal about serendipity, many research gaps remain. For example, despite serendipity being conceptualised as a capability rather than an event (de Rond, 2014), it is surprising that there is scant research that draws on capability-based perspectives to formulate hypotheses on the realisation of serendipitous value. More generally, this review provides scholars with a theoretical integration of a significant body of research that reveals a number of underexplored aspects. Some studies on the conceptual boundaries of serendipity have been conducted in different management substreams. Thus, the present review recollects these theoretical and empirical insights to facilitate the identification of research gaps in extant serendipity research and the development of any new theories on serendipity.

Third, today’s world of business is characterised by escalating levels of uncertainty, environmental turbulence, and competitive pressure, which implies a significant increase in the complexity of decision-making processes. In these contexts, chance can also be a primary

driver of change. However, in response to Louis Pasteur's famous quote—"chance only favours the prepared mind"—the identification of the main lines of research on serendipity can provide managers with guidance on the main patterns and insights highlighted by scholars on the creation, cultivation, and realisation of serendipitous value inside organisations. For example, this article emphasises that firms can encourage an increase in serendipity through the adoption of adaptive paradigms and emergent strategies [1] rather than the strict execution of predefined plans (Crick and Spence, 2005; Denrell *et al.*, 2003; van Andel, 1994). Similarly, this article also embraces the importance of search activities. Search intrinsically deals with the unknown, and sometimes it ends up in economic losses without noteworthy results (Yaqub, 2018). However, as several studies have suggested, search efforts can lead to the discovery of profitable opportunities that might not have emerged if a systematic application of predefined strategies had been followed.

The contributions of this article are twofold. First, the main thematic areas of serendipity are identified and systematised. More precisely, this study organises the current state of knowledge on serendipity around four main thematic areas: conceptual boundaries, conditions favouring serendipity and outcomes, foreign market entry, and the relationship between serendipity, networks, and assets. Second, based on the findings, the main implications are outlined, and a novel research agenda is proposed. The remainder of this study is structured as follows. In the methods section, the techniques adopted in the study are described, followed by a presentation of the results and a detailed discussion of the four clusters identified through the bibliometric techniques. Finally, the main implications of the study and future research agendas are discussed.

2. Methods

Bibliometric methods have been widely adopted by management scholars to provide maps of the knowledge structure in a given field (Zupic and Čater, 2015). In particular, systematic literature reviews provide the opportunity to summarise research in a transparent and reproducible way (Tranfield *et al.*, 2003). This study is based on a bibliometric analysis, followed by a systematic literature review of the bibliometric results. Such a combined approach furnishes the mapping of relevant on-topic articles and allows for a detailed analysis of each emergent research stream (e.g. Caputo *et al.*, 2018; Marzi *et al.*, 2021; Rialti *et al.*, 2019). Thus, the aim of the present bibliometric analysis is to map the various streams of research on serendipity in the management field. To conduct a bibliometric analysis, a research protocol should be followed to enhance the replicability of the process (Pellegrini *et al.*, 2020). In particular, with the aim of systematising management articles on serendipity, the following boundary conditions were placed:

- (1) The article is positioned within the management literature;
- (2) The article has a clear focus on serendipity;
- (3) The article adopts the firm as the main unit of analysis, rather than other stakeholders (e.g. consumers and society).

To refine the search query, an iterative search process was followed. More precisely, the initial query for the bibliometric analysis began with a focus on the main term "serendipity" and its derivations (e.g. serendipitous or serendipitously). Further search queries were then conducted based on key words, including "planned luck", "unintended discovery", "chance opportunity", "idiosyncratic strategies", and "unexpected outcomes". Simultaneously, backward and forward procedures were employed to assess additional potential candidates. After several iterations, the search indicated that the most centred on-topic articles adopted the word "serendipity" or its derivations in their title, abstract, or key words. This confirmed that even though serendipity might be "hidden" in ex post explanations to

counter the expected results of several articles, many of these articles undertheorised serendipity, without any clear focus on the topic. Thus, to capture the main theoretical advancements of the topic, this article only focuses on those contributions that analysed serendipity at the core of their theoretical foundation and/or main arguments. The intention was to integrate extant knowledge on serendipity based on a related theoretical body of research. Accordingly, “serend*” was set as the keyword, and the search was limited to management-related subject areas up to the end of 2021. To perform the bibliometric analysis, preliminary searches in Web of Science (WoS) and Scopus were conducted on January 15, 2022 [2]. It should be noted that WoS and Scopus are considered the largest and most reliable databases of journal articles (Farrukh *et al.*, 2020; Köseoglu *et al.*, 2020; Pugliese *et al.*, 2021). Scopus revealed a greater number of documents than WoS, and the documents obtained from WoS were a sub-sample of those from Scopus. Hence, the analysis focused on the database obtained from Scopus. The initial search resulted in the identification of 391 documents. To ensure that the collected documents were of high quality, the analysis was further limited to peer-reviewed articles that were written in English and published in academic journals listed in the Academic Journal Guide 2021 [3], narrowing the database to 245 articles. Then, a selection phase followed, in which the full text of each article was scanned to assess its potential inclusion. If an article respected each boundary condition, it was assigned a value of 1 in an Excel sheet, or 0 otherwise. In addition, for each of the 245 articles, a column was inserted into the Excel sheet containing an explanation of the rationale behind the inclusion/exclusion choices. Ultimately, 85 articles were selected for further analysis. As this is single-author research, two experts were assigned to review and comment on the boundary conditions, the search procedures, and the representativeness of the sample, with the aim of enhancing the reliability of the inclusion choices. Specifically, the experts were asked to evaluate the methodological consonance of the adopted research query and scrutinise each of the indicated inclusion/exclusion reasons. The results of this triangulation were confirmative, as the experts found that the search query was able to identify the main contributions to serendipity research in the field of management and deemed the inclusion choices appropriate. Subsequently, a bibliometric analysis using the VOSviewer software was performed, adopting bibliographic coupling as aggregation criteria and setting the minimum cluster size to $n = 8$ (van Eck and Waltman, 2010). In addition, VOSviewer generated a similarity matrix and offered a clustering of items, outlining potential substreams of research (van Eck and Waltman, 2010). At the end of this process, four clusters emerged. At this point, with the support of VisualBib [4] (Dattolo and Corbatta, 2019), the extracted metadata and identified key research topics for each cluster were examined.

3. Results of the bibliometric analysis

The amount of management research on serendipity has been increasing steadily over the past three decades. Figure 1 presents the temporal distribution of the published articles, where an upward trend can be observed, and the slope of the regression line is constantly positive. In Table 1, the journal distribution of the selected articles is presented. Interestingly, the main journals in which serendipity is discussed in the management debate are published in the field of organisational studies (e.g. organisation science, organisation studies, and culture and organisation). This suggests an academic interest in the phenomenological roots of serendipity and how it manifests inside the boundaries of organisations. Furthermore, a considerable number of articles have been published in journals with a noted interest in international contexts (e.g. Journal of Business Research and International Business Review) and entrepreneurial opportunities (e.g. Entrepreneurship: Theory and Practice, Research Policy, Strategic Management Journal). The graphical output of the VOS analysis is presented in Figure 2. Each of the four clusters was separately analysed using VisualBib, which produced meta-analytic outputs on each of the four thematic areas. The analysis

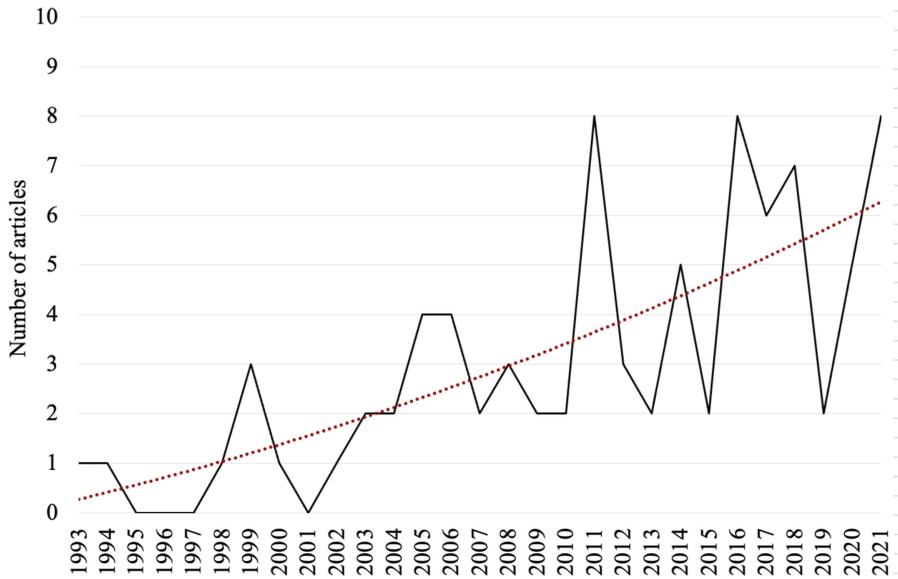


Figure 1.
Articles by year

Journal title	<i>n</i>	Number of articles	%
<i>Organization science</i>	7		8.24%
<i>European management journal</i>	4		4.71%
<i>Journal of business research</i>	4		4.71%
<i>Organization studies</i>	4		4.71%
<i>Culture and organization</i>	3		3.53%
<i>Entrepreneurship: theory and practice</i>	3		3.53%
<i>International business review</i>	3		3.53%
<i>International marketing review</i>	3		3.53%
<i>Journal of technology transfer</i>	3		3.53%
<i>Research policy</i>	3		3.53%
<i>Strategic management journal</i>	3		3.53%
<i>Journal of business venturing</i>	2		2.35%
Other	43		50.59%
<i>Total</i>	85		100%

Table 1.
Articles by journal

provided insights into each of the four clusters in terms of citation relationships, keywords, subject areas, and authors' proficiency based on Scopus. Specifically, it emerged that red-cluster articles were related to definitional issues, dialectical processes, taxonomies, and conceptual perimeter. The most cited articles within the cluster were authored by Dew (2009), Cunha et al. (2010), and de Rond (2014). The green-cluster articles were related to enabling factors, knowledge creation, momentous turning points, and opportunity discovery. The most cited article within the cluster was authored by Graebner (2004). The blue-cluster articles were related to internationalisation, foreign market entry, international business, SMEs, and cross-country studies. The most cited articles within this cluster were by Crick and Spence (2005), Chetty and Agndal (2007), and Chandra et al. (2009). Finally, the yellow-

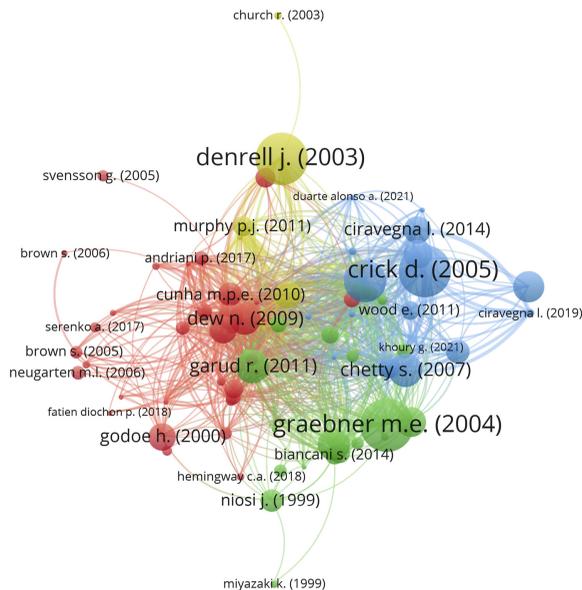


Figure 2.
Graphic output of the
VOS analysis

cluster articles were related to resources, knowledge, networking activities, and collaborations, in which the most cited article was by [Denrell *et al.* \(2003\)](#).

By integrating the VisualBib output with a detailed study of each article, labels for each cluster were created. To check for consistency, an additional keyword analysis was generated through VOSviewer, where the results were confirmatory. [Table 2](#) presents a summary of the identified topics, main research themes, and number of articles per cluster.

4. Systematic review of the clusters

Serendipity research is vibrant in the management literature, and the number of published articles per year is constantly increasing. In this section, each of the four clusters (see [Table 2](#)) that emerged from bibliometric analysis is reviewed.

4.1 Red cluster: conceptual boundaries

Red-cluster articles addressed the conceptual boundaries of serendipity. In particular, scholars discussed the structure of serendipity, offered a conceptualisation, unveiled its dialectics, and explored related concepts as luck and organisational zemblanity (i.e. the logical reverse of serendipity). Serendipity is a process that combines behavioural and trait characteristics in an attempt to achieve business success ([Brown, 2005, 2006](#); [Lowe *et al.*, 2018](#); [Martello, 1994](#); [Svensson and Wood, 2005](#); [Turner and Pech, 2021](#)). Given that firms constantly have to manage uncertainty, the study of serendipity offers insights to both scholars and practitioners on various issues related to knowledge management and organisational learning ([Serenko and Dumay, 2017](#)). Serendipity does not emerge from the systematic application of what is already thought; rather, it emerges from surprise ([Cunha *et al.*, 2010](#)). [Wareham *et al.* \(2021\)](#) explored a set of modes in which serendipity can appear in highly technological contexts. Namely, it can be the outcome of a combination of different technologies, the application of a technology to a field that differs from that of the original

Cluster	Topic	Main research themes	No. of articles
Red	Conceptual boundaries	Analysis of the conceptual boundaries of serendipity. Scholars have explored the origins of serendipity in the field of management, the relatedness of serendipity with other managerial concepts, its philosophical foundations, and logical reverse	27
Green	Conditions favouring serendipity and outcomes	Scholars investigated some specific conditions inside organisations that can favour the emergence of serendipity, and how serendipity can contribute to the formation of new business opportunities	21
Blue	Foreign market entry	Scholars focused on serendipity in the context of foreign market entries. In this context, serendipity can operate as an internationalisation enabler or explain unexpected early growth after entry into a foreign market.	19
Yellow	Networks and assets	Serendipity can affect the acquisition of strategic assets by focal firms. Further, some encounters can arise serendipitously. In turn, the possession of specific resources and network construction can facilitate the rise of serendipitous outcomes	18

Table 2.
Summary of clusters

domains, or it can emerge from the use of artificial intelligence and machine learning techniques.

The concept of serendipity has clear boundaries, meaning it is different from ambiguity (Brown, 2006), providence (de Rond, 2014), accidental occurrences (Brown, 2005), chance events (de Rond, 2014), and randomness (Liu and de Rond, 2016). More precisely, accidental discoveries need the right capabilities to exploit and extract value from these discoveries to entail serendipity and lead to value creation (Austin *et al.*, 2012). At the same time, managerial cognition is crucial to take advantage of strategic opportunities that arise serendipitously (Winter, 2012). Consistently, serendipity can be broadly analysed as a specific type of luck (Cunha *et al.*, 2010; Liu and de Rond, 2016) that describes a capability rather than an event (de Rond, 2014), and is typically associated with momentous turning points (Hemingway and Starkey, 2018). In particular, serendipity can emerge from searching with sagacity (Dew, 2009; Vermaak and de Caluwé, 2017). Thus far, systematic exploration, spontaneous recognition, and prediscovery are associated with different configurations of searches, prior knowledge, and contingency. Therefore, the concept of serendipity is combinational, as it captures all three subdimensions (Dew, 2009). Similarly, Neugarten (2006) concluded that serendipity is related to openness towards the new and readiness to embrace unexpected outcomes is a distinctive symptom of competitive intelligence, which can prevent strategic surprise.

Fatien Diochon *et al.* (2018) analysed the philosophical foundations and ethics of serendipity, which is based on constantly challenging the status quo and maintaining social elements at the core within organisations. Thus, serendipity encompasses the role of the historical and social features of innovation processes and can be enhanced by leveraging core existing resources through generative processes (de Rond, 2014). Furthermore, Yaqub (2018) explored the concept of serendipity and suggested that it might depend on the attributes of entities and situations or the characteristics of the inquiry field. In more detail, the author noted that serendipity is often induced by errors, meaning that it could be critically enhanced by controlled “sloppiness”. However, it is important to note that the search for serendipitous discoveries does not imply more unfocused research. Rather, it is the development of specific capabilities to take advantage of strategic opportunities. Yaqub (2018) also highlighted the main challenges in measuring serendipity, which are framed around timing (e.g. time

windows, or identifying the start and end points of a search), how meritorious and worthy efforts appear, and potential sources of incorrect (i.e. under or over) estimations. Another interesting aspect related to serendipity in the management literature is the exploration of its logical reverse—“organisational zemblanity”. In particular, [Giustiniano et al. \(2016\)](#) introduced the concept of zemblanity to organisational studies when referring to the active, unintentional construction of a firm’s own misfortune in systems designed to prevent this from happening. In addition, [Giustiniano et al. \(2016\)](#) offered valuable insights into role virtue and vicious circles. While serendipity induces learning and innovation by virtue of design, zemblanity generates a series of decisions that can trigger vicious circles.

[Cunha et al. \(2015\)](#) examined serendipity as a dialectical process. Specifically, they perceived serendipity as an effortful process that explicates the synthesis of preparation and openness via generative doubt. Accordingly, serendipity does not have a mysterious nature; rather, it is a practical accomplishment grounded in a creative synthesis of the existing and the new. Similarly, scholars have debated the role of serendipity and context in problem-solving practices, illustrating several tensions and equilibrium points. For example, [von Hippel and von Krogh \(2016\)](#) explored how firms might serendipitously discover a new solution, even though the related problem was not the object of the search. Indeed, while formal problem-solving practices have a top-down approach (i.e. from problem statement to solution identification), the authors discussed how informal problem-solving practices might work in the opposite way. Here, problem identification occurs after solution identification (i.e. once a serendipitous discovery occurs). This perspective received criticism from [Felin and Zenger \(2016\)](#), who discussed the primacy of normative theories in problem-solving practices, raising a counterpoint against serendipity in the strategy-making process, and preferring the comparative firm-centric theories of value creation. Interestingly, [Andriani et al. \(2017\)](#) proposed an exaptation (i.e. the co-optation of existing traits for new functions) perspective. Specifically, the authors noted that market and technological uncertainty can limit the applicability of normative theories in strategy formulation. Moreover, these theories assume that firms are ex ante capable of assessing the role of serendipity. Nonetheless, [Felin and Zenger \(2016\)](#) recognised that serendipitous discoveries depend on intuition and cognitive attention. In addition, [Andriani et al. \(2017\)](#) reconciled this academic debate through a classification of the top-down approach as Type 1 problem solving and the logical reverse as Type 2 problem solving. Drawing on the exaptation perspective, [Garud et al. \(2018\)](#) argued that it is sometimes possible to anticipate or foresee the possibility of finding new uses or functionalities for existing discoveries. Moreover, [Andriani and Kaminska \(2021\)](#) integrated and interconnected serendipity, planned processes, and human intentionality into innovation theory, suggesting that creation and discovery depend on advancement in the exaptation process. [Godoe \(2000\)](#) observed that although incremental innovations have frequently been explained through rational models and the dynamics of technological regimes, radical innovations are hardly bounded by the same scheme. Interestingly, in his study of the telecommunication industry, [Godoe \(2000\)](#) revealed empirical evidence that, in certain contexts, innovation regimes have provided coordination and direction capabilities in the creation of radical innovations. Hence, in these cases, innovation regimes generate radical innovations as a result of intention. These findings pose intriguing questions about the factors that enhance the role of serendipity. In the following section, this aspect is addressed by systematically reviewing articles on conditions that favour the emergence of serendipity in organisations.

4.2 Green cluster: conditions favouring serendipity and outcomes

The green-cluster articles address the conditions that favour serendipity and outcomes. In particular, the scholars discussed which factors can favour the emergence of serendipitous discoveries, how and to what extent firms take advantage of them and how serendipity can

contribute to the formation of business opportunities and success. Despite serendipity being indissolubly linked to uncertainty (Niosi, 1999; Stokes *et al.*, 2016), scholars have revealed that several manageable factors can stimulate serendipity and the realisation of serendipitous value. For example, entrepreneurial actions, which can be viewed as the processes of creation, attraction, and a combination of resources to capture emergent market opportunities, can increase the chances of serendipity (Cha and Bae, 2010). In addition, complexities can play a critical role. Garud *et al.* (2011) posited that complexity is fundamental for innovation and might favour nonlinear dynamics, especially when it involves multiple actors, artifacts, and practices and it is open to evolution over time. Hence, the cultivation of rich innovation projects is positively associated with serendipitous outcomes and momentous turning points. Moreover, to increase the chances of serendipity, firms should leverage diversity and cross-organisational responsibilities. Graebner (2004) corroborated this perspective in her study of merger and acquisition activities. She observed that serendipitous value materialises more when acquired managers are assigned cross-organisational responsibilities and when acquired engineers share responsibilities with acquiring firm engineers. In the context of merger and acquisition activities, Colman and Lunnan (2011) demonstrated that identity threats could be beneficial for serendipitous value creation at the moment of an acquisition. In particular, identity threats might favour serendipitous value creation, as these threats stimulate mobilising and mitigating actions. Similarly, the degree of intertwining between individuals inside organisations plays a critical role in enhancing serendipity. Halachmi and Woron (2013) revealed that interorganisational learning capabilities promote the realisation of serendipitous opportunities, as they propel the adoption of solutions that could significantly differ from existing solutions.

Kato *et al.* (2019) suggested that contextual factors can play an important role in favouring serendipity. In particular, the authors found empirical support for their hypotheses that cooperative work climates and non-conformity orientations can influence whether serendipity emanates from internal and external information, respectively. Workplace collaborations and the degree of social intertwining among co-workers have been identified as crucial enablers of serendipity as they combine diverse areas of expertise (Biancani *et al.*, 2014; Eagle, 2004). In their study of US start-ups, Fultz and Hmieleski (2021) theorised and found empirical support for their hypothesis that organisational improvisation is positively related to serendipity. Additionally, their study suggested that informal organisational structures can strengthen the relationship between serendipity and business performance. Consistently, authors have revealed that the realisation of strategies for change is not always the result of a predefined plan (Brown and Wilson, 1993; Eriksson and Sundgren, 2005; Regnér and Zander, 2011; Styhre, 2008). Rather, it is the result of serendipitous encounters and the intersection of different cultures inside the organisation.

Competence-building activities (Miyazaki, 1999), which is common parlance for change (Eriksson and Sundgren, 2005), knowledge co-production (Rossi *et al.*, 2017), and collaborative innovation projects (Bonney *et al.*, 2007), can facilitate serendipitous synergies and enhance the overall efficiency of innovation and change. Similarly, Knudsen and Lemmergaard (2014) demonstrated that the development of effective communication strategies and the strategic management of social media can significantly increase the likelihood of serendipity. This is because social media promotes coordination and connections between individuals and organisations. Given that serendipity can result in the identification of new market niches (Casalini *et al.*, 2016) and that firms can benefit from serendipitous discoveries or encounters, managers have strived to stimulate it in their organisations.

Serendipity can arise in various modes and is often the result of interactions. In this regard, Lane *et al.* (2021) revealed that when two entities exhibit a similar degree of knowledge, this is systematically associated with an increased likelihood that such

serendipitous encounters will generate new knowledge. The findings by Lane *et al.* (2021) on the role of serendipitous encounters in knowledge production outcomes point toward the yellow cluster, which is devoted to serendipitous networks and resources. Similarly, from the bibliometric analysis, it emerged that market entry can also be the result of serendipity. In the following section, the main contributions of the blue cluster to this topic are reported.

4.3 Blue cluster: foreign market entry

Blue cluster articles address the relationship between foreign market entry and serendipity. In particular, scholars have explored the role of serendipity in the internationalisation process, significantly altering growth paths and sometimes acting as an enabler. Initially, in accordance with the view that serendipity is a capability rather than an event (de Rond, 2014), several scholars have investigated the role of serendipity within the area of internationalisation. It has been proven that firms can incur serendipitous internationalisation (Çalişkan *et al.*, 2006; Ciravegna *et al.*, 2014, 2019; Duarte Alonso and Kok, 2021; Vissak *et al.*, 2020). Moreover, serendipitous encounters can cause firms to internationalise, even if they do not have the requisite resources and capabilities to sustain their business abroad (Ciravegna *et al.*, 2019). Therefore, serendipitous internationalisers tend to develop their foreign market entry strategies through an evolutionary approach (Ciravegna *et al.*, 2019; Merrilees *et al.*, 1998). This usually occurs when strategic commitment toward internationalisation is low, although they still expand internationally quite early (Wood *et al.*, 2011). In both the early and late internationalisation phases, serendipity can play a critical role and sometimes acts as an enabler of internationalisation (Khoury *et al.*, 2021) or of the venture creation process itself (Kimjeon and Davidsson, 2021). For example, actors might serendipitously trigger firms toward gaining foreign market entry by informing them about opportunities or by creating new links between these firms and potential consumers or new partnerships (Agndal *et al.*, 2008; Chetty and Agndal, 2007; Kontinen and Ojala, 2011). Nonetheless, various articles have suggested that fortuitous events are not important factors in themselves. Rather, the entrepreneurial attitude of managers who are able to identify and exploit such events is the determinant (e.g. Crick and Spence, 2005). Indeed, managers should be ready for new international opportunities that emerge and promptly adapt their strategies accordingly. Similarly, in their study of UK high-performing SMEs, Crick and Spence (2005) noted that internationalisation processes are iterative in nature and the capability to entrepreneurially adapt to the unexpected is a determinant in the realisation of serendipitous value. Hilmersson *et al.* (2020) also revealed that rigidly and systematically adhering to predefined market entry strategies can be detrimental to the realisation of serendipitous value. Furthermore, given that serendipity necessitates sagacity, strict adherence to predefined schemes can hinder any increase in serendipity. Interestingly, a low degree of knowledge can also stimulate serendipity. For example, Chandra *et al.* (2009) revealed that firms with low prior international knowledge rely more on opportunity discovery than on systematic strategies. Drawing on an international opportunity recognition perspective (Baron, 2006), Kiss *et al.* (2020) explored the cognitive processes that facilitate serendipitous foreign market entry. They revealed that pronounced opportunity searches and openness to strategy reformulation can significantly enhance the chances for serendipitous internationalisation. Moreover, serendipity can affect the cognitive frames of managers and entrepreneurs and shape their decisions in the context of foreign market entry (Kiss *et al.*, 2020; Lassalle, 2018). This perspective is coherent with the findings reported by Spence and Crick (2006) and integrates effectuation logic into the context of international entrepreneurship (Prashantham *et al.*, 2019; Sarasvathy, 2001). In their study of Canadian and UK high-tech SMEs, the authors observed that internationalisation decisions were widely contingent on chance events. Hence, given that internationalisation processes

are partly driven by serendipity, scholars have observed that such a significant role is even more pronounced for SMEs than for larger firms. This is because the former are usually characterised by limited resources and experience difficulties in anticipating the unexpected and realigning toward the initial plans through resource mobilisation. According to this perspective, SMEs might be more exposed to serendipity in internationalisation processes (Meyer and Skak, 2002). Furthermore, as serendipity can significantly alter a firm's growth path, it is critical to be in the position of being able to leverage opportunities emanating from serendipitous internationalisation or to increase serendipitous network-building circumstances. Moreover, as suggested by Meyer and Skak (2002), networks and collaborations can also develop serendipitously, resulting in profitable business opportunities. In the following section on the yellow cluster, a discussion of this topic is addressed by systematically reviewing articles on the relationship between serendipity, networks, and assets.

4.4 Yellow cluster: networks and assets

The yellow-cluster articles address the relationship between serendipity, networks, and assets. In particular, scholars have converged on the idea that serendipity plays an important role in developing capabilities, acquiring assets, and constructing networks. In turn, networks and collaborations can stimulate serendipitous outcomes and result in the exploitation of new strategic opportunities. Consistently, scholars have noted that the development of distinctive capabilities and the acquisition of strategic assets are central to the exploitation of strategic opportunities (Denrell *et al.*, 2003; Murphy, 2011) and to determining a firm's performance (Carayannis *et al.*, 2011, 2016). From this perspective, both rational purposive plans and serendipity are determinants in shaping strategies to exploit strategic opportunities (Church *et al.*, 2003; Murphy, 2011). More precisely, the discovery and exploitation of strategic opportunities arises from a combination of prior experience, resource endowments, serendipity (Denrell *et al.*, 2003), and managerial cognition (Schmidt, 2015). Moreover, serendipity might play an important role in the acquisition of strategic assets. For example, research has revealed that external knowledge can serendipitously influence innovation through social interactions (De Zubielqui *et al.*, 2016). Interestingly, as argued by Roper and Love (2018), the extent to which such a mechanism manifests could vary between industries, depending on ambient knowledge. In the context of mergers and acquisitions, Carayannis (2008) noted that serendipity can appear through knowledge dynamics and social interactions in the operational, tactical, and strategic phases. Furthermore, its emergence in one phase can positively affect other phases and facilitate the integration of strategic knowledge assets. This view bridges two competing entrepreneurship perspectives: knowledge spillover and network-based new venture formation. It should be noted that formal and informal knowledge acquisition mechanisms can co-exist, and serendipitous knowledge acquisition contributes to new venture formation, especially in knowledge-rich areas with high levels of absorptive capacity (Carayannis *et al.*, 2011). In their conceptual article, Engel *et al.* (2017) argued that networking and social interactions are not only connected to entrepreneurial action. Rather, as businesses are embedded in social contexts, networking activities are entrepreneurial actions themselves. Hence, entrepreneurial network construction and social interactions are vital for business activities, and serendipity plays a critical role in such activities (Engel *et al.*, 2017; Koza and Lewin, 1999; Lennerfors and Rehn, 2014). Networking involves several different actors and modalities, and serendipity can manifest in various forms, despite collaborative buildings and social interaction being insufficient conditions for serendipitous outcomes (Irving *et al.*, 2020). For example, Ghali *et al.* (2017) observed that collaborative partnerships for the sharing of resources or exchanging of materials can occur with different levels of planning and serendipity.

Leveraging serendipitous network construction activities, such industrial synergies can result in cleaner production processes and process optimisation. Similarly, incubators (Busch and Barkema, 2020), universities (Miner *et al.*, 2012), and regional industrial symbiosis networks (Paquin and Howard-Grenville, 2013) can facilitate network embeddedness, creating an environment for serendipity. Bouncken (2011) revealed that the emergence of repetitive activity patterns in project alliance management improves both planned and serendipitous innovation. Moreover, such activity patterns allow allying firms to share their capabilities, promote synergies, and combine their knowledge to achieve a common objective. Such collaborations can enhance the occurrence of serendipitous innovation outcomes (Bouncken, 2011).

5. Discussion

From the literature review, it is evident that serendipity research is flourishing. Importantly, the systematised view of this emerging body of research offered new insights that might not have been readily apparent if each article had been read in isolation. The present review suggests that existing research on serendipity is framed around its conceptual boundaries, conditions favouring serendipity and outcomes, its role in foreign market entry, and its relationship with networks and assets. However, extensive information about serendipity remains hidden. In the next section, the main research and practical implications of this study are discussed, and a future research agenda is proposed.

5.1 Main implications

The present review offers both theoretical and practical implications. From the theoretical perspective, this review corroborates the thesis of Andriani *et al.* (2017) on the identification of need–solution pairs, without necessarily formally stating the need in advance. Serendipitous value can arise unexpectedly and still be captured by proactive and flexible organisations (Denrell *et al.*, 2003). Furthermore, as outlined in this review, research on serendipity in management studies shares similar patterns to the study of serendipity in many different contexts (de Rond and Morley, 2010; Kim *et al.*, 2021) and units of analysis, such as humans and computers (Murayama *et al.*, 2015; Pease *et al.*, 2013). For example, marketing researchers have investigated serendipity in terms of chance encounters in the marketplace (e.g. Kim *et al.*, 2021), noticing that feelings related to serendipity positively affect a series of consumer outcomes, including satisfaction, enjoyment, and perceptions of the meaningfulness of an experience. Accordingly, management scholars could investigate whether parallelisms hold in the relationship with partnerships or suppliers to analyse how bargaining power is altered when these encounters emerge serendipitously. In their analysis of research teams, Murayama *et al.* (2015) noted that there is a trade-off between serendipity and academic productivity, depending on who plays the leading role in management and research. Similarly, researchers could explore how leading roles in a business unit or teamwork can result in outcomes in terms of serendipity. Serendipity can emerge in a variety of ways and contexts, which enhances the multidisciplinary nature of this concept. This review highlighted that in organisational contexts, serendipity is related to the management of uncertainty (Niosi, 1999) and typically emerges from complexity (Garud *et al.*, 2011), diversity (Graebner, 2004), and thinking outside the box, without strictly adhering to rigid, predefined plans. Moreover, serendipity is a dialectical process that requires a synthesis of preparation and openness via generative doubt (Cunha *et al.*, 2010). There is also confirmatory evidence of these underlying principles in the fields of physics and medicine (de Rond and Morley, 2010) and in the study of humans and machines (Pease *et al.*, 2013). Thus, the cross-fertilisation of knowledge among disciplines on serendipity is encouraged.

From a practical perspective, this review informs managers of the importance of managing uncertainties effectively (Niosi, 1999) and of carefully considering the array of factors that can favour serendipity (e.g. diversity in team compositions, complexity, and cross-organisational responsibilities). Moreover, entrepreneurial actions (Cha and Bae, 2010), networking activities (Engel *et al.*, 2017), foreign market entry (Ciravegna *et al.*, 2019), and the acquisition of strategic assets (Carayannis *et al.*, 2011) can emerge serendipitously and can result in serendipitous outcomes (Carayannis *et al.*, 2016; Denrell *et al.*, 2003; Lane *et al.*, 2021; Murphy, 2011). However, the realisation of serendipitous value is not automatic. Rather, to increase the possibility of realising serendipitous value, firms should cultivate interorganisational learning capabilities (Halachmi and Woron, 2013). Furthermore, the systematic application of predefined strategies does not favour the emergence of serendipity (Chandra *et al.*, 2009). Thus, serendipity involves the capability of firms to exploit opportunities that arise over time through fast reactions to stimuli and the adoption of emergent strategies (Crick and Spence, 2005; Denrell *et al.*, 2003; Dew, 2009).

5.2 Future research agenda

5.2.1 Advancing novel conceptual microfoundations: organisational zemblanity and bahramdipity. Serendipity is positive in nature (Liu and de Rond, 2016), as it is concerned with so-called “happy accidents”. Serendipity entails search, contingency, and prior knowledge (Dew, 2009). It emerged from the red-cluster analysis that scholars have also started to explore some concepts that are strictly related to serendipity as its logical reverse (Giustiniano *et al.*, 2016). For example, entrepreneurs can construct their own misfortunes or suppress any good outcomes caused by serendipity. More precisely, scholars have referred to organisational zemblanity (Giustiniano *et al.*, 2016) in the former case and organisational bahramdipity in the latter case to address these issues (Sommer, 2001). The term “zemblanity” was first introduced by William Boyd (1998) as the logical reverse of serendipity, referencing Zembla, an imaginary barren and cold physical space. Moreover, bahramdipity was based on the same story that originated the concept of serendipity (“The Three Princes of Serendip”). In particular, the term was adopted to describe the cruel and despotic leader Bahram Gur, who suppressed every form of dissent from his subordinates. While scholars from other fields have borrowed and explored such concepts in their domain, it has emerged that there is a scarcity of exploration of organisational zemblanity and bahramdipity in the field of management. Thus, it could be interesting to explore organisational zemblanity and bahramdipity. Importantly, the application of such concepts could offer valuable insights in the management literature to enrich our understanding of why some firms fail to grasp promising opportunities (bahramdipity-related) or activate vicious circles leading to unintended, negative outcomes on firm performance (zemblanity-related). In addition, bahramdipity can offer insights into when individual discretion and explorative capabilities might be suppressed in the name of hierarchical power, and to what extent it might translate into lost strategic opportunities. In contrast, zemblanity can offer an opportunity to diverge from the dominant idea of embedded smartness that characterises most conceptual frameworks in the management literature. Organisational zemblanity shares some aspects with the more widely adopted black swan theory (Taleb, 2007). This theory focuses on those negative unexpected events that are subsequently assessed as predictable and thus (at least partly) manageable, instead of causing serious negative effects in the present. Similarly, Giustiniano *et al.* (2016) argued that the study of organisational zemblanity can contribute to exploring disaster-making as evolving processes. More precisely, as organisational zemblanity embeds a set of sense-making mechanisms concerning social processes, it overcomes the assumption that prudence and professionalism are engrained in highly educated professionals, as they can be both

vulnerable and discontinuous. Moreover, when solving a specific problem, organisations might involuntarily create other problems. Thus, a new theoretical concept was presented in this study that could have epistemic and practical impacts on organisational behaviour (Giustiniano *et al.*, 2016). In particular, there could be potential for enriching the crisis management literature by studying in which circumstances “bad luck” is not purely ascribable to randomness, as it could largely depend on how managers react to adverse events. This would relax the assumption that professionalism and appropriate crisis management are inherent in businessmen. Rather, managers need to be trained and prepared to cope with crises. In addition, future researchers could analyse organisational zemblanity through the black swan theory to examine when some negative effects could be minimised in organisations (under some circumstances) and which cognitive frames can result in managers and entrepreneurs constructing their own misfortunes. Similarly, future researchers could explore the concept of organisational baharamdipity to determine under which leadership styles, such as toxic leadership (Tavanti, 2011), serendipity can be suppressed. In fact, hindering social intertwining among co-workers has been identified as a crucial enabler of serendipity (Biancani *et al.*, 2014). More generally, the scant attention paid to the empirically analysing organisational zemblanity and baharamdipity provides future research opportunities with both epistemic and practical implications.

5.2.2 Managing methodological complexity: reasoning through analogy. From the review, it emerged that there are difficulties in operationalising serendipity and in developing effective research designs to capture its quintessence. It follows that analyses of conditions favouring serendipity and outcomes of serendipity remain limited. In accordance with Dew (2009), the results of this review suggest that serendipity is a multifaceted, nonobvious concept, meaning that it could be a difficult task to properly operationalise serendipity in a quantitative study. Given that it could be valuable to develop viable measures of serendipity, an alternative methodological approach to addressing such a complex and fascinating topic is proposed. In particular, since many foundational theories in management rest on analogical reasoning (Ketokivi *et al.*, 2017), links between domains might constitute a great opportunity to expand our knowledge of serendipity, especially given its interdisciplinary nature and domain of applicability. Analogies can be used to formulate explanations of non-obvious phenomena and spark academic conversations. Moreover, organisational analogies are rigorous methodological tools that form the foundation of many seminal management contributions (Ketokivi *et al.*, 2017). However, the utility of analogies depends on whether the system of relations that holds in the source domain can apply to and also hold in the target domain (Gentner, 1999; Ketokivi *et al.*, 2017). Overall, the potential role of analogies in enriching the management debate suggests a potential for cross-fertilisation between serendipity research in the management field and other streams of research. Thus, researchers are invited to build on analogical reasoning about serendipity (with management literature as the target domain), explore the foundations and contexts of serendipity across different fields and evaluate the possibility of bringing such knowledge into management discourse. This approach could enrich serendipity research on the conditions that favour the emergence of serendipity and its outcomes in the management field, in addition to revealing new insights that borrow from different fields of research.

5.2.3 Leveraging effectuation perspectives. The theoretical perspective of opportunity creation has been adopted to study serendipity, which pertains to entrepreneurial decision-making processes in the broader area of opportunity generation (Maine *et al.*, 2015; Sarasvathy, 2001). This specifically focuses on effectuation, as it emphasises experimentation, searching, and affordable loss when future predictions are highly uncertain (Perry *et al.*, 2012). Because thematic cluster analyses are recommended, scholars have recognised the central role of effectuation theory when analysing serendipitous networks and assets. Moreover, there is great potential to enhance the ongoing academic debates on the drivers of serendipitous foreign

market entry and “unexpected” early growth after internationalisation. Although the opportunity creation perspective was among the most frequently used in the yellow cluster (e.g. [Busch and Barkema, 2020](#); [Carayannis et al., 2011](#); [Denrell et al., 2003](#); [Engel et al., 2017](#)), the number of studies drawing on it in the blue cluster was limited (e.g. [Kiss et al., 2020](#)). In particular, effectuation approaches are centred on the assumption that entrepreneurs initiate new business activities with a generalised aspiration and then try to satisfy such aspirations by using the resources they have at their immediate disposal to take advantage of any environmental contingencies that emerge. Accordingly, drawing on this conceptual perspective in the context of internationalisation ([Prashantham et al., 2019](#)), future researchers can integrate discussions on the role of serendipity in opportunity creation with specific reference to foreign market opportunities. Improvisation and contingencies are two fundamental aspects of effectuation theory. Therefore, effectuation theory could support researchers in clarifying unintentional aspects that might be associated with internationalisation, such as serendipitous encounters in foreign markets or serendipitous opportunities that emerge ([Sarasvathy, 2001](#)). Accordingly, effectuation logic could provide new conceptual insights into how firms can use their resources and build networks to internationalise and increase their growth opportunities abroad.

5.2.4 Leveraging capability-based perspectives. Although serendipity has been conceptualised as a capability rather than an event ([de Rond, 2014](#)), it emerged from the review that only a limited number of studies have leveraged capability-based theoretical perspectives. Accordingly, many research questions remain only partly answered. For example, the questions of why some firms are better than others in realising serendipitous value and why serendipitous encounters have profoundly different outcomes based on location and ambient knowledge remain unanswered. Future researchers could expand knowledge on such aspects through the adoption of knowledge capacity perspectives ([Helfat and Peteraf, 2003](#); [Lichtenthaler and Lichtenthaler, 2009](#)). Absorptive capability is considered the firm’s ability to evaluate, assimilate, and commercialise external knowledge ([Cohen and Levinthal, 1990, 1994](#)). However, this neglects other knowledge processes, such as the internal (serendipitous) generation of knowledge. Recently, scholars have noted that absorptive capacity theory can be complemented with five other knowledge capacities. Here, inventive, transformative, and innovative capacities are regarded as the internal knowledge processes of exploration, retention, and exploitation, while absorptive, connective, and desorptive capacities apply to external processes ([Lichtenthaler and Lichtenthaler, 2009](#)). Future researchers can draw on this capability-based view to expand the knowledge on serendipity at different levels. For example, transformative capacity is concerned with maintaining the results of diverse research activities over time, whereas innovative capacity is based on the conversion of knowledge (either from internal or external sources) into new products. Moreover, the conceptualisation of serendipity does not limit its applicability to a specific domain or source. Rather, serendipity can occur in a multitude of circumstances. Regardless, the realisation of serendipitous value might be widely determined by each of the six knowledge capabilities proposed by [Lichtenthaler and Lichtenthaler \(2009\)](#). Capability-based views and the realisation of serendipitous value are intimately connected. Hence, scholars can draw on capability-based views (e.g. [Helfat and Peteraf, 2003](#); [Lichtenthaler and Lichtenthaler, 2009](#)) to formulate new hypotheses on the realisation of serendipitous value. This could expand our understanding of the circumstances in which potential serendipitous discoveries, serendipitous acquisition of strategic assets, and serendipitous encounters are converted into valuable outcomes and why firms fail to exploit such strategic opportunities. However, the relationship between capability-based views and the realisation of serendipitous value remains limited. Accordingly, identifying through which mechanisms capability-based views affect the chances of realising serendipitous value provides an opportunity for detailed empirical research.

6. Conclusion

The aim of this review was to systematise the main contributions to serendipity in the management literature. The emergence of serendipity in organisations requires a good synthesis of preparation and openness through generative doubt. Furthermore, serendipity plays a critical role in determining business performance and other organisational outcomes. However, this review highlighted that serendipity is indissolubly related to uncertainty and the unknown and is often difficult to capture in quantitative analyses. These aspects have resulted in scholars undertheorising the role of serendipity in management research. Thus, despite the constant increase in research on serendipity, many aspects remain hidden. Finally, based on the cluster analysis, new research opportunities are proposed with the hope that they will support researchers in expanding serendipity literature in new theoretical perspectives and empirical directions.

Notes

1. An emergent strategy, different to intended strategies, is a realised pattern that is not expressly intended from the beginning (Mintzberg, 1978).
2. The first query was performed on May 25, 2021, and an initial bibliometric analysis was carried out. Then, the final extraction of documents was performed on January 15, 2022, to ensure that WoS and Scopus indexed all the 2021 documents within their databases. The query was repeated on February 16, 2022, and no additional articles were found.
3. The Academic Journal Guide 2021 (available at <http://chartereddabs.org/academic-journal-guide-2021>) is provided by the Chartered Association of Business Schools (also referred as the “ABS, 2021”).
4. VisualBib (available at <http://visualbib.uniud.it>) is a real-time visual tool for managing bibliographies and associated metadata.

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