

# STRATEGIC FLEXIBILITY: A BIBLIOGRAPHIC REVIEW OF THE LITERATURE

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## ABSTRACT

*This working paper aims at introducing the relevance of the topic of strategic flexibility and the necessity to systematize existing literature and trace the state of the art of the field due to the rapid and disordered increase in the number of articles published in this area. Preliminary results based on a keyword analysis using bibliometric techniques show the core topics that have persisted and grown over time in association with strategic flexibility, namely dynamic capability, innovation and performance. In addition, emerging themes are highlighted, as business model innovation, internationalisation, big data, ambidexterity, knowledge and new product development.*

## 1. INTRODUCTION

The degree of volatility, uncertainty, complexity and ambiguity that characterizes the business era today has triggered the development of dynamic capabilities that allow actors in the marketplace to navigate changing competitive conditions. One such capability is strategic flexibility (SF) that, from the 70s, has been considered as a way to ‘solve’ the problem of environmental turbulence (Eppink, 1978). SF is defined as an organization’s capability to identify major changes in the external environment, quickly commit resources to new courses of action in response to those changes, and recognize and act promptly when it is time to halt, or reverse existing resource commitments (Shimizu and Hitt, 2004).

SF is a concept that has evolved from strategy through other fields, including management, marketing, innovation, entrepreneurship, organizational learning and knowledge management, internationalization, information technology, operations, etc. In addition, academic interest in this topic has been rising continuously, both theoretically and empirically, resulting in a rapid increase in the number of publications in the last years (Brozovic, 2018). However, despite attempts to consolidate the domain of SF, there remain theoretical and empirical tensions underlying its antecedents, the consequences and contingencies (Herhausen et al., 2020). It is therefore important to systematize existing literature and trace the state of the art of the field, identify its evolution and suggest upcoming avenues for research.

There also exist numerous managerial benefits in investigating the field of SF such as: managers can understand under what business conditions investments into exploration and SF pay off (Stielglitz et al., 2016), its impact on firm performance of small businesses (Chaudhary, 2019), how and why firms that choose SF over operational efficiency are more likely to enter volatile markets (Claussen et al., 2018), and also, how they can leverage SF to shape radical innovation under high uncertainty (Li et al., 2017).

The great variability in the fields of application of the concept of SF and the diversity of its research contexts and conceptualizations have resulted in conflicting findings in the literature (Singh et al., 2013; Ouakouak et al., 2015; Herhausen et al., 2020). Beyond that, existing literature reviews fail to provide a conceptual structure of the field, which can provide a more microscopic view of the area. Thus, the aim of this article is to systematize

existing literature and understand how it has evolved over time, thus tracing its roots, in an attempt to resolve the existing conflicts and debates in the literature. The article would also unveil some gaps and suggest new promising areas for future research.

## **2. METHODOLOGY**

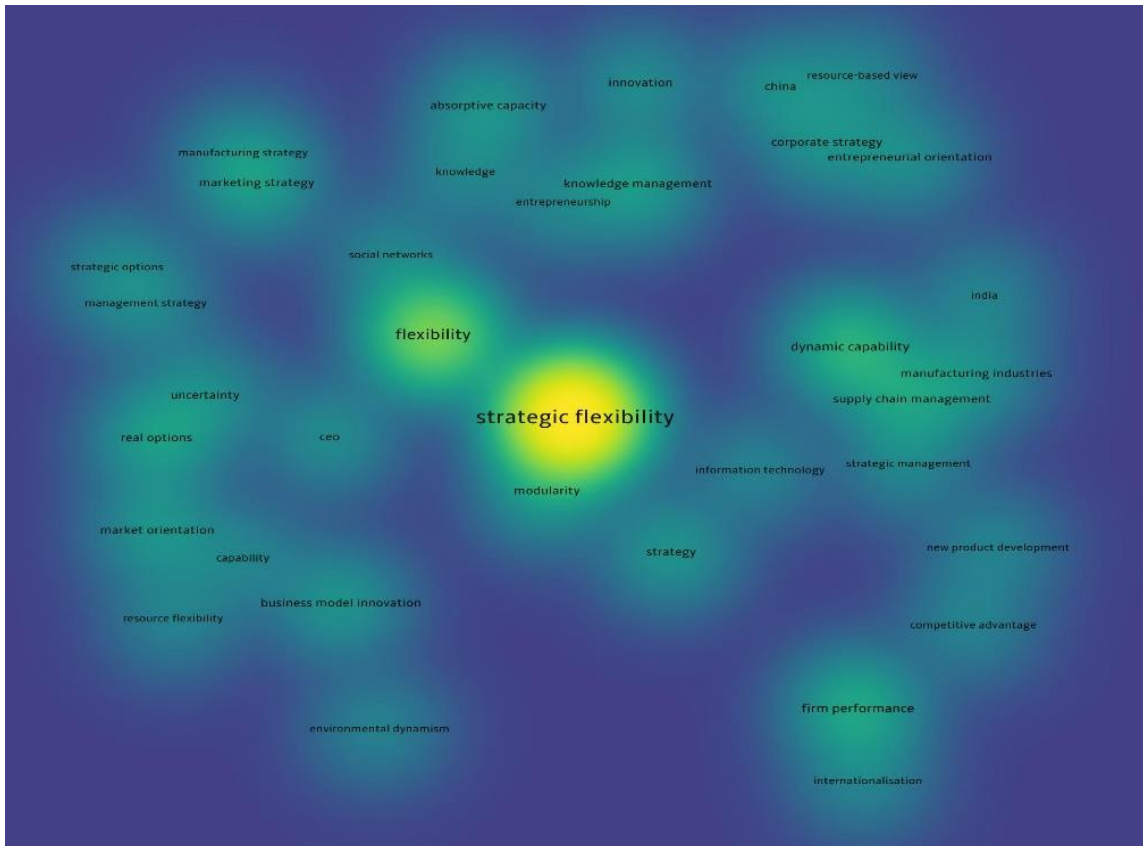
The first step in the review was identifying relevant literature on strategic flexibility by performing a search in ISI Web of Science (WoS) using the key phrase, “Strategic Flexib\*” in the topic. 549 results were obtained from WoS which were reduced to 383 after filtering on WoS categories (Management, Business and Operations Research Management Science), and further to 289 after restricting the document type to articles and the language to English.

After careful reading of the abstracts, the articles that did not fit the topic under investigation were excluded, such as the articles that mentioned strategic flexibility in their topic, abstract or full paper but did not deal with it specifically. In cases where strategic flexibility was not mentioned in the topic or in the abstract, the full paper was carefully probed to examine if the concept was mentioned and how it was used. If it focused on the concept under review, it was included, otherwise, it was eliminated. Some articles focused on other types of flexibilities such as manufacturing flexibilities or supply chain flexibilities. These articles were eliminated if they did not relate these other flexibilities to strategic flexibility. This process brought down the number of relevant articles to 172.

A bibliometric analysis was then conducted to trace the evolution of the literature. Specifically, the co-occurrence of keywords analysis technique was used to reveal the most dominant research topics and those that have persisted over time. This technique was also employed to unveil new emerging themes and suggest new promising areas for future research. This type of analysis is done by counting the number of articles in which two keywords appear in together and their co-occurrence with other keywords. To effectively trace the evolution of the 172 sampled articles, they were divided into two groups according to their publication year: 87 articles are published between 1994 and 2012 and 85 between 2013 and 2020.

### 3. FINDINGS

Figure 1 shows the co-occurrences of keywords over the entire period from 1994 to 2020. Since “Strategic flexib\*” was the keyword used for the search, it is obvious that it is the most cited keyword, indicated by the size of its node and central position. The picture highlights *strategic flexibility* as the keyword that is most frequently cited together with *flexibility* following the size of their nodes, their central position and the fact that they are very close to each other. Subsequent paragraphs enter into the details of the two investigated periods, as explained above.



**Figure 1. General Overview: Co-occurrences of keywords (minimum number of co-occurrence of keywords = 3)**

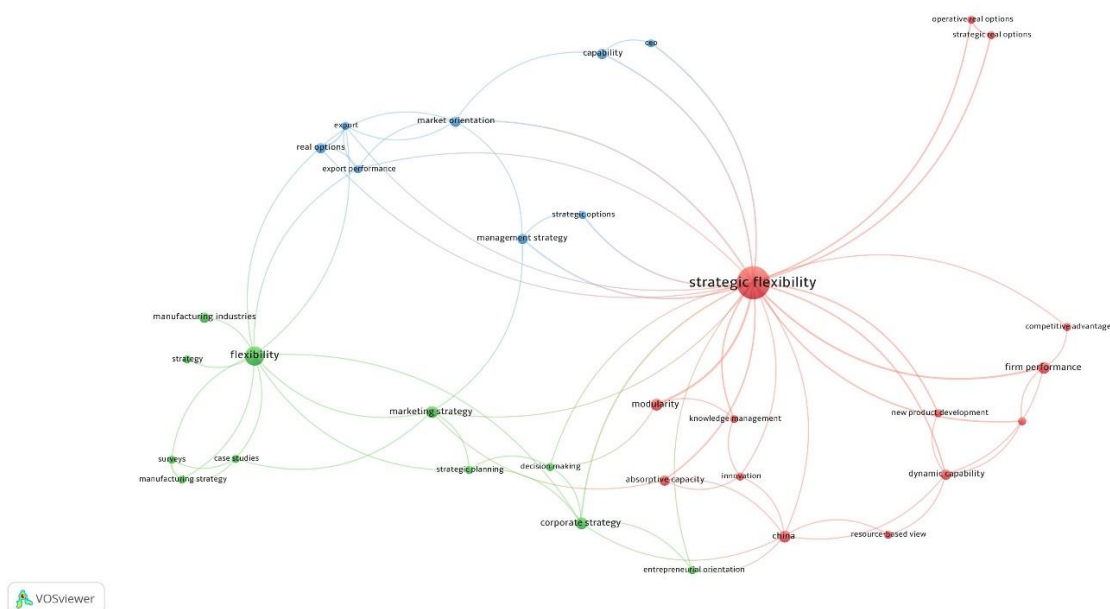
#### 3.1 PERIOD 1: 1994-2012

Indicative by the size of its node and position in Figure 2, the keyword that most frequently appears in the sampled articles is *strategic flexibility*. As anticipated, this is expected as it was used in the search for the articles under review. *Flexibility* is the keyword with the second largest node, meaning it is the second most frequently cited keyword. It is worth noting that there is no direct connection between these two keywords, as there is no line that connects them. They also appear in two different clusters (Red and Green respectively).

The keyword *strategic flexibility* has strong connections with *modularity*, *absorptive capacity* and *innovation* based on the shorter distance between the keywords. *Strategic flexibility* and *firm performance* are frequently cited together based on the thickness of the line connecting them, but their co-occurrence with other keywords is low considering

the distance between them. Looking at the red cluster, it can be said that *strategic flexibility* is a *dynamic capability* that increases *competitive advantage* and consequently improves *firm performance*. Some of these capabilities could include *new product development*, *organizational learning*, and other resources. *China* is the only country mentioned among the keywords and is present in the red cluster.

They keyword *flexibility* is connected to different areas of strategy such as *manufacturing strategy*, *marketing strategy*, *corporate strategy*, *strategic planning and decision making*. It has a strong relationship with *manufacturing industries* which could suggest that these are the types of industries in which research has focused on. The keyword *flexibility* is close to a different cluster of keywords (in blue) composed of *real options*, *export* and *export performance*. The blue cluster highlights management-focused areas such as *CEO* and *management strategy*. The size of the keyword *CEO* indicates however that not much attention has been accorded to it in the area of strategic flexibility.

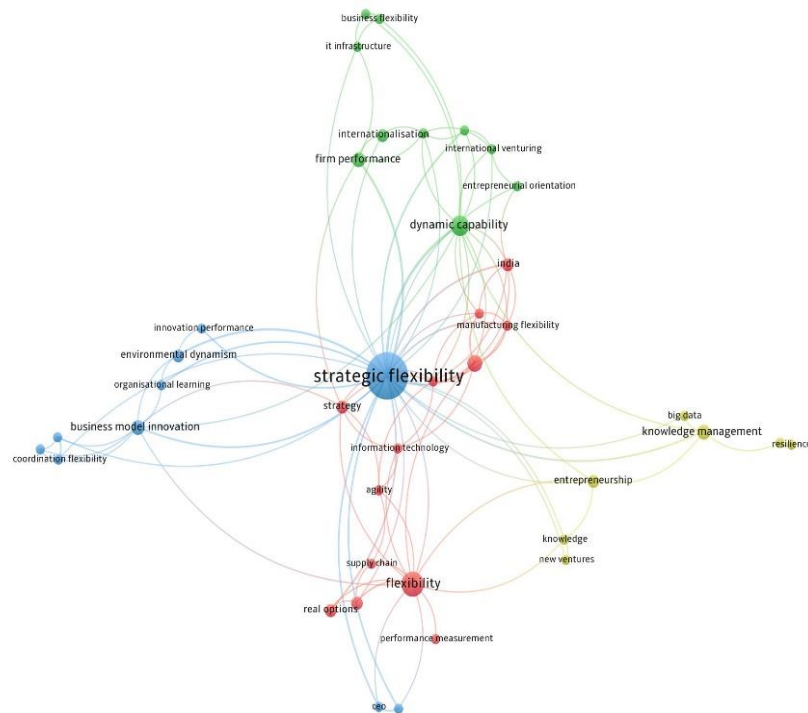


**Figure 2. Co-occurrences of keywords in sampled articles published in Period 1, between 1994 and 2012 (minimum number of co-occurrence of keywords = 2)**

### 3.2 PERIOD 2: 2013-2020

The keyword *strategic flexibility* assumes a more central position in this period as seen in Figure 3. A significant development in this period is the emergence of new keywords such as *big data*, *resilience* and *new ventures*, all featuring in the same cluster (yellow). The picture depicts an increase in the relevance of the keyword *flexibility* as it now assumes a more central position and this time is directly connected to *strategic flexibility* and is very close to it. This indicates an increase in the frequency with which they are co-cited together with other keywords. It is noteworthy that unlike in period 1 where *flexibility* was clustered with strategic-related areas, it is now in the same group with new keywords such as *performance measurement*, *information technology*, *manufacturing flexibility*, *supply chain flexibility* and *supply chain management*. This indicates new types of flexibilities that are gaining attention. Furthermore, the keyword *real options* is now very closely related to *flexibility* as indicated by the shorter distance between them, which shows an increase in relevance of this approach.

There is a growth in prevalence of the keyword *dynamic capability* (green cluster) as indicated by the increase in the size of its node. Now, it is closely related to new keywords such as *international venturing* and *internationalisation*. The thickness of the line and the shorter distance between the keywords *dynamic capability* and *strategic flexibility* indicate a stronger relationship between them. *Firm performance*, which is also in the green cluster, is now closer to *strategic flexibility*, which shows that the concept is continuing to grow. A new keyword that is connected to *strategic flexibility* and also has been frequently cited as seen by the size of its node is *business model innovation* (blue cluster) and the only country mentioned in this period is *India*. *China* is not mentioned at all in this period, which indicates a shift in focus where research is being conducted.



**Figure 3. Co-occurrences of keywords in sampled articles published in Period 2, between 2013 and 2020 (minimum number of co-occurrence of keywords = 3)**

#### 4. CONCLUSIONS

Generally, the literature review reveals the temporal evolution of articles on SF over time. Figure 1 clearly shows a strong recent growth in this body of literature. Figures 2 and 3 highlight core topics that have persisted and grown over time such as SF, flexibility, dynamic capability, innovation and performance. In addition, Figure 3 highlights key emerging themes such as business model innovation, internationalisation, big data, ambidexterity, knowledge and new product development. These open up exciting avenues for new research studies, especially in relation to their impact on continuous innovation in terms of which can be considered enablers, triggers and inhibitors, which practitioners can also benefit from. Future studies are expected to provide a more detailed overview of existing contributions, as well as precise indications on future research.

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