

# Strategic Flexibility: A Review of the Literature

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**Previous literature reviews of strategic flexibility have a number of shortcomings: they lack a specific focus in the field, provide an excessive definitional focus or lack a clear empirical overview of research in the field. To overcome these shortcomings, this paper aims to systematically analyse the literature on strategic flexibility by identifying its main characteristics, linking the different aspects together in a new conceptual framework, and considering the means to measure it. This comprehensive analytical model analyses various aspects of strategic flexibility in the relevant literature (156 contributions). Thus, the systematic and critical approach of this paper offers a novel perspective in understanding strategic flexibility, and contributes to the field by providing a consolidation of the literature and indicating future research avenues.**

## Introduction

As modern society is characterized by irregularity, increased levels of complexity and uncertainty, and reduced levels of predictability (Nowotny *et al.* 2001), it is necessary for the actors in the marketplace to develop the ability to navigate complex business environments. Therefore, strategic flexibility, defined as the ability to handle change (Wright and Snell 1998; Zhou and Wu 2010), has emerged as a crucial organizational requirement in order for actors to thrive in such environments (Li *et al.* 2008; Hamlin *et al.* 2012). Specifically, strategic flexibility allows for the creation and performance of strategic options that respond to or lead a change (Combe *et al.* 2012; Sanchez 1995). In the business world, for instance, Deloitte has been a known advocate of strategic flexibility in many industries (e.g. see Raynor n.d.). Similarly, corporations, such as Apple, define and implement strategies to exploit emerging opportunities, thereby staying ahead of the competition in a visionary and flexible manner (Chaston 2012, pp. 141–142).

Academic interest in this topic has been rising continuously (Combe 2012), both theoretically and empirically, resulting in an increase in the number of publications (see Figure 1). However, the existing

literature appears relatively broad, delineating definitions of strategic flexibility (Roberts and Stockport 2009), suggesting its different forms (Combe and Greenley 2004; Evans 1991) and studying its interaction with niches (Hamlin *et al.* 2012), quality management (Escrig-Tena *et al.* 2011) and networks (Mason and Mouzas 2012), for instance. In an attempt to consolidate the scope of the field, several literature reviews and overviews have been published recently (Combe 2012; de Haan *et al.* 2011; De Toni and Tonchia 1998; Roberts and Stockport 2009; Saleh *et al.* 2009).

However, these reviews have a number of shortcomings. For example, some are concerned primarily with definitional issues; they revisit the existing definitions and create new and more encompassing definitions (Roberts and Stockport 2009). Other reviews compare and connect strategic flexibility to other types of flexibilities (De Toni and Tonchia 1998; Saleh *et al.* 2009) or relate it to similar theoretical concepts, such as robustness, adaptability and resilience (de Haan *et al.* 2011). Although encompassing and multidimensional, these reviews lack a specific focus on strategic flexibility. In addition, few of the aforementioned reviews have offered an overview of the empirical research in strategic flexibility; thus,

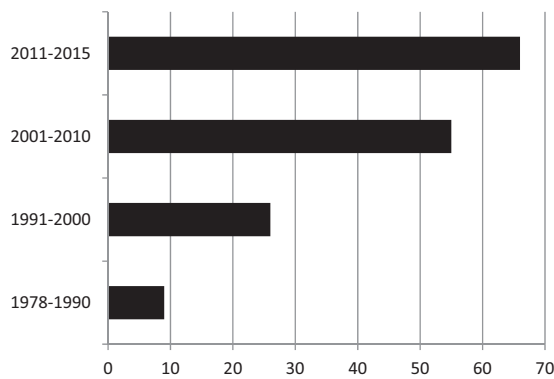


Figure 1. Distribution of identified contributions according to year of publication

they have seldom suggested possible approaches to measurement or indicated underused methodological approaches.

The latest overview of strategic flexibility was presented by Combe (2012). The overview presents existing misconceptions and unresolved issues within the field and proposes several possibilities for future research. Although the overview is undoubtedly a valuable contribution, there is still a need for an alternative, systematic and more comprehensive review that illuminates unaddressed issues and reaches beyond the position of an editorial viewpoint.

Consequently, additional theoretical studies about the concept of strategic flexibility are necessary to bring further consolidation to the field. The lack of consolidation and of common definitions in a scientific field may cause academic findings to reach business reality more slowly (Schutjens and Wever 2000). This type of situation currently prevails within the scope of the strategic flexibility literature, which could create significant problems in the field (Singh *et al.* 2013b). One accepted definition and a set of classifications are, therefore, necessary requirements for further theoretical and empirical analyses (Honjo 2000; Schutjens and Wever 2000). This paper contributes consolidation and comprehensiveness to the literature on strategic flexibility.

More precisely, the purpose of this paper is to systematically analyse the literature in the field of strategic flexibility by identifying its main characteristics, linking the different aspects using a comprehensive analytical model and considering the means to measure it. In doing so, this paper adopts a theoretical analysis model, developed from a meta-review of several other reviews (Anderson *et al.* 1989; Barrales-Molina *et al.* 2014; Croom *et al.* 2000; Edvardsson

*et al.* 2005; Golden and Powell 2000; Hutzschenreuter and Israel 2009; Nordin and Kowalkowski 2010; Shepherd and Rudd 2014). The model, consequently, consists of different aspects of strategic flexibility, offers an extensive overview of the field and serves as an analytical tool.

This paper is, in essence, constructed around the aspects of strategic flexibility identified by the meta-review. First, the scope and coverage of the literature review are explained; the relevant literature is identified; and an overview of the identified contributions, according to the research approach, is offered. Next, the analytical model is developed. The model presupposes that changes in the business environment trigger strategic flexibility, initiating firms to act. Furthermore, the model presupposes that various factors at a firm's disposal can enable the actions of firms or represent barriers to strategic flexibility. The meta-review also recognizes the process of strategic flexibility and identifies the outcomes of strategic flexibility, after which, accordingly, follows an overview of approaches to measuring strategic flexibility. Finally, a discussion is offered, with an emphasis on the interactions between the dimensions, the triggers, the enablers, the barriers, the process and the outcomes of strategic flexibility. Thus, the analytical framework will be reframed to form a suitable starting point for future empirical research. It will indicate, for example, how different combinations of triggers, dimensions, enablers, barriers, processes and outcomes are related and which combinations are more suitable in different situations (see Nordin and Kowalkowski 2010). The paper concludes with suggestions for future research.

## Scope and coverage of the literature review

### *Identification of relevant literature*

The first step in the review was identifying the relevant literature on strategic flexibility. Several scholarly databases (Business Source Premier, Elsevier (Scopus), Emerald, Google Scholar and Wiley) were searched using the key phrase 'strategic flexibility' in titles, keywords and abstracts. The articles that mentioned strategic flexibility but did not deal with it specifically were not considered. Then, the reference lists of the identified papers were scanned to identify other relevant articles, leading to an expansion of the list of articles. It was presumed that the articles identified by this expansion represented

the conceptual basis for the articles identified by the database search. Occasionally, it had to be recognized that some articles may have dealt with issues regarding strategic flexibility, but different terminology was used (e.g. dynamic capabilities, agility, adaptability). These contributions were included only when they more explicitly discussed strategic flexibility, but were largely disregarded because, although the content was similar, they represented independent literature streams. In addition, the review included some articles that addressed flexibility in general or organizational flexibility; these articles were carefully probed to ensure that the issues of what was perceived as strategic flexibility were included in the review, taking into consideration similarities and differences in flexibility and organizational flexibility with the concept of strategic flexibility (e.g. see Dunford *et al.* 2013; Golden and Powell 2000), and the great variability in the fields of application of the concept of flexibility (De Toni and Tonchia 1998; Singh *et al.* 2013b). The final list of 156 contributions related to strategic flexibility included 141 articles, in addition to eight book chapters (Guiette and Vandenbempt 2014; Mejtoft 2014; Sanchez 2012; Sydow 2015; Thourunroje 2015; van der Weerd *et al.* 2012; Verdú-Jover *et al.* 2014; Wu *et al.* 2012) and seven books on strategic flexibility (Bahrami and Evans 2010; Hamel *et al.* 1998; Harrigan 1985; Nandakumar *et al.* 2014; Sushil and Chroust 2015; Sushil and Stohr 2014; Volberda 1998). Three articles (Chen *et al.* 2015; Perez-Valls *et al.* 2015; Stieglitz *et al.* 2015) were advance online publications. Among the identified contributions, 56 were published in 2011 or later, and 100 were published between 1978 and 2010 (see Figure 1). The identified contributions are listed in Appendix I and in the reference list.

Because it is a difficult and complex topic (Combe 2012), strategic flexibility is not simple to study. For the purposes of this study, certain choices regarding the scope and coverage of the literature review needed to be made, despite the potential risk of omitting relevant articles that discussed similar issues, but used different terminology. This limitation can be amended in future theoretical studies by including an expanded set of keywords; however, 156 contributions represent a sufficient basis for a relevant review of literature. The search, like the review, was selective in the sense that it focused on contributions within strategic management and strategic marketing, but it largely disregarded articles on supply chain flexibility, workforce flexibility and other non-related flexibilities, for instance.

The identified contributions are both conceptual and empirical, and they encompass a wide range of industries (e.g. high-tech, IT, retail and service) and national markets. If a contribution was empirical, no preferences were made between the quantitative and qualitative studies; however, certain trends regarding the research approach to strategic flexibility over time were observed. Out of 35 identified contributions published in the year 2000 or earlier, 26 were conceptual (books and literature reviews were included; 11 out of 26 had empirical examples) and only nine were empirical studies. In 2001 and later, this changed significantly: 29 contributions were conceptual (six with empirical examples) and 92 were empirical.

In the majority of the empirical studies in the field of strategic flexibility, quantitative methods were preferred. More specifically, in 82 out of 101 empirical studies (see Figure 2 for the distribution of the identified contributions according to the research approach), the quantitative research approach was applied. The structural equation modelling and regression analyses are the most common methods used, applied in 73 studies, followed by other quantitative research designs, applied in nine studies (e.g. experiments, factor analysis). Measurement approaches to strategic flexibility in relevant quantitative research will be discussed in a subsequent section.

Case studies were conducted in all the studies on strategic flexibility that applied a qualitative research design. There were multiple case studies in 14 articles and single case studies in five articles. While most of the qualitative studies did not extensively report on the analysis, most of them followed research considerations by Eisenhardt (1989) or Yin (2009). In addition, five articles out of 19 summarized previous research projects conducted by the authors, two used the grounded theory approach for the analysis (Dibrell *et al.* 2007; Guiette and Vandenbempt 2014), and one exhibited the traits of action research (Gylling *et al.* 2012).

#### *Development of the analytical model*

The second step in the literature review was to determine the fundamental elements of the concept of strategic flexibility. This determination provided the basis for a well-founded overview and critique of the identified contributions. Following the method of Nordin and Kowalkowski (2010), a meta-review of several review papers (Anderson *et al.* 1989; Barrales-Molina *et al.* 2014; Croom *et al.* 2000; Edvardsson *et al.* 2005; Golden and Powell 2000; Hutzschenreuter

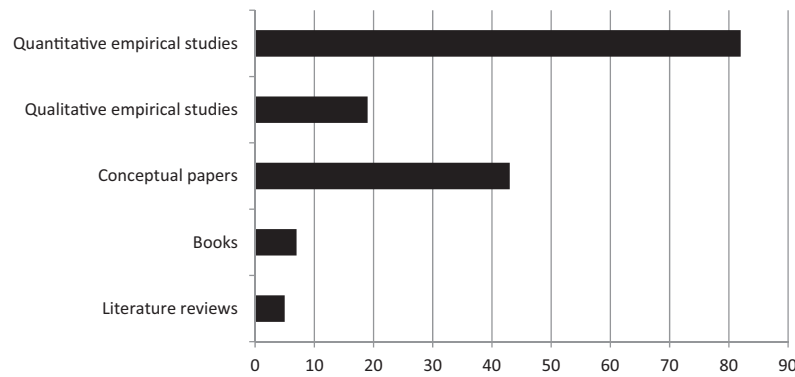


Figure 2. Distribution of the identified contributions according to research approach

and Israel 2009; Nordin and Kowalkowski 2010; Shepherd and Rudd 2014) was conducted. The selection of the identified aspects was then confirmed through another meta-review of the existing reviews on strategic flexibility (Combe 2012; de Haan *et al.* 2011; De Toni and Tonchia 1998; Roberts and Stockport 2009; Saleh *et al.* 2009). The meta-review identified four main elements present in the literature: dimensions; antecedents; process; and outcomes.

The next step was the review of the 156 contributions. During this review, the need arose to expand the analytical model. The analysis of the antecedents was inadequate, considering the need to distinguish between the nature of changes in the business environment and the nature of the internal enabling base that a firm can use to exercise its strategic flexibility. While the former kindles action in the firm, the latter determines how the firm can act (or cannot act) in response to changes. The model was, therefore, expanded to include triggers, enablers and barriers to strategic flexibility. The expansion and development of the model was necessary, owing to several factors: (1) the differences in the nature between the triggers, on one hand, and the enablers and barriers, on the other; (2) the frequency with which triggers and enablers occurred in the literature; (3) the inadequate but present discussion about the barriers to strategic flexibility; and (4) the need to illuminate the counterbalance of enablers and barriers as driving forces of strategic flexibility.

The analytical model is presented in Figure 3.

The analytical model presupposes that changes in the business environment ‘trigger’ the strategic flexibility of a firm and that the firm, subsequently, acts in relation to these changes. Essentially, this premise is based on the meta-reviews of the literature reviews on other topics in general, on strategic flexibility in

particular, and on the review of the identified contributions. The nature of the actions falls under the label of the ‘dimensions’ of strategic flexibility; however, the actions are also either ‘enabled’ or ‘hindered’ by various factors that the firm has at its disposal. The availability or lack of such factors has the potential to propel or constrain the strategic flexibility of the firm. Furthermore, the process of strategic flexibility indicates how the firm performs and achieves strategic flexibility in practice, while the final results in the model are the outcomes of strategic flexibility. Thus, the analytical model of strategic flexibility delineated in Figure 3 not only serves as a means of analysis for the literature review at hand, but it also has the potential to be applied empirically, because of the complex relationships that it implies. Even if some of these relationships have been indicated in the relevant literature (e.g. Fredericks 2005; Sanchez 1995), this model holds an advantage, as it analyses the relationships more broadly and synthesizes them in a more refined manner. This potential application of the model will also be developed in the discussion section of this paper.

## Dimensions of strategic flexibility

Strategic flexibility has not been unanimously defined, which, some have claimed, has led to relatively negative implications for the development of the field (Singh *et al.* 2013b). The extensive overview of definitions in this paper is an attempt not to provide a new definition, but to extrapolate the term’s dimensions and offer implications regarding the triggers of strategic flexibility and the means by which it is performed (as examples of the latter, see definitions by Lau 1996; Sanchez 1997; or Shimizu and Hitt 2004).

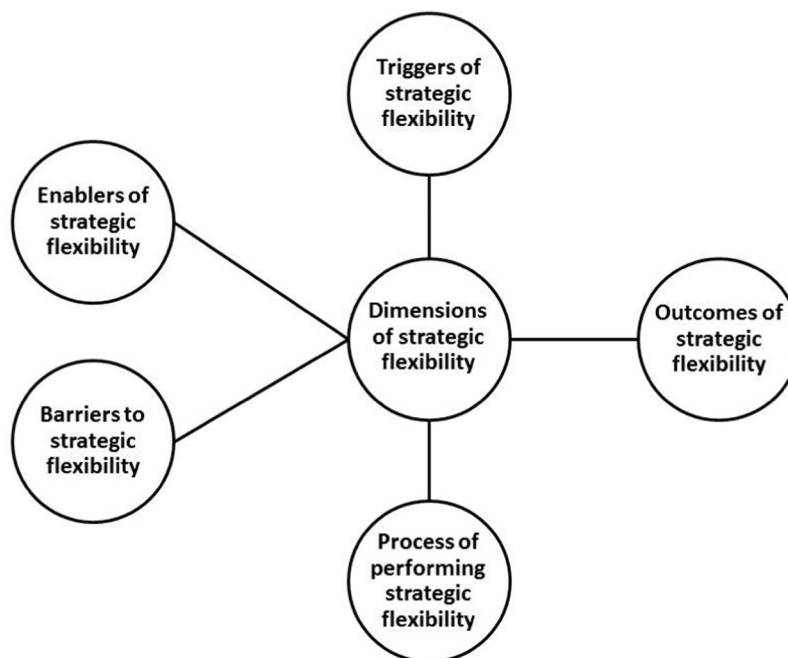


Figure 3. The analytical model (adapted from Nordin and Kowalkowski 2010)

In pursuing the latter goal, the search for a single definition would seem relatively limiting.

The existing definitions according to the identified dimensions are presented in Appendix II. A total of 83 unique definitions were identified. Definitions consisting primarily of quotes or extensive references to earlier contributions were not included. Nevertheless, the frequent referencing of other authors was duly noted and the extensive quoting of articles by Aaker and Mascarenhas (1984), Evans (1991), Grewal and Tansuhaj (2001), Johnson *et al.* (2003), Sanchez (1995) and Shimizu and Hitt (2004) was identified.

To describe the processes of extrapolation and grouping, consider the definition of strategic flexibility as ‘the ability of an organization to respond to changes in the environment in a timely and appropriate manner with due regard to the competitive forces in the marketplace’ (Das and Elango 1995, p. 62). In this instance, the dimensions of ‘response’, ‘a timely manner’ and ‘an appropriate manner’ were sorted accordingly, while ‘changes in the environment’ and ‘the competitive forces in the marketplace’ were categorized under triggers.

Strategic flexibility has been conceptualized predominantly as a responsive, reactive ability. Its responsiveness to changes in the business environment was noted early on (Das and Elango 1995; Eppink

1978; Sanchez 1995). For instance, strategic flexibility was defined as a firm’s ability to reconfigure resources and activities quickly in response to environmental demands (Wright and Snell 1998) and as a ‘firm’s abilities to respond to problems speedily, rethink its activities and strategies, and better meet environmental demands’ (Escrig-Tena *et al.* 2011). The reactive understanding of strategic flexibility appeared to persevere. For example, strategic flexibility was posited as the ability to allow for a key response to environmental changes, particularly when faced with fierce competition (Fernández-Pérez *et al.* 2012).

In contrast, although the proactive dimension of strategic flexibility also was recognized quite early (e.g. Evans 1991; TenDam 1987), it clearly appears to have been less dominant than its responsive dimension (Johnson *et al.* 2003) until recently (Sushil 2015). Out of 83 presented definitions, the proactive dimension was mentioned in 24, and those definitions were primarily recent. Proactive strategic flexibility is most frequently referred to in relation to creating new markets (TenDam 1987), influencing the environment (de Leeuw and Volberda 1996), changing game plans (Harrigan 1985; Young-Ybarra and Wiersema 1999), acting on opportunities (Grewal and Tansuhaj 2001; Perez-Valls *et al.* 2015) or simply ‘proacting’ to changes in the business environment

(Shimizu and Hitt 2004; Sushil 2015) or leading the change (Combe *et al.* 2012). In summary, it can be concluded that strategic flexibility is related not only to a firm's reaction to changes in the business environment, but also to its ability to model, shape and transform its environment.

In addition to the reactive and proactive dimensions of strategic flexibility, the literature recognizes the intentional dimension, which takes the form of the offensive and defensive measures taken by the firm (Evans 1991; Ling-Yee and Ogunmokun 2013; Matthyssens *et al.* 2005). Evans (1991) posited that these measures arise from the need to act pre-emptively or to recover from the consequences of changes, and it is claimed that the measures are closely related to the notion of timely responses, which are important aspects of flexibility (Das and Elango 1995; Escrig-Tena *et al.* 2011). However, although it can be supposed that firms that act more swiftly are, in general, more flexible, the continuous renewal and change of strategies as the business environment changes have been accentuated (Nadkarni and Narayanan 2007; Petersen *et al.* 2000; Srivastava and Sushil 2014). Thus, a firm is required not only to act swiftly in a particular moment, but also to allow itself constantly to develop, change and reframe its strategies over longer periods of time in order to be strategically flexible. In a similar vein, some authors distinguished between flexibility in the short, medium and long term; strategic flexibility is, according to this view, long-term flexibility (Carlsson 1989; Golden and Powell 2000). Other authors related strategic flexibility to advance preparation for futures that they cannot predict (Raynor and Leroux 2004).

In summary, the definitions of strategic flexibility have been analysed to extrapolate its dimensions and to provide some guidance for its other aspects (see Figure 3). The review of the definitions reveals a strong emphasis on the responsiveness of strategic flexibility; however, more recent conceptualizations established its proactive dimension. According to this view, firms not only respond to uncertainties and changes, but also have the ability to shape and transform their given environment (or perhaps even create a completely new one). Furthermore, the authors claimed that a firm can approach these changes in either an offensive or a defensive manner, but it is necessary to act swiftly within the proper amount of time and simultaneously and continuously to match the strategies to the environment over longer periods of time. Essentially, the literature states that strategic

flexibility is activated as circumstances in the environment change; this connection is the focus of the next section.

#### *Triggers of strategic flexibility*

The majority of the definitions assert that changes in the business environment trigger strategic flexibility (e.g. see Combe *et al.* 2012, Grewal and Tansuhaj 2001; Johnson *et al.* 2003; Nadkarni and Narayanan 2007). These changes can be either predictable or unpredictable (Eppink 1978; Fernández-Pérez and Gutiérrez 2013; Young-Ybarra and Wiersema 1999); they can take the form of continuous changes and disturbances (de Haan *et al.* 2011) or manifest themselves as opportunities or threats (Grewal and Tansuhaj 2001; Hamlin *et al.* 2012). They are also irreversible (Zhang *et al.* 2014).

Although most authors mentioned changes in the business environment in relatively broad and general terms, some specifically mentioned uncertainties (Fredericks 2005; Lau 1996; Ouakouak and Ammar 2015) and competitive forces (Fernández-Pérez *et al.* 2012; Hitt *et al.* 1998; Sanchez 1995); however, more recently, the combined influence of various factors arising from the complexity of modern markets has been observed (e.g. see Combe 2012; Thomas 2014).

The sources of the uncertainties that can trigger strategic flexibility may vary. For instance, the uncertainties can be competition or supplier related (Dreyer and Grønhaug 2012; Sutcliffe and Zaheer 1998), or they can stem from unpredictable demand fluctuations and advances in technology (Grewal and Tansuhaj 2001). Furthermore, strategic flexibility helps firms surmount economic and political crises (Grewal and Tansuhaj 2001; Roberts and Stockport 2009), sector declines (Filatotchev and Toms 2003) and regulatory uncertainties (Engau *et al.* 2011). It is, thus, seen to emerge as a manner of exerting control over uncertain environments (Evans 1991; Fredericks 2005) and reducing uncertainties by allowing firms to develop strategic variety (Lau 1996).

Some authors claimed that strategic flexibility could also be triggered in response to competitive actions (Kurt and Hulland 2013; Sanchez 1995). In other words, firms that want to maintain a competitive advantage must continuously be one step ahead of their competitors (Lau 1996). Furthermore, the levels of competition have only been increasing (Thomas 2014) hand in hand with the rising complexity of the conditions in modern markets (Combe 2012).

According to the literature, these complex conditions have been characterized by globalization, current management practices in the market, the recent economic crisis, changes in consumer preferences, strong and unpredictable fluctuations in demand and supply, more frequent changes in internal and external environments, the complexity of the value network, emerging technological solutions, changes in government regulations and the power shift towards customer interaction and partner networks (Combe 2012; Dreyer and Grønhaug 2012; Hitt *et al.* 1998; Schön 2012; Thomas 2014). In the words of Nadkarni and Herrmann (2010, p. 1050), 'With increasingly intense competition, shrinking product cycles, accelerated technological breakthroughs, and progressively greater globalization, the business arena may best be described as being in a chronic state of flux, with continual variation in its external environment'. Thus, it has been suggested that strategic flexibility may be crucial for the survival of firms because of the characteristics of this new competitive landscape (Hitt *et al.* 1998) in which markets become increasingly more intense and unpredictable and changes in the business environment are constant or even accelerated (Normann 2001). The most commonly mentioned environmental triggers of strategic flexibility, according to their dimensions and types, are listed in Appendix III.

In summary, the literature claims that, regardless of the actual sources of changes in the environment (competition, uncertainty or complexity, for instance), firms should develop preparedness to cope with and face uncertainties (Sanchez 1997). Some of these changes have been designated as expected and unexpected; a firm can also experience them as opportunities or threats. However, a change can be a one-time event that disturbs the given order, or it can appear more continuously over a longer period of time. In either case, different firms act on the same types of changes differently, and they develop (or neglect to develop) enablers that allow them to exercise strategic flexibility. The next section continues the review of the portrayal of enablers within the scope of the literature.

### *Enablers of strategic flexibility*

The enablers discussed within the scope of the literature were strategic options that led to strategic variety, flexible resources, strategic planning, the role of management and management competence, among other factors. The identified enablers have been grouped un-

der three categories: strategy, orientation and culture, and resource-related enablers (see Appendix IV).

By using strategy-related enablers, a firm's strategies are assumed to be accompanied by the structures and processes designed to facilitate their implementation. The prevailing organizational culture and orientation of the firm enable flexibility and are the result of more formalized factors, such as strategies, processes, guidelines and capabilities (Nordin *et al.* 2014). In addition to these categories of enablers, resources in the form of financial resources, slack resources, technology and the combination of resources that the firm can use in the development of strategic flexibility are listed in a separate category.

In a number of the contributions that were assessed, a mechanism of how strategic flexibility is executed in practice was indicated. Essentially, it concerns the creation and choice of a strategic option appropriate for a given situation in which the options are considered to be a proxy for strategic flexibility (Combe *et al.* 2012). Thus, Harrigan (1985) and Carlsson (1989) signal changes and adaptations of existing strategies with the aim of appropriately positioning the firm; it is said that strategic flexibility 'reflects how the firm positions itself with respect to a menu of choices for the future' (Carlsson 1989, p. 187). One such outline has been offered in Evans' (1991) suggestion to create strategic options for specific occasions. He lists a set of four so-called archetypal manoeuvres (pre-emptive, exploitive, protective and corrective); these manoeuvres are activated by the firm, according to the given triggering episode (e.g. see also Kazozcu 2011). Similarly, in his well-cited articles, Sanchez (1995, 1997) elaborated on the creation of appropriate strategic options through the coordination of flexible resources as a source of strategic flexibility. The establishment of strategic variety and the successful implementation of a strategy adequate for a particular situation were discussed at a later time (e.g. Phillips and Tuladhar 2000; Tan and Zeng 2009), and these factors appeared to be highly relevant enablers.

Expanding the literature further, recent contributions add layers of specificity to strategic flexibility by detailing where strategic variety can be sourced and what organizational practices contribute to it. Thus, the authors mentioned systemic contingency planning and niche strategies (Hamlin *et al.* 2012), they focused on strategic flexibility in the business network context (Mason and Mouzas 2012), and they explored the interplay between strategic flexibility and ambidexterity (Kouropalatis *et al.* 2012).

Another interesting enabler of strategic flexibility is the role of new technologies. For example, IT offers exciting new possibilities to exercise strategic flexibility and adds to strategic variety because of the power of digital technologies to reconfigure existing markets and shape new ones (Normann 2001). Research in strategic flexibility, particularly in this direction, has expanded recently (e.g. Chen *et al.* 2015; Rajala *et al.* 2012; Reddy 2006).

Regarding market orientation and environmental scanning as enablers of strategic flexibility (e.g. Engau *et al.* 2011; Johnson *et al.* 2003), more recent contributions seem to move from the analysis of data within product or market boundaries to contextual knowledge; it is, therefore, essential that the firm understands what the business or product can do for the customer and why (Logman 2008). Thus, it has been claimed that strategic flexibility requires not only market orientation (the value and assimilation of market information), but also acquisition, assimilation and a broader response interrelated with internal resources, technology and the macro environment (Celuch and Murphy 2010).

The review of enablers in the literature leads to several conclusions. First, the understanding of strategic flexibility and its reflection in the literature is continuously evolving. Whereas the older literature recognized and emphasized certain enablers, such as strategic variety, slack resources or technology, new enablers, such as organizational knowledge and the flexibility of business models, are being recognized. This change in focus indicates an expansion of theoretical and empirical knowledge. Second, the literature appears to indicate the broadness of the enablers of strategic flexibility, implying that firms may have a myriad ways from which they can source the strategic variety at their disposal. Some of them (e.g. flexible resources, strategic planning and the role of management) have been related to strategic flexibility more frequently and some (niche strategies, geographical dispersion and outsourcing, for example) less frequently; however, the process by which they enable strategic flexibility, independently or in combination, has been studied in a limited manner (e.g. see Combe *et al.* 2012; Sanchez 1995). Before reviewing the process of strategic flexibility, this paper will assess the barriers to strategic flexibility.

### *Barriers to strategic flexibility*

The barriers to strategic flexibility are factors hindering the actions of a firm vis-à-vis changes in the

environment (see Appendix V for an overview). Barriers have been touched on in the literature, but they have only occasionally been studied specifically (e.g. Shimizu and Hitt 2004; Singh *et al.* 2013a). Nevertheless, they are relevant and contribute to the achievement of strategic flexibility.

Rigidity is most frequently mentioned as a barrier to strategic flexibility. Rigidity should not be confused with robustness or stability; indeed, it has been suggested that flexibility must be balanced with stability to maintain a continuity (Combe 2012; Kasper and Mühlbacher 2006) in which the friction between strategic consistency and strategic flexibility is deemed to be one of the critical challenges in strategic marketing (Parnell 2005). Furthermore, the sources that cause dynamism in an earlier stage may become a source of rigidity in a later stage (Tan and Zeng 2009). This is called 'the paradox of flexibility' (de Leeuw and Volberda 1996), which implies that flexibility incorporates both change and preservation.

TenDam (1987 p. 11) interestingly expressed these notions: 'We notice flexibility like the health or peace – by the lack of it. When things are really flexible, however, when an organization responds smoothly to change, we usually do not experience flexibility, but stability.' This observation is in line with Tan and Zeng (2009), who stated that the benefits of flexibility are first visible when they are needed. In contrast, rigidity is described as narrow-mindedness and has been contrasted with over-flexibility (TenDam 1987). In this sense, excessive routinization and institutionalization have also been mentioned as barriers to strategic flexibility (Dibrell *et al.* 2007; Sanchez 1997), primarily because they limit possibilities for achieving the needed levels of strategic variation. According to Sydow (2015), this barrier can be amended by constantly balancing innovation with routinization. In contrast, over-flexibility is basically over-responsiveness to various types of environmental changes. This understanding can lead to the conclusion that there is an optimal level of strategic flexibility (also suggested by Tan and Zeng 2009). Too much flexibility (over-flexibility) can damage the firm just as acutely as a lack of flexibility (rigidity). In other words, it can cause a firm to lose its focus (Das and Elango 1995).

Although the literature on strategic flexibility does not explicitly mention the sources of rigidity, other established literature traits can provide additional insights. For example, Leonard-Barton (1992) suggested that core rigidities, inappropriate sets of knowledge embedded in the firm's values, skills,



managerial systems and technical systems, can actively create problems for the firm and inhibit its development. To survive in a swift-moving environment, the firm must constantly redefine its core capabilities or initiate new ones. Another suggested source of rigidity is the business model of a firm (Chesbrough 2003; Chesbrough *et al.* 2006), which can be overcome by implementing open innovation platforms from which strategic flexibility can be sourced (see West 2014; West *et al.* 2014).

The negative influence of poor management practices has frequently been accentuated as a barrier to strategic flexibility (Matthyssens *et al.* 2005; Parnell 2005). For instance, the attitudes, practices and behaviour of the management pose an obstacle to proper responses to environmental changes (Carlsson 1989; Kouropalatis *et al.* 2012; Shimizu and Hitt 2004). Some research suggests that the level of flexibility varies in relation to the level of the firm; thus, middle managers would most likely emphasize consistency, whereas top management would emphasize flexibility (Parnell 2005).

A lack of financial resources has also been mentioned as a factor that hinders strategic flexibility (Das and Elango 1995; Eppink 1978; Singh *et al.* 2013a); however, costs increase in the short-term, whereas the benefits of strategic flexibility are experienced in the long-term (Johnson *et al.* 2003). Ebben and Johnson (2005) have remarked on the need to balance efficiency and flexibility because of the necessary trade-off between the two (see also Heimeriks *et al.* 2015).

Barriers to strategic flexibility have also been related to enablers. For instance, Volberda (1998) linked enablers to barriers through the dimensions of technological, structural and cultural enablers. He noted that firms infuse rigidity or flexibility by implementing the appropriate technologies of production (e.g. traditional production lines vs. flexible work stations), routine vs. non-routine technology, traditional vs. dynamic organization forms (e.g. functional vs. network forms) and appropriate organizational culture (Volberda 1998, pp. 122–183). IT can equally propel or constrain the strategic flexibility of a firm (Reddy 2006). In addition, another link between the enablers and barriers to strategic flexibility is through management practices, which can either enable (e.g. Combe *et al.* 2012; Evans 1991) or hinder strategic flexibility (e.g. Hamlin *et al.* 2012).

Other barriers have also been mentioned, such as a lack of proper information and feedback from the business environment (Shimizu and Hitt 2004), a lack of skilled personnel, a lack of training facil-

ities, technology obsolescence, a lack of R&D facilities, a lack of supplier competences, resistance to change within the industry (Singh *et al.* 2013a) and financial, strategic and/or emotional exit barriers that lock firms in an industry (Harrigan 1980). Interestingly, resistance to change in relation to strategic flexibility has been mentioned only sporadically (e.g. Skordoulis 2004), perhaps because it is more typical in the field of organizational change. In addition, it has been repeatedly emphasized that flexibility may be suitable only in particular situations in the market and in specific industries (Das and Elango 1995; Nadkarni and Narayanan 2007; Verdú-Jover *et al.* 2014).

In summary, there is a lack of research focusing specifically on barriers to strategic flexibility. The most frequently mentioned barriers are organizational rigidity, the negative influence of poor management practices, a lack of resources for handling the costs of strategic flexibility, and other barriers closely related to the enablers. In general, barriers limit the scope and preparedness for change, while decreasing the possibilities for achieving variation. Literature reaching beyond the scope of strategic flexibility may provide additional insights about barriers to strategic flexibility, such as sources of rigidity.

### *The process of strategic flexibility*

Strategic flexibility has been critiqued because of the lack of concrete steps in the application and structured design, both conceptually and practically (Skordoulis 2004). Nevertheless, a number of authors focused on the process of achieving strategic flexibility and how it is performed in practice (see Appendix VI for an overview). According to the early conceptualizations of strategic flexibility, understanding it as a responsive ability, a firm initially focuses on identifying and evaluating specific traits of environmental change and secures adequate resources that can be transferred to the creation of strategic options and alternative courses of action that can be applied in a particular situation. The firm then chooses and implements the most appropriate option (Aaker and Mascarenhas 1984; Sanchez 1995; Wright and Snell 1998). Some authors have referred to this as ‘tactical flexibility’ (Fredericks 2005). Essentially, it has been suggested that a firm should develop strategic variety and, subsequently, find or change the strategy so that it most suitably matches the changed conditions in the business environment (e.g. Verdú-Jover *et al.* 2006; Winfrey *et al.* 1996; Wright and Snell 1998). This understanding still

appears to prevail; a firm should modify its behaviour to the characteristics of the external changes (Arafa and ElMaraghy 2012).

The process is depicted in a similar manner when the proactive strategic flexibility is taken into consideration. For instance, Shimizu and Hitt (2004) described the process in their definition of strategic flexibility: 'The 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, p. 44). The authors delineated three stages of the process: attention, assessment and action; other authors have stressed the importance of awareness prior to attention (Lau 1996; Rajala *et al.* 2012). Raynor and Leroux (2004) delineated similar stages to achieving strategic flexibility, while other contributions depicted, for instance, the stages of the identification of resources, the acquisition of resources, the deployment of resources and the identification of options that allow for the configuration and reconfiguration of value propositions (Johnson *et al.* 2003).

Building on and expanding the existing knowledge, more recent contributions continue to investigate the process of strategic flexibility; the process has, thus, been related to other managerial practices and strategies, such as quality management (Escrig-Tena *et al.* 2011), network perspective (Mason and Mouzas 2012), niche marketing (Hamlin *et al.* 2012), service management (Gylling *et al.* 2012) and export market orientation (Cadogan *et al.* 2012). In line with this development, several mechanisms for achieving strategic flexibility have been suggested; for example, some authors found that certain practices of quality management (leadership, information and analysis, supplier management and process management) contribute to strategic flexibility (Escrig-Tena *et al.* 2011), and other authors suggested more concrete tools, such as scenario planning (Raynor and Leroux 2004) or decision trees (Maitland and Samartino 2012).

The literature suggests that strategic flexibility is practised not only at the strategic level of the organization; strategic options, as the source of strategic flexibility on the general firm level, may appear in other organizational levels (Combe *et al.* 2012). Thus, strategic flexibility empowers employees to configure and reconfigure unique value propositions (Johnson *et al.* 2003) and benefits different organizational levels (Zhang 2005); indeed, strong links

between strategic and operational flexibilities have been suggested (De Toni and Tonchia 1998). Even a single department, such as an operational unit or a production plant, may have strategic and tactical flexibilities (Cannon and St. John 2004), which are then sources of strategic options on the firm level. These notions seem to correspond to the flexibility maturity model, which states that strategic flexibility is built on flexibility in individual processes, flexibility in the interaction of processes and flexibility in actors (Sushil 2014). Thus, strategic options that contribute to the strategic variety of the firm can emerge at both the strategic and operational levels.

### *Outcomes of strategic flexibility*

The most frequently mentioned outcome of strategic flexibility is financial performance; the higher the level of strategic flexibility, the higher a firm's financial performance. This is confirmed in virtually all the main empirical studies (e.g. Combe *et al.* 2012; Nadkarni and Narayanan 2007; Saini and Johnson 2005; Verdú-Jover *et al.* 2014) and indicated by many other sources (Cadogan *et al.* 2012; Chen *et al.* 2015; Hitt *et al.* 1998; Roca-Puig *et al.* 2005), although occasionally with some limitations. For instance, this relationship is extensively moderated by competitive intensity, environmental munificence, resource combinations and managerial ties (Guo and Cao 2014). The extensive literature perspectives regarding the outcomes of strategic flexibility are synthesized in Appendix VII.

Another frequently mentioned beneficial outcome of strategic flexibility is competitive advantage (Nandakumar *et al.* 2014; Winfrey *et al.* 1996; Zhang 2005). For instance, Sanchez (1995) posited that competitive advantage is achieved by employing the process of strategic flexibility, thereby allowing managers to face environmental uncertainties and increase their firm's abilities to adapt. His line of thought is followed by other authors who think that competitors will struggle to imitate particular strategic options (Combe and Greenley 2004); however, as the environment is hardly static, firms need to sustain their competitive advantage through continuous adaptations, which is where some researchers link strategic flexibility and dynamic capabilities more closely (Rindova and Kotha 2001). Dynamic capabilities, in this sense, also have the potential to contribute to sustained competitive advantage (e.g. see Cavusgil *et al.* 2007; Wang *et al.* 2015a). Thus, strategic

flexibility contributes to the longevity (de Geus 2002) and sustainability (Sushil 2015) of the firm.

Furthermore, strategic flexibility reduces risk (Das and Elango 1995) and uncertainty (Ramírez *et al.* 2012). It also increases resistance in times of turbulence (Levy and Powell 1998), institutional upheavals, such as the Eastern European transition (Newman 2000) and crises (Grewal and Tansuhaj 2001). Some authors have concluded that strategic flexibility is more beneficial in dynamic environments characterized by persistent trends and infrequently occurring structural shocks (Stieglitz *et al.* 2015). Strategic flexibility also helps emerging market firms in international venturing (Liu *et al.* 2013; Zhang *et al.* 2014), it positively effects internal efficiency (Levy and Powell 1998) and consolidates an appropriate organizational structure (Javalgi *et al.* 2005). More recently, it has been associated with customer focus and service, as it leads to higher customer performance (Dibrell *et al.* 2007; Theoharakis and Hooley 2003) and increased perceived service quality (Gylling *et al.* 2012).

In regard to the proactive side of strategic flexibility, the exploration and realization of new markets (Das and Elango 1995) along with new product development (Kandemir and Acur 2012) are named as the most frequent outcomes. Indeed, some authors claimed that strategic flexibility, particularly in decision-making, strongly contributes to the strategic performance of a firm's new product development programme (Kandemir and Acur 2012). According to the literature, another beneficial outcome involves increased innovation capabilities; the potential absorptive capacity for developing explorative innovation is higher in a strategically flexible organizational culture, which induces innovativeness (Zhou and Wu 2010). Authors have noted increased innovation capabilities (Fan *et al.* 2013; Li *et al.* 2008) and a positive influence on entrepreneurial orientation (Arief *et al.* 2013).

Some of the more negative outcomes of strategic flexibility have been assessed, such as over-flexibility (TenDam 1987) and high costs. There also appears to be a disagreement regarding whether strategic flexibility is actually suitable for small firms. For example, Ebben and Johnson (2005) claimed that small firms can be more flexible because their financial resources are not fixed and are dedicated to a specific purpose and because their more decentralized structure allows for a more timely action in comparison to larger firms. Tolstoy (2014) considered strategic flexibility crucial for small firms' differentiation in foreign business relationships. In contrast, flexibility has usually been

attributed to large multinational firms (Aaker 2001; Pauwels and Matthyssens 2004). Indeed, empirical research (Nordin *et al.* 2013) indirectly suggests that larger firms have more opportunities to exercise strategic flexibility because their resources are more available. Other authors have claimed that strategic flexibility is achieved differently by small firms than by large firms (Celuch and Murphy 2010). For example, research has shown that large firms have better financial flexibility, whereas small firms possess better meta-flexibility (Verdú-Jover *et al.* 2006). Meta-flexibility essentially involves gathering business intelligence and processing the received information (Volberda 1996).

In summary, according to the literature, strategic flexibility can lead to a number of benefits: higher financial performance; a competitive advantage; resistance to environmental turbulence; resistance in times of crisis; and risk reduction. Furthermore, it can initiate possibilities for creating new markets and enabling innovation activities in a firm. Its appropriateness for smaller firms is relatively unclear, and over-flexibility is its one negative outcome. Ultimately, the outcomes of strategic flexibility are highly contextual (Grewal and Tansuhaj 2001).

### *Measuring strategic flexibility*

Measuring strategic flexibility has not been an easy task in the scope of the relevant literature; the quantification and analysis of strategic flexibility have been cumbersome to accomplish (Skordoulis 2004). There are no absolute measures of strategic flexibility; even within a single firm, different types of flexibilities and inflexibilities may exist concurrently (Dwyer *et al.* 2014). Appendix VIII provides an overview of the method by which previous quantitative research studies within the field approached the issue of measuring strategic flexibility.

Some means of measuring have been used more frequently, such as the flexibility audit by Aaker and Mascarenhas (1984), Harrigan's (1985) proxies of manufacturing, financial, marketing and knowledge flexibilities, Sanchez's (1995) resource and coordination flexibility variables, Volberda's (1996, 1998) dimensions of strategic flexibility; and the four-item measure by Grewal and Tansuhaj (2001). Other authors have measured strategic flexibility in relation to the primary focus of their studies, such as strategic alliances (Young-Ybarra and Wiersema 1999), contractual relationships (Ivens 2005), barriers to strategic flexibility (Singh *et al.* 2013a) or slack

resources (Mariadoss *et al.* 2014), and consequently, their measurements reflect the foci of their studies.

In summary, in quantitative studies, strategic flexibility has most frequently been measured according to the variables related to the firm acting on opportunities in the business environment (Grewal and Tansuhaj 2001; Kapasuwan *et al.* 2007; Zahra *et al.* 2008), a firm's actions regarding macro-environmental changes (Barrales-Molina *et al.* 2013; Grewal and Tansuhaj 2001), a firm's actions towards competitors (Escrig-Tena *et al.* 2011; Nadkarni and Narayanan 2007; Verdú-Jover *et al.* 2004; Volberda 1996), new technology (Thomas 2014; Zahra *et al.* 2008), slack resources and their coordination (Grewal and Tansuhaj 2001; Nadkarni and Narayanan 2007; Sanchez 1995), finances and financial flexibility (Aaker and Mascarenhas 1984; Kurt and Hulland 2013), manufacturing or operations (Beach *et al.* 2000; Lin *et al.* 2014; Worren *et al.* 2002), its product base (Filatotchev and Toms 2003; Kortmann *et al.* 2014), marketing (Harrigan 1985; Lin *et al.* 2014) and knowledge and learning (Harrigan 1985; Lin and Wu 2014).

## Discussion

The purpose of this review was to systematically analyse the literature on strategic flexibility by identifying its main characteristics, linking different aspects together, and considering the means to measure it. This has been achieved by developing and applying an analytical model and, subsequently, by reviewing the literature, according to the aspects of strategic flexibility identified by a meta-review (dimensions, triggers, enablers, barriers, process and outcomes of strategic flexibility; see Figure 3), in addition to the review of measurement approaches in the empirical strategic flexibility literature. In comparison with former reviews on strategic flexibility, this review distinguishes itself because it is extensive, it provides an overview of the research approaches to strategic flexibility, and it brings consolidation to the field, something that had previously been lacking. It also brings the aspects of strategic flexibility to the forefront; previous reviews did not discuss these aspects in detail. Thus, this review offers a new perspective to the field.

However, as the findings and challenges of the research highlight, the analytical model implies complex relationships between different aspects of strategic flexibility and the existence of various combinations of relationships between triggers, dimensions, enablers, barriers, processes and outcomes. As

indicated at the beginning of this paper, these relationships, at least between some of the aspects, are mentioned in the literature (Fredericks 2005; Sanchez 1995), albeit rarely, and a more contingent approach to strategic flexibility advocated (Guo and Cao 2014). For example, there are different natures of changes, and firms can act differently in relation to changes (see By 2005). The availability or lack of certain enablers can either propel these changes or represent barriers to strategic flexibility. Finally, depending on these interactions, specific outcomes are achieved. More concretely, one can assume that it is more likely that changes characterized as opportunities cause firms to act more proactively and offensively; this action can be enhanced if the firm possesses innovation abilities and a flexible structure. By that same token, one can assume that it is more likely that an unanticipated change would trigger responsive actions. Those responsive actions may be limited in cases in which pre-emptive strategic planning is lacking and managers act myopically. Of course, these are just two simplified examples, indicating that the nuances reach beyond the existing conceptualizations. Most of the existing research models that include strategic flexibility (e.g. Combe *et al.* 2012; Grewal and Tansuhaj 2001; Nadkarni and Narayanan 2007) neglect to discuss these interactions of the aspects, which are far more nuanced than what was previously suggested. The literature largely does not address how they are interconnected, how the enablers and barriers to strategic flexibility build their patterns or whether it is possible to manipulate the aspects of strategic flexibility towards particular outcomes. In addition, because the topic of strategic flexibility is difficult to study because of its complexity (Combe 2012), there are no simple study methods. In consideration of this complexity, the analytical model presented in Figure 3 can be transformed into a model that accentuates the possible interactions of the relationships between the aspects and can serve as the basis for future empirical studies in the form presented in Figure 4.

The application of the analytical model in this slightly reframed form would imply certain methodological considerations. Because of its comprehensiveness and complexity, the model shown in Figure 4 would suggest the application of a method such as structural equation modelling, which is in line with the prevailing methodological choices in the studies identified for the purposes of this paper; however, if the model shown in Figure 4 were to be applied empirically, it would show a significant distinction from the previously applied models in the

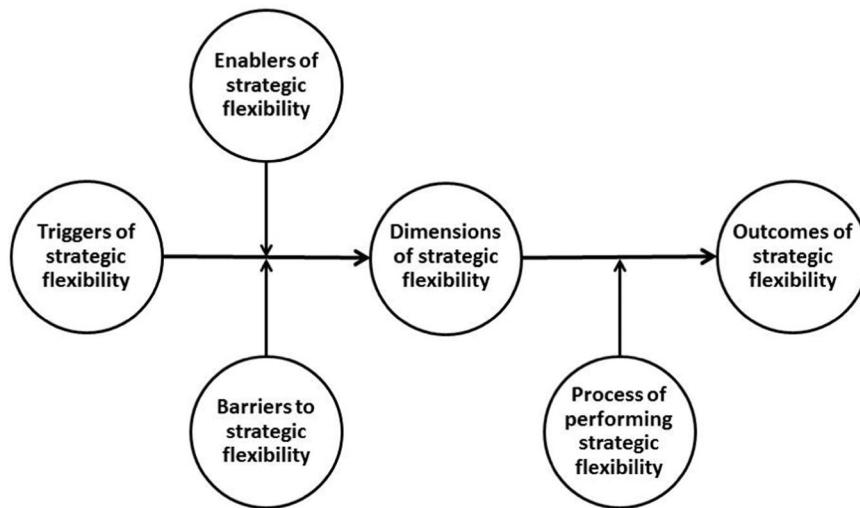


Figure 4. Reframing the analytical model of strategic flexibility

measurement approach to strategic flexibility. The central variable in this model is focused on the dimensions of strategic flexibility, i.e. a firm's actions regarding the nature of the changes in the environment. The subsequent review of the measurement approaches to strategic flexibility clearly demonstrates that the actual actions of a firm have rarely been taken into consideration when strategic flexibility has been measured (cf. Arief *et al.* 2013; Parnell 2005; Zahra *et al.* 2008). Nevertheless, Figure 4, in combination with Appendices II–VII, represents a sound and exhaustive approach to a possible empirical continuation of this literature review.

Qualitative empirical approaches and alternative ontologies should by no means be disregarded. Although quantitative studies and a positivistic worldview dominate the field of strategic flexibility, which is also exhibited by the initial overview of the empirical research in strategic flexibility; the quantitative approach to strategic flexibility may not be enough to understand strategic flexibility fully (Beach *et al.* 2001). Qualitative studies have the potential to generate more understanding about the context of strategic flexibility and to describe the process of strategic flexibility, such as how and why a firm interacts with its environment, the role that management plays or how slack resources become activated. Case studies following Eisenhardt (1989) and Yin (2009) have, so far, been most frequently applied within qualitative research in strategic flexibility, with some exceptions exhibiting traits of an action research approach (e.g. Gylling *et al.* 2012) or applying a grounded theory approach (Dibrell *et al.* 2007;

Guette and Vandenbempt 2014). To conclude, the field of strategic flexibility would benefit from more qualitative studies applying ontologies and alternative approaches to positivism, with the overall aim of increasing the understanding of the context of strategic flexibility.

## Conclusion

Besides highlighting a number of actual sources of changes in the environment (e.g. competition and uncertainty or complexity in general) and the varying natures of these changes (e.g. disturbances and continuous changes or expected and unexpected changes), the review of the triggers of strategic flexibility points to the assumption that different firms can act differently when faced with the same type of changes. Furthermore, the review of the dimensions, in particular, shows the progress of the conceptualization of strategic flexibility. The most prevailing understanding of strategic flexibility is as a reactive set of abilities; however, more recent contributions portray the proactive side of strategic flexibility.

Moreover, the literature, especially in relation to the enablers of strategic flexibility, recognizes the broadness of the mechanisms of strategic flexibility. In this sense, the literature claims that the mechanisms of strategic flexibility and the sources of strategic options may include tactical flexibility (Fredericks 2005), organizational flexibility (Sushil and Stohr 2014; Volberda 1996), technological flexibility (Wang *et al.* 2015b), operational and

manufacturing flexibilities (De Toni and Tonchia 1998; Nandakumar *et al.* 2014), IS/IT (Nandakumar *et al.* 2014; Sushil and Stohr 2014), marketing capabilities (Ling-Yee and Ogunmokun 2013; Singh 2014), strategic alliances (Young-Ybarra and Wiersema 1999), quality management (Fernández-Pérez and Gutiérrez 2013), niche strategies (Hamlin *et al.* 2012), networks (Mason and Mouzas 2012), open innovation (Rajala *et al.* 2012), outsourcing (Arias-Aranda *et al.* 2011; Hilman and Mohamed 2013; Quinn 1999), entrepreneurial orientation (Mishra and Jain 2014) and business processes in general (Sushil and Stohr 2014). Also, the role of innovation and R&D as enablers of the proactive dimension of strategic flexibility is rarely considered, with notable exceptions appearing only recently (Fan *et al.* 2013; Rajala *et al.* 2012). In fact, within the scope of the literature on agility, which depicts strategic flexibility as a dynamic, context-specific and change-embracing organizational ability (Goldman *et al.* 1995; Swafford *et al.* 2006), innovation as a source of novel opportunities plays a significant role (Mathiassen and Pries-Heje 2006; Stratton and Warburton 2003).

With regard to the barriers to strategic flexibility, the review indicates that this aspect is a relatively under-researched area. Therefore, novel insights into the field of strategic flexibility may be found beyond its boundaries, particularly in relation to this aspect. More specifically, the review of barriers indicates the core rigidities (Leonard-Barton 1992) and the business models of the firm (Chesbrough *et al.* 2006) as possible sources of rigidity in relation to strategic flexibility. Furthermore, in relation to the process of strategic flexibility, the literature particularly notes that strategic flexibility is not exercised by the strategic management of the organization only. For instance, some authors suggested that operational flexibilities are strongly linked to strategic flexibility (De Toni and Tonchia 1998) and to strategic options stemming from organizational levels other than strategic levels, such as operational (e.g. Combe *et al.* 2012; Tamayo-Torres *et al.* 2010).

With regard to the outcomes, the review shows that most of the previous literature in the field considers the positive relationships between strategic flexibility and superior performance, and strategic flexibility and competitive advantage, while some issues, such as strategic flexibility in small firms and the negative outcomes of strategic flexibility, remain relatively underexplored. Finally, by transforming the analytical model used for the review (Figure 3) into a model for

potential future research (Figure 4), the discussion reveals complex sets of connections and links between the aspects of strategic flexibility, which were, previously, seldom discussed.

#### *Directions for future research*

Based on this discussion, several possible research avenues can be identified. First, findings related to the reviews of the particular aspects illuminate research possibilities associated with them. For example, although a large part of the previous research focused on the triggers and dimensions of strategic flexibility, there are still underexplored avenues; the influence of various natures of changes on strategic flexibility may be one such avenue, and the proactive view on strategic flexibility that arose relatively recently may be another avenue. Enablers of strategic flexibility offer a number of areas that can be addressed, such as how flexibilities, such as marketing or operational flexibility, together with other factors named in the conclusion, contribute to the overall strategic flexibility of the firm. Other possible research avenues include the enabling and perhaps even disabling capacities of IT and new technologies, a topic that has only recently appeared in the literature with frequency (e.g. Bahrami and Evans 2010; Nandakumar *et al.* 2014; Sushil and Stohr 2014). The review has also shown that barriers to strategic flexibility are a largely unexplored area; they offer possibilities for a number of studies, thereby infusing the field with insights from other literatures. Understanding how and why some negative outcomes appear is also advisable; for instance, some future studies might be related to over-flexibility. In addition, the benefits and drawbacks of strategic flexibility for small firms is another unresolved dilemma in the field.

The model shown in Figure 4 represents a more nuanced understanding of the phenomenon of strategic flexibility. It presents future paths for both theoretical and empirical studies, which can provide a clearer understanding of how different combinations of aspects relate to and moderate each other and lead to certain outcomes. This may be helpful in determining exactly how the various practices of a firm contribute to strategic flexibility and interplay and result in not only flexibility, but also in the given outcomes. More qualitative studies, with the potential to generate knowledge about the context and to describe the process of strategic flexibility, are also necessary.

Similarly, in several places, the review implies that insights from other related concepts may enrich the

understanding of strategic flexibility. For example, further exploration of the links between strategic flexibility and dynamic capabilities via sustainable competitive advantage is one such research avenue, and the variability of the use of flexibility in relation to strategic flexibility is another. Moreover, the relationships between strategic flexibility and ambidexterity (e.g. see Kortmann 2014; Wei *et al.* 2014), strategic flexibility and other concepts (Sushil 2001), and strategic flexibility and agility (Gong and Janssen 2012) can be explored. Another valuable endeavour will be the exploration of strategic flexibility in relation to other constructs and theoretical streams regarding the abilities of firms that contribute to managing changes in dynamic environments. Strategic flexibility can, thus, be regarded as a comprehensive phenomenon that encompasses and integrates other 'senses of flexibility' (Bahrami and Evans 2010). Furthermore, as markets and environments regarded as static, such as public and third sectors, experience new and previously non-existent levels of dynamics (e.g. see Eikenberry and Kluver 2004; Lane 1997), it is advisable to shift research into new empirical arenas, such as those beyond the business sector. Strategic management and strategic marketing research are already expanding in this direction (e.g. see Birinci and Eren 2013). Lastly, the dilemmas highlighted by Combe (2012), such as the nature of the relationship between strategic flexibility and market orientation, still remain largely unsolved.

To conclude, this review has approached the field of strategic flexibility from a novel perspective, providing a comprehensive consolidation of literature, based on a new analytical framework. The review highlights how the field has progressed from the relative scarcity of contributions and initially prevailing conceptual articles to a significant expansion, especially in empirical research, and how the understanding of strategic flexibility has evolved from being viewed as a responsive ability to including proactive approaches. This review also sheds more light on mainstreams in strategic flexibility research, such as the dominance of quantitative research approaches and the strong focus on triggers, dimensions and particular outcomes of strategic flexibility (financial performance and competitive advantage). Aspects such as barriers to strategic flexibility, as well as the interconnectedness of the aspects identified by the analytical model, remain relatively underexplored areas of research. An additional underexplored area is the underutilized qualitative research approach, which can help in providing more knowledge about the context of strategic flexibility. Other kindred fields of research may also provide additional insights into strategic flexibility. All in all, although research in strategic flexibility has been present for several decades and is both affluent and, currently, very vivid, there are still considerable research opportunities that can enrich researchers' knowledge on the topic.

## Appendices

Appendix I. Contributions identified for the purposes of the literature review, with literature reviews in italics and books specially marked (see reference list for full details)

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1978	Eppink
1980	Harrigan
1984	Aaker and Mascarenhas
1985	Harrigan (book)
1986	Bresser and Harl
1987	TenDam
1989	Carlsson; Ulrich and Wiersema; Whipp <i>et al.</i>
1991	Evans
1995	Bettis and Hitt; Das and Elango; Sanchez
1996	Bierly and Chakrabarti; de Leeuw and Volberda; Goodstein <i>et al.</i> ; Lau; Lei <i>et al.</i> ; Sanchez and Mahoney; Volberda; Winfrey <i>et al.</i>
1997	Sanchez; Sanchez and Heene; Volberda
1998	<i>De Toni and Tonchia</i> ; Hamel <i>et al.</i> eds (book); Hitt <i>et al.</i> ; Levy and Powell; Matusik and Hill; Price <i>et al.</i> ; Volberda (book); Wright and Snell
1999	Young-Ybarra and Wiersema
2000	Beach <i>et al.</i> ; Petersen <i>et al.</i> ; Phillips and Tuladhar
2001	Fisscher and de Weerd-Nederhof; Grewal and Tansuhaj; Lawson
2002	Englehardt and Simmons, Worren <i>et al.</i>
2003	Abbott and Banerji; Filatotchev and Toms; Hitt <i>et al.</i> ; Johnson <i>et al.</i> ; Theoharakis and Hooley
2004	Combe and Greenley; Dreyer and Grønhaug; Pauwels and Matthyssens; Raynor and Leroux; Sanchez; Shimizu and Hitt; Skordoulis; Verdú-Jover <i>et al.</i>
2005	Ebben and Johnson; Fredericks; Gómez-Gras and Verdú-Jover; Ivens; Javalgi <i>et al.</i> ; Matthyssens <i>et al.</i> ; Medina <i>et al.</i> ; Parnell; Roca-Puig <i>et al.</i> ; Saini and Johnson; Zhang
2006	Hatum and Pettigrew; Reddy; Verdú-Jover <i>et al.</i> ; Zhang
2007	Celuch <i>et al.</i> ; Dibrell <i>et al.</i> ; Kapasuwan <i>et al.</i> ; Nadkarni and Narayanan
2008	Li <i>et al.</i> ; Logman; Rudd <i>et al.</i> ; Verdú-Jover <i>et al.</i> ; Zahra <i>et al.</i>
2009	Lee and Makhija; Roberts and Stockport; Saleh <i>et al.</i> ; Tan and Zeng
2010	Bahrami and Evans (book); Celuch and Murphy; Gutiérrez and Fernández-Pérez; Li <i>et al.</i> ; Nadkarni and Herrmann; Tamayo-Torres <i>et al.</i> ; Tan and Wang; Zhou and Wu
2011	Bahrami and Evans; <i>de Haan et al.</i> ; Engau <i>et al.</i> ; Escrig-Tena <i>et al.</i> ; Feletto <i>et al.</i> ; Li <i>et al.</i>
2012	Bock <i>et al.</i> ; Cadogan <i>et al.</i> ; Combe; Combe <i>et al.</i> ; Dreyer and Grønhaug; Fernández-Pérez <i>et al.</i> ; Gylling <i>et al.</i> ; Hamlin <i>et al.</i> ; Kandemir and Acur; Kouropalatis <i>et al.</i> ; Maitland and Samartino; Mason and Mouzas; Rajala <i>et al.</i> ; Ramirez <i>et al.</i> ; Sanchez; Santos-Vijande <i>et al.</i> ; Schön; Turner; van der Weerd <i>et al.</i> ; Wu <i>et al.</i>
2013	Arief <i>et al.</i> ; Barrales-Molina <i>et al.</i> ; Fan <i>et al.</i> ; Fernández-Pérez and Gutiérrez; Fernández-Pérez <i>et al.</i> ; Hilman and Mohamed; Kurt and Hlland; Li <i>et al.</i> ; Ling-Yee and Ogunmokun; Liu <i>et al.</i> ; Singh <i>et al.</i> (a); Singh <i>et al.</i> (b)
2014	Dwyer <i>et al.</i> ; Fernández-Pérez <i>et al.</i> ; Guette and Vandenbempt; Guo and Cao; Kortmann <i>et al.</i> ; Lin and Wu; Lin <i>et al.</i> ; Mariadoss <i>et al.</i> ; Mejtoft; Nandakumar <i>et al.</i> eds (book); Sushil and Stohr, eds (book); Thomas; Tolstoy; Verdú-Jover <i>et al.</i> ; Wei <i>et al.</i> ; Zhang <i>et al.</i>
2015	Bakker and Knoben; Chen <i>et al.</i> ; de Soto-Camacho and Vargas-Sánchez; Ouakouak and Ammar; Perez-Valls <i>et al.</i> ; Roh <i>et al.</i> ; Stieglitz <i>et al.</i> ; Sushil; Sushil and Chroust, eds (book); Sydow; Thourunroje; Wang, T. <i>et al.</i>

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## Appendix II. Extrapolation of the main dimensions of strategic flexibility via the features of definitions

Main features (dimensions)	Articles
Strategic flexibility as a reactive ability only (includes responsiveness and adaptation to changes in the business environment)	Eppink (1978); Aaker and Mascarenhas (1984); TenDam (1987); Whipp <i>et al.</i> (1989); Das and Elango (1995); Sanchez (1995); Bierly and Chakrabarti (1996); Lau (1996); Sanchez and Mahoney (1996); Winfrey <i>et al.</i> (1996); Wright and Snell (1998); Beach <i>et al.</i> (2000); Combe and Greenley (2004); Shimizu and Hitt (2004); Fredericks (2005); Nadkarni and Narayanan (2007); Rudd <i>et al.</i> (2008); Tan and Zeng (2009); Tamayo-Torres <i>et al.</i> (2010); Zhou and Wu (2010); Escrig-Tena <i>et al.</i> (2011); Fernández-Pérez <i>et al.</i> (2012); Gylling <i>et al.</i> (2012); Hamlin <i>et al.</i> (2012); Kouropalatis <i>et al.</i> (2012); Pauwels and Matthyssens (2004); Santos-Vijande <i>et al.</i> (2012); Schön (2012); Wu <i>et al.</i> (2012); Fernández-Pérez and Gutiérrez (2013); Kurt and Hulland (2013); Sushil (2014)
Strategic flexibility as a proactive ability as well	TenDam (1987); de Leeuw and Volberda (1996); Volberda (1996); Hitt <i>et al.</i> (1998); Young-Ybarra and Wiersema (1999); Grewal and Tansuhaj (2001); Abbott and Banerji (2003); Zhang (2005, 2006); Roca-Puig <i>et al.</i> (2005); Celuch <i>et al.</i> (2007); Li <i>et al.</i> (2008); Zahra <i>et al.</i> (2008); Roberts and Stockport (2009); Engau <i>et al.</i> (2011); Feletto <i>et al.</i> (2011); Bock <i>et al.</i> (2012); Combe <i>et al.</i> (2012); Kandemir and Acur (2012); Santos-Vijande <i>et al.</i> (2012); Ling-Yee and Ogunmokon (2013); Singh <i>et al.</i> (2013b); Ouakouak and Ammar (2015); Sushil (2015)
Strategic flexibility as a fast, swift, quick, prompt, timely response	Aaker and Mascarenhas (1984); Das and Elango (1995); Wright and Snell (1998); Englehardt and Simmons (2002); Shimizu and Hitt (2004); Verdú-Jover <i>et al.</i> (2006); Nadkarni and Narayanan (2007); Escrig-Tena <i>et al.</i> (2011); Bock <i>et al.</i> (2012); Gylling <i>et al.</i> (2012); Kouropalatis <i>et al.</i> (2012); Santos-Vijande <i>et al.</i> (2012); Barrales-Molina <i>et al.</i> ; (2013); Kurt and Hulland (2013); Ouakouak and Ammar (2015)
Time aspect (short, medium or long term)	Carlsson (1989); Evans (1991); Wright and Snell (1998); see also Golden and Powell (2000)
The choice of an appropriate strategic option	Carlsson (1989); Evans (1991); Das and Elango (1995); Sanchez (1995, 1997); Price <i>et al.</i> (1998); Phillips and Tuladhar (2000); Fredericks (2005); Rudd <i>et al.</i> (2008); Tan and Zeng (2009); Escrig-Tena <i>et al.</i> (2011); Kazozcu (2011); Combe (2012); Kandemir and Acur (2012); Kouropalatis <i>et al.</i> (2012); Sushil (2014); Roh <i>et al.</i> (2015)
Intention	Evans (1991); Johnson <i>et al.</i> (2003); Matthyssens <i>et al.</i> (2005); Ling-Yee and Ogunmokon, (2013); see also Golden and Powell (2000);

## Appendix III. Triggers of strategic flexibility according to dimensions and types

Dimensions of triggers	Articles
Predictable and unpredictable changes	Eppink (1978); Young-Ybarra and Wiersema (1999); de Haan <i>et al.</i> (2011); Fernández-Pérez and Gutiérrez (2013)
Continuous changes and disturbances	de Haan <i>et al.</i> (2011)
Opportunities and threats	Matusik and Hill (1998); Chattopadhyay <i>et al.</i> (2001); Grewal and Tansuhaj (2001); Li <i>et al.</i> (2008); Zahra <i>et al.</i> (2008); Roberts and Stockport (2009); Hamlin <i>et al.</i> (2012); Perez-Valls <i>et al.</i> (2015)
Internally induced vs. externally induced changes	Fredericks (2005); Schön (2012)
Types of triggers	Articles
Uncertainties	Lau (1996); Hitt <i>et al.</i> (2003); Fredericks (2005); Ivens (2005); Hatum and Pettigrew (2006); Li <i>et al.</i> (2008); Engau <i>et al.</i> (2011); Kazozcu (2011)
Competitive forces	Whipp <i>et al.</i> (1989); Das and Elango (1995); Goodstein <i>et al.</i> (1996); Hitt <i>et al.</i> (1998); Fisscher and de Weerd-Nederhof (2001); Zhang (2005); Combe (2012); Fernández-Pérez <i>et al.</i> (2012); Kurt and Hulland (2013)
Economic and political risks	Grewal and Tansuhaj (2001); Roberts and Stockport (2009)
Combination of various factors arising from the complexity of modern markets	Hitt <i>et al.</i> (1998); Beach <i>et al.</i> (2000); Combe (2012); Dreyer and Grønhaug (2012); Maitland and Samartino (2012); Schön (2012); Thomas (2014); Perez-Valls <i>et al.</i> (2015)

## Appendix IV. Enablers of strategic flexibility

Categories	Enablers	Articles
Strategy-related enablers	Management and leadership, also in terms of their competency, cognition, and social networks	Evans (1991); Bettis and Hitt (1995), Goodstein <i>et al.</i> (1996); Volberda (1996, 1998); Filatotchev and Toms (2003); Hitt <i>et al.</i> (2003); Combe and Greenley (2004); Hatum and Pettigrew (2006); Escrig-Tena <i>et al.</i> (2011); Combe <i>et al.</i> (2012); Kouropalatis <i>et al.</i> (2012); Fernández-Pérez <i>et al.</i> (2013); Fernández-Pérez and Gutiérrez (2013); Fernández-Pérez <i>et al.</i> (2014); Roh <i>et al.</i> (2015); Wang <i>et al.</i> (2015b)
	Strategic planning	Petersen <i>et al.</i> (2000); Theoharakis and Hooley (2003); Dibrell <i>et al.</i> (2007); Rudd <i>et al.</i> (2008); Hamlin <i>et al.</i> (2012); Ouakouak and Ammar (2015); Roh <i>et al.</i> (2015)
	Dynamic (core) competences	Hitt <i>et al.</i> (1998); Price <i>et al.</i> (1998); Escrig-Tena <i>et al.</i> (2011); Dwyer <i>et al.</i> (2014)
	Dynamic capabilities	Sanchez and Heene (1997); Englehardt and Simmons (2002); Kazozcu (2011); Bock <i>et al.</i> (2012); Liu <i>et al.</i> (2013); Singh <i>et al.</i> (2013b); Lin and Wu (2014)
	Organizational processes	Fisscher and de Weerd-Nederhof (2001); Turner (2012)
	Strategic options (strategic variety, interpretative capability)	Ulrich and Wiersema (1989); Sanchez (1995, 1997); Hitt <i>et al.</i> (1998); Petersen <i>et al.</i> (2000); Phillips and Tuladhar (2000); Englehardt and Simmons (2002); Combe and Greenley (2004); Nadkarni and Narayanan (2007); Rudd <i>et al.</i> (2008); Tamayo-Torres <i>et al.</i> (2010); Kazozcu (2011); Combe <i>et al.</i> (2012); Hamlin <i>et al.</i> (2012); Cadogan <i>et al.</i> (2012); Kandemir and Acur (2012); Turner (2012); Barrales-Molina <i>et al.</i> (2013); Thourmrunroje (2015)
	Organizational structure	Carlsson (1989); Ulrich and Wiersema (1989); Whipp <i>et al.</i> (1989); Das and Elango (1995); Lei <i>et al.</i> (1996); Sanchez and Mahoney (1996); Volberda (1996, 1998); Winfrey <i>et al.</i> (1996); Hitt <i>et al.</i> (1998); Fisscher and de Weerd-Nederhof (2001); Englehardt and Simmons (2002); Theoharakis and Hooley (2003); Skordoulis (2004); Zhang (2006); Escrig-Tena <i>et al.</i> (2011); Bock <i>et al.</i> (2012); Sanchez (2012); Perez-Valls <i>et al.</i> (2015)
	Market orientation, environmental scanning, and marketing capabilities	Ulrich and Wiersema (1989); Petersen <i>et al.</i> (2000); Hatum and Pettigrew (2006); Celuch and Murphy (2010); Engau <i>et al.</i> (2011); Fernández-Pérez <i>et al.</i> (2012); Rajala <i>et al.</i> (2012); Ling-Yee and Ogunmokon (2013)
	Various strategies as enablers and sources of strategic flexibility	Modularity: Das and Elango (1995); Sanchez (1995, 1997, 2004); Sanchez and Mahoney (1996); Worren <i>et al.</i> (2002); Schön (2012) External integration with key suppliers and customers: Das and Elango (1995); Escrig-Tena <i>et al.</i> (2011) Vertical integration: Mejtoft (2014) Strategic alliances: Hitt <i>et al.</i> (1998); Young-Ybarra and Wiersema (1999); Engau <i>et al.</i> (2011) TQM: Escrig-Tena <i>et al.</i> (2011) Niche strategies: Whipp <i>et al.</i> (1989); Hamlin <i>et al.</i> (2012) Flexible business models: Mason and Mouzas (2012) Innovativity: Worren <i>et al.</i> (2002); Skordoulis (2004); Rajala <i>et al.</i> (2012); Singh <i>et al.</i> (2013b); Dwyer <i>et al.</i> (2014) Virtual global strategies: Turner (2012) Geographical dispersion: Ling-Yee and Ogunmokon (2013) Promoting sustainable development: Dwyer <i>et al.</i> (2014) Outsourcing: Medina <i>et al.</i> (2005); Gunasekaran <i>et al.</i> (2015)

## Appendix IV. Continued

Categories	Enablers	Articles
Orientation and culture related enablers	Organizational culture (shared vision and values)	Winfrey <i>et al.</i> (1996); Hitt <i>et al.</i> (1998); Hatum and Pettigrew (2006); Engau <i>et al.</i> (2011)
	Employees, human resources, HR management	Whipp <i>et al.</i> (1989); Das and Elango (1995); Winfrey <i>et al.</i> (1996); Hitt <i>et al.</i> (1998); Matusik and Hill (1998); Fisscher and de Weerd-Nederhof (2001); Medina <i>et al.</i> (2005); Roca-Puig <i>et al.</i> (2005); Escrig-Tena <i>et al.</i> (2011); Singh <i>et al.</i> (2013b)
	Organizational knowledge, knowledge management	Hitt <i>et al.</i> (2003); Zhang (2006); Fernández-Pérez <i>et al.</i> (2012); Ramírez <i>et al.</i> (2012); Bahrami and Evans (2010, 2011); Lin and Wu (2014)
	Organizational learning	Theoharakis and Hooley (2003); Verdú-Jover <i>et al.</i> (2006); Santos-Vijande <i>et al.</i> (2012)
	Relationships (internal and external)	Petersen <i>et al.</i> (2000); Hitt <i>et al.</i> (2003); Mejtoft (2014)
Resource-related enablers	Customer orientation	Dwyer <i>et al.</i> (2014)
	Flexible resources (includes financial resources)	Whipp <i>et al.</i> (1989); Sanchez (1995, 1997, 2012); Bettis and Hitt (1995); Lau (1996); Winfrey <i>et al.</i> (1996); Filatotchev and Toms (2003); Nadkarni and Narayanan (2007); Kazozcu (2011); Li <i>et al.</i> (2011); Combe <i>et al.</i> (2012); Hamlin <i>et al.</i> (2012); Kouropalatis <i>et al.</i> (2012); Turner (2012); Ling-Yee and Ogunmokun (2013); Li <i>et al.</i> (2013); Guiette and Vandenbempt (2014); Wei <i>et al.</i> (2014); de Soto-Camacho and Vargas-Sánchez (2015)
	Slack resources (resource surplus)	Lawson (2001); Verdú-Jover <i>et al.</i> (2006); Tan and Zeng (2009); Wu <i>et al.</i> (2012); Mariadoss <i>et al.</i> (2014)
	Flexible coordination of resources	Sanchez (1995, 1997, 2012); Engau <i>et al.</i> (2011); Li <i>et al.</i> (2011); Guiette and Vandenbempt (2014); Lin and Wu (2014); Wei <i>et al.</i> (2014)
	Technology (primarily IT but includes other types)	Whipp <i>et al.</i> (1989); Lei <i>et al.</i> (1996); Hitt <i>et al.</i> (1998); Levy and Powell (1998); Volberda (1998); Reddy (2006); Zhang (2006); Celuch <i>et al.</i> (2007); Kapasuwan <i>et al.</i> (2007); Celuch and Murphy (2010); Escrig-Tena <i>et al.</i> (2011); Singh <i>et al.</i> (2013b); Nandakumar <i>et al.</i> (2014), Sushil and Stohr (2014); Chen <i>et al.</i> (2015)

## Appendix V. Barriers to strategic flexibility

Barriers	Articles
Rigidity	TenDam (1987); Lau (1996); Sanchez (1997); Pauwels and Matthyssens (2004); Matthyssens <i>et al.</i> (2005); Dibrell <i>et al.</i> (2007); Kouropalatis <i>et al.</i> (2012); Singh <i>et al.</i> (2013a)
Management issues	Carlsson (1989); Shimizu and Hitt (2004); Parnell (2005); Singh <i>et al.</i> (2013a)
Lack of financial resources leading to high costs	Eppink (1978); Das and Elango (1995); Bierly and Chakrabarti (1996); Matusik and Hill (1998); Gómez-Gras and Verdú-Jover, (2005); Parnell (2005); Verdú-Jover <i>et al.</i> (2006); Tan and Wang (2010); Hamlin <i>et al.</i> (2012); Singh <i>et al.</i> (2013a)
Exit barriers	Harrigan (1980)
Collective strategies	Bresser and Harl (1986)
Technological, cultural and structural barriers	Volberda (1998)
Lack of information	Shimizu and Hitt (2004)
Resistance to change	Skordoulis (2004)

*Appendix VI. The process of strategic flexibility*

Description of the process of strategic flexibility	Articles
Strategic flexibility is achieved developing alternate strategic options in which the most appropriate one is implemented according to the traits of the change in the business environment as perceived and evaluated by the firm.	Aaker and Mascarenhas (1984); Sanchez (1995, 1997); Wright and Snell (1998); Kapasuwan <i>et al.</i> (2007); Combe <i>et al.</i> (2012); Guiette and Vandenbempt (2014);
Strategic flexibility is achieved in several related stages: awareness, attention, assessment (understanding) and action (implementation).	Combined from: Lau (1996); Shimizu and Hitt (2004); Rajala <i>et al.</i> (2012)
Strategic flexibility is achieved in the stages of identification of resources, acquisition of resources, deployment of resources and identification of options.	Johnson <i>et al.</i> (2003)
Strategic flexibility is achieved in four phases: anticipate through scenarios, formulate strategies for each scenario, accumulate slack resources and operate, i.e. proceed with activities.	Raynor and Leroux (2004)
Strategic flexibility can be related to and it emerges from other managerial practices and strategies.	Quality Management (Escrig-Tena <i>et al.</i> 2011); export market orientation (Cadogan <i>et al.</i> 2012); service management (Gylling <i>et al.</i> 2012); niches (Hamlin <i>et al.</i> 2012); networks and flexible business models (Mason and Mouzas 2012)
Strategic flexibility is achieved by the tool of strategic flexibility points, which represent the routinization of strategic flexibility via strategic planning, as managers incorporate different mechanisms in their strategic planning processes that are tightly linked to the external environment.	Dibrell <i>et al.</i> (2007)
Strategic flexibility is achieved following the stages of strategy formulation, re-enforcement, commitment to strategy, implementation of strategy, strategy evaluation and de-commitment/re-commitment vis-à-vis the external environment.	Kouropalatis <i>et al.</i> (2012)

## Appendix VII. Outcomes of strategic flexibility

Outcomes	Articles
Superior performance	Hitt <i>et al.</i> (1998); Worren <i>et al.</i> (2002); Abbott and Banerji (2003); Johnson <i>et al.</i> (2003); Theoharakis and Hooley (2003); Verdú-Jover <i>et al.</i> (2004); Roca-Puig <i>et al.</i> (2005); Saini and Johnson (2005); Zhang (2005); Reddy (2006); Celuch <i>et al.</i> (2007); Kapasuwan <i>et al.</i> (2007); Nadkarni and Narayanan (2007); Rudd <i>et al.</i> (2008); Tan and Zeng (2009); Tan and Wang (2010); Kazozcu (2011); Cadogan <i>et al.</i> (2012); Combe <i>et al.</i> (2012); Fernández-Pérez <i>et al.</i> (2012); Lin <i>et al.</i> (2014); Verdú-Jover <i>et al.</i> (2014); Ouakouak and Ammar (2015); Perez-Valls <i>et al.</i> (2015); Chen <i>et al.</i> (2015)
Competitive advantage	Sanchez (1995); Winfrey <i>et al.</i> (1996); Levy and Powell (1998); Matusik and Hill, 1998; Combe and Greenley (2004); Zhang (2005); Celuch and Murphy (2010); Kazozcu (2011); Hilman and Mohamed (2013); Ling-Yee and Ogunmokun (2013); Guiette and Vandenbempt (2014); Lin <i>et al.</i> (2014); Nandakumar <i>et al.</i> (2014); Roh <i>et al.</i> (2015); Thoumrunroje (2015)
Improves decision process	Sanchez (1995); Ramírez <i>et al.</i> (2012)
Reduces risk and uncertainty; increases resistance to crises and stability	Das and Elango (1995); Sanchez and Heene (1997); Levy and Powell (1998); Newman (2000); Grewal and Tansuhaj (2001); Rudd <i>et al.</i> (2008); Lee and Makhija (2009); Dreyer and Grønhaug (2012); Hamlin <i>et al.</i> (2012); Ramírez <i>et al.</i> (2012); de Soto-Camacho and Vargas-Sánchez (2015)
More effective in exploring opportunities	Das and Elango (1995)
Promotes organizational learning; increases customer sensitivity	Sanchez (1995); Dibrell <i>et al.</i> (2007)
Increases internal efficiency	Levy and Powell (1998); Javalgi <i>et al.</i> (2005)
Increases the reputation of the firm	de Soto-Camacho and Vargas-Sánchez (2015)
Satisfaction, trust and commitment, superior value creation, increased perceived service quality	Johnson <i>et al.</i> (2003); Ivens (2005); Celuch <i>et al.</i> (2007); Gylling <i>et al.</i> (2012); Ling-Yee and Ogunmokun (2013)
Innovativeness	Medina <i>et al.</i> (2005); Li <i>et al.</i> (2008); Tamayo-Torres <i>et al.</i> (2010); Zhou and Wu (2010)
Enables international venturing of firms from emerging markets	Liu <i>et al.</i> (2013), Zhang <i>et al.</i> (2014)
Longevity, vitality and sustainability of the firm	de Geus (2002); Sushil (2015)

*Appendix VII. Approaches to measuring strategic flexibility*

Flexibility audits, including the objective and subjective assessment of variables within one firm's R&D, finances, operations, marketing, internationalization and managerial/structural field	First proposed by Aaker and Mascarenhas (1984), later applied by Hilman and Mohamed (2013); Kurt and Hülland (2013); Liu <i>et al.</i> (2013); Zhang <i>et al.</i> (2014)
Strategic flexibility is divided into manufacturing flexibility (measured by capital intensity), financial flexibility (current ratio), marketing flexibility (advertising intensity) and the breadth of the knowledge base or knowledge flexibility (diversification of R&D index)	First appearing in Harrigan (1985), later adapted and applied by Bieri and Chakrabarti (1996); van der Weerd <i>et al.</i> (2012, partially)
Measured via resource flexibility and coordination flexibility variables	Indicated by Sanchez (1995), applied as a measure of strategic flexibility by Saini and Johnson (2005); Li <i>et al.</i> (2008); Verdú-Jover <i>et al.</i> (2008, partially) Li <i>et al.</i> (2010); Li <i>et al.</i> (2011); Zhou and Wu (2010); Li <i>et al.</i> (2013); Wei <i>et al.</i> (2014); Chen <i>et al.</i> (2015)
Measured via the speed of strategic change, the variety of alternatives for strategic change, control over competitors and control over regulations	First proposed by Volberda (1996, 1998), later adapted and applied by Verdú-Jover <i>et al.</i> (2004, 2006); Gómez-Gras and Verdú-Jover (2005); Feleto <i>et al.</i> (2011); Gutiérrez and Fernández-Pérez (2010); Tamayo-Torres <i>et al.</i> (2010); Fernández-Pérez and Gutiérrez (2013, 2014); Barrales-Molina <i>et al.</i> (2013); Fernández-Pérez and Gutiérrez (2013); Wang, T. <i>et al.</i> (2015); see also de Soto-Camacho and Vargas-Sánchez (2015)
Measured by four items: (1) building excess resources by hedging and sharing investments across business activities; (2) emphasis on firms deriving benefits from diversity in the environment; (3) importance that the firm puts on benefiting from opportunities that arise from variability in the environment; (4) a firm's strategic emphasis on managing macro-environmental risk (political, economic and financial risk)	First developed and applied by Grewal and Tansuhaj (2001), later applied by Nadkarni and Herrmann (2010); Kouropalatis <i>et al.</i> (2012); Thourunrongroj (2015)
Measured by maintaining attention, completing an assessment and taking action	Suggested by Shimizu and Hitt (2004), applied by Arief <i>et al.</i> (2013)
Measured according to efficiency-flexibility trade-off (generally, low flexibility implies high efficiency and vice versa)	Ebben and Johnson (2005); Tan and Zeng (2009); Tan and Wang (2010)
Measured by frequent changes following changes in the environment, frequent change of strategies, modification of strategies following changes in resources and acting on market opportunities	Parnell (2005)
Measured by competitive speed and competitive variety variables	Developed and applied by Roca-Puig <i>et al.</i> (2005), later also used Eserig-Tena <i>et al.</i> (2011)
Reactive and proactive strategic flexibility according to five strategic imperatives: resources allocation needs, the need to modify business partnerships, emerging market opportunities, changing environmental conditions and changing organizational technology needs	Celuch <i>et al.</i> (2007); Celuch and Murphy (2010)
Measured by six items: flexibility in relation to opportunistic shifts in economic conditions, the emergence of an unexpected market opportunity, the emergence of a new technology that adversely affects the existing business, opportunistic shifts in customer needs and preferences, the market entry of new competition and adverse changes in government regulations	Developed and applied by Zahra <i>et al.</i> (2008), later also used by Guo and Cao (2014)
Measured via market flexibility, new product flexibility, expansion flexibility, manufacturing flexibility and supply chain flexibility	Singh <i>et al.</i> (2013b)
Strategic flexibility is measured according to its facilitators: development of core competencies, product development, improved customer focus, fostering innovation, stronger networking, improving risk management and promoting sustainable development	Dwyer <i>et al.</i> (2014)
Change of strategies according to the market entry of new competitors, changes in government regulations, shifts in customer needs and preferences, modifications in supplier strategies, the emergence of an unexpected opportunity, the emergence of an unexpected threat, political developments that affect the industry and shifts in stakeholder demands	Perez-Valls <i>et al.</i> (2015), adapted from Barringer and Bluedorn (1999)
Strategic flexibility is measured via strategic planning, using a three-item scale; the items are the evaluation and review of strategic plans; adjustments of strategic plans to changing environments; and strategic planning as continuous process	Ouakouak and Ammar (2015), adapting the measures of strategic planning from Segars <i>et al.</i> (1998) and Papke-Shields <i>et al.</i> (2006)

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