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Configurations of business model themes and strategies in small firms: a qualitative comparative analysis

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Abstract
Firms' strategies and business model themes (BMTs) entail choices that create a configuration of interdependent elements that ultimately affect a firm's performance. So far, extant studies on BMTs (i.e. novelty, efficiency, complementarity and lock-in) have neglected an explorative analysis of how configurations of BMTs and the choices of a firm's strategy (namely, the source of the competitive advantage and the market scope) are associated with a firm's performance in small and medium enterprises (SMEs). We address this limitation by analysing a sample of 96 small firms using a configurational approach. We identified four equifinal configurations leading to high performance and five equifinal configurations associated with low performance. Overall, our results suggest that in small firms, it is essential to combine a differentiation strategy with either consistent pairs of BMTs or the search for new avenues of value creation and capture, while featuring *too* many BMTs might be detrimental to their growth. Our study contributes to the scholarly debate about the relationship between business models and strategy.

Keywords Business models · Strategy · Configurational approach · Small and medium firms · fsQCA

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1 Introduction

'The real voyage of discovery consists, not in seeking new landscapes, but in having new eyes.' This evocative quotation by Marcel Proust's *In Search of Lost Time* (1923) summarises the daily dilemma of every manager searching for new solutions to the common business challenges of competition and growth. To create and capture value through the exploitation of business opportunities, firms need to design their own business models (i.e. a system of activities whose interactions and interdependencies can be used to create, capture and deliver value) (Zott et al., 2011). As Amit and Zott (2001) suggested in their seminal article, the business model theme (BMT) consists of 'configurations of design elements' (Zott & Amit, 2010, p. 221) that are orchestrated and connected to drive value creation and value capture. The same article proposed four BMTs (i.e. novelty, efficiency, complementarity and lock-in) applied in e-businesses. Amit and Zott's framework has been extensively used in the business model literature (Kulins et al., 2016; Leppänen et al., 2023; Pati et al., 2018; Zott & Amit, 2008). However, such works present some limitations.

First, whereas scholars have tested the four BMTs in different settings and for both large and small firms (Balboni et al., 2019; Brettel et al., 2012; Karmeni et al., 2022; Massa et al., 2017; Pati et al., 2018; Zott et al., 2011), in most cases, BMTs have been analysed alone or in pairs, with a focus on efficiency and novelty (de Oliveira Santini et al., 2020; George & Bock, 2011). Thus, by focusing on one or two BMTs, the extant studies do not fully exploit the richness and complexity of Amit and Zott's (2001) framework, which proposes four themes that can be simultaneously adopted by firms. Further, excluding rare exceptions (see Kulins et al., 2016; Leppänen et al., 2023), previous studies adopt deductive analytical methods (i.e. regression analysis), which limit the possibility of exploring combinations of BMTs and how the interactions with each other are associated with firms' performance.

Second, while BMTs explain how firms create and capture value from their transactions, strategy scholars maintain that business models need to match to a firm's strategy to enable them to achieve competitive advantage (Zott & Amit, 2008; Casadesus-Masanell & Ricart, 2010; Leppänen et al., 2023; Teece, 2010). Business model and strategy are indeed strictly related: a firm needs to both plan its strategy (i.e. deciding the sources of competitive advantage and the market scope it targets) and design its business model (i.e. deciding the BMTs on which it rests value creation and value capture). Overall, planning a strategy and designing a business model entail choices that create a configuration of interdependent elements that ultimately affect the firms' performance, depending on generated positive synergies or negative externalities (Zott & Amit, 2008). Notwithstanding this premises (for a recent theoretical debate on the relationship between business model and strategy, see also Bigelow and Barney (2021), Lanzolla and Markides (2021) and Massa et al. (2017), empirical studies on BMTs rarely explore the combinations of BMTs and strategy choices that are associated with performance (for a relevant exception, see Leppänen et al. (2023). In addition, such studies limit their analyses uniquely to the source of the competitive advantage neglecting the choice associated with the scope of the strategy adopted.

Addressing these two limitations of the current studies on BMTs and on their relationships with strategy, in this study, we explore configurations of the four BMTs and strategic choices (i.e. sources of competitive advantage and scope) associated with firm performance. Acknowledging that successful combinations of BMTs and strategy appear as 'coherent configurations of design elements that manifest themselves as peaks in the performance' (Zott & Amit, 2008, p. 6), we draw on configurational theorising (Fiss, 2007; Ragin, 2009). Defining configurations as 'the degree to which an organization's elements are orchestrated and connected by a single theme' (Miller, 1996, p. 509), configurational theorising allows researchers to fully capture the combinatory patterns that explain the relationship among elements. Adopting the fuzzy set qualitative comparative analysis (fsQCA) methodology, we overcome both the limits of other qualitative case-oriented research approaches that focus on one or two combinations of elements at a time and the assumptions of quantitative methods that include control variables not always associated with outcomes (Fiss, 2007; Misangyi et al., 2017).

Through an empirical analysis of 96 small firms in the manufacturing sector, we identified four equifinal configurations leading to high performance and five equifinal configurations associated with low performance. Three of the four configurations that lead to high performance combine two BMTs (efficiency—novelty, lock-in—complementarity, novelty—complementarity) with a differentiation strategy, either in a niche or broad market. The fourth configuration, instead, relies on the differentiation strategy with none of the BMTs proposed by Amit and Zott (2001). Conversely, three of the five configurations that lead to low performance combine three BMTs (efficiency—novelty—complementarity, efficiency—lock-in—complementarity) with a low-cost strategy, either in a niche or broad market. The other two configurations leading to low performance combine the BMT complementarity with a low-cost strategy in a niche market and the efficiency-complementarity BMT pair with a low-cost strategy in a broad market.

We contribute to studies on BMTs and strategies literature in two main ways. First, by exploring the adoption of all the four BMTs using a configurational perspective, we add to the limited empirical research that adopted a similar approach but focused to single or pairs of BMTs (namely efficiency and novelty) (Leppänen et al., 2023; Zott & Amit, 2007). Looking at how the four themes are combined to drive firms' performance, we not only better highlight the complex and changing business realities that SMEs face (Bhabra & Hossain, 2018; Eggers, 2020; Farjoun & Fiss, 2022) but also contribute to an improved understanding of the potential advantages and disadvantages of associating different sources of value creation and capture (Amit & Zott, 2001). Our findings suggest that a variety of configurations that match pairs of BMTs can enhance SMEs' performance while *too many* BMTs (e.g., three themes) could be detrimental to them. In addition, our results highlight that in every configuration of low-performing firms, complementarity is a BMT that is always present. Second, we contribute to the debate about the relationship between business models and strategy. Exploring configurations that combine BMTs and strategies, we provide a better understanding of the relationships and boundaries between these two concepts. We contribute to informing—through the business models lens—the strategy literature that has paid limited attention to the interdependencies within firms (Bigelow & Barney, 2021). In

this instance, our results show that the two strategic choices (i.e., source and scope of the competitive advantage) are essential components both in case of high performing and in case of low performing configurations of small firms. In addition, by analysing SMEs' strategies, combining both the source of the competitive advantage and the market scope, we add to extant empirical studies (Leppänen et al., 2023; Zott & Amit, 2007) that limit their analyses to cost leadership and differentiation strategies only and we answer to the recent call aiming to provide more "empirical evidence of differentiated SME business models" (Miller et al., 2021, p. 623). Our findings show that differentiation is present in all high-performance configurations and low-cost is present in the low-performance configurations. Further, we also demonstrate that the choice of the scope is not neutral on the configurations of small firms. This suggests that the empirical analysis should take into account the scope of the strategy for a complete understanding of the correspondence between the choices associated with the strategy and the choices associated with the business model both in large as well as in small firms.

All in all, our configurational theorizing provides a less conventional approach to the current research on business models and strategy in SMEs. Our paper also offers a better understanding of what small firms *should not do*. In fact, the configurations associated with low performances suggest managerial choices that are not simply the reverse of the configurations associated with high performance. We also believe that our focus on small firms is not only an empirical contribution, but it provides scholars and practitioners with novel opportunities either to validate current theoretical arguments or to generate new managerial insights.

The paper proceeds as follows. In the next section, we review the relevant literature on business model design themes and strategies. Then, in the methodological section, we explain the fsQCA methodology, present our data, and describe the variables. The subsequent section illustrates the findings, which are then discussed in the final section, together with their theoretical and practical implications and the limitations of our research.

2 Theoretical framework

In this section we review the extant literature on BMTs and on the relationship between BMTs and strategy. The objective of each subsection is to offer a comprehensive analysis of the state of the art of each topic. Specifically, we first analyze what the BMTs are and how they have been studied from the empirical standpoint, with a particular focus on SMEs. Then, we focus on the empirical work that investigated fit between strategic choices and BMTs. We conclude the theoretical section by making explicit the existing gaps of the literature that we aim to address in this paper.

2.1 Business model themes

The most recognised business model construct that explains the value creation and capture of firms was developed by Amit and Zott (2001). Value creation is the 'size of the pie' generated by the business model for all the participants,

including customers, suppliers, users, partners and stakeholders (Leppänen et al., 2023). Value capture refers to the 'size of the slice' a firm gets (i.e. to the portion of the value created that firms can seize). In particular, Amit and Zott (2001) suggested that firms' value creation and capture are based on four BMTs: novelty, efficiency, complementarity and lock-in. The four BMTs affect both value creation and value capture, knowing that they do not go hand in hand. If a firm's decisions concerning the BMTs lead to a greater overall size of the 'pie', there is no guarantee that the firm will also capture a larger portion of the extra value they generated because the extra value generated can be appropriated by customers, suppliers or other partners.

The novelty BMT relates to a new way to do business, for instance, by connecting previously unconnected parties, linking transaction participants in new ways or designing new transaction mechanisms (Zott & Amit, 2007). Therefore, novelty emphasises innovation that goes beyond the traditional sources of value creation, such as the introduction of new products or services (Amit & Zott, 2001), and embraces the idea of providing superior use value by offering something that can satisfy customers' and business model participants' desires in novel ways (Leppänen et al., 2023).

The efficiency BMT is related to transaction costs theory, which suggests that transaction efficiency increases when costs per transaction decrease (Williamson, 1979). This reduction can derive from the attenuation of uncertainty, complexity or information asymmetry (Williamson, 1979), as well as from decreasing coordination costs and transaction risks (Meyer et al., 1992). Lowered information asymmetry can also reduce customers' search and bargaining costs, allowing for quicker and better-informed decisions (Zott & Amit, 2007).

Firms create and capture value through complementarity BMT when they offer a group (bundle) of goods, services and technologies that together provide more value than the total value of having each of them separately. Such a bundle of elements generates synergies and adds value to a core offering. The complementary goods, services and technologies may be vertical (i.e. related to other value chain activities) or horizontal (provided by partner firms) (Amit & Zott, 2001).

The lock-in BMT concerns the involvement of customers or other business model participants in long-term relationships through higher switching costs or network externalities. This relationship leads to an increment in willingness to pay for customers (Williamson, 1979) and lower opportunity costs for firms (Katz & Shapiro, 1985). This BMT aims to prevent the migration of customers and business model participants to competitors through repeated transactions, customisation and personalisation of products and services, design of proprietary standards for business processes and establishment of trustful relationships with customers.

While Amit and Zott (2001) proposed four BMTs to explain value creation and capture in e-businesses, scholars have tested different BMTs in different settings for both large and small firms (Balboni et al., 2019; Brettel et al., 2012; Karmeni et al., 2022; Massa et al., 2017; Pati et al., 2018; Zott et al., 2011). In particular, empirical studies on SMEs focus primarily on efficiency and novelty BMTs, showing conflicting results in terms of their effects on firm performance (de Oliveira Santini et al., 2020; George & Bock, 2011).

For instance, regarding the efficiency BMT, Gronum et al. (2016) showed a positive effect on firms' performance due to the ability of SMEs to rapidly adjust the cost of transactions with customers to their volume, therefore reducing operating and inventory costs. On the contrary, other scholars have demonstrated that the efficiency BMT can lead to negative performance (Brettel et al., 2012; de Oliveira Santini et al., 2020). As some authors argue, SMEs adopting an efficiency BMT might be unable to compete with large firms that rely on greater economies of scale and benefit from greater bargaining power and lower capital cost (Pucci et al., 2017). In addition, Brettel et al. (2012) showed that an efficiency BMT does not significantly influence the performance of SMEs in the early stages of their life cycles but might be linked to greater firm performance in their later stages. The authors argue that the efficiency BMT enables SMEs to foster the efficiency of market transactions with a greater number of partners and to adopt standardised and formalised organisational structures and routines required in the late stages of their life cycles (Brettel et al., 2012; Mosca et al., 2021).

Studies focusing on the novelty BMT are in line with the findings of the original model by Amit and Zott (2001), showing a positive association with firms' performance (Brettel et al., 2012; Leppänen et al., 2023; Pucci et al., 2017). In a meta-analytical study of the literature focusing on business models in SMEs, de Oliveira Santini et al. (2020) found that SMEs should prefer the adoption of the novelty BMT over the adoption of the efficiency BMT, even though the latter might have a positive impact on the SMEs' performance. This is because the novelty BMT can compensate for limited financial and relational resources in SMEs operating in both manufacturing and service sectors (de Oliveira Santini et al., 2020; Karmeni et al., 2022). In addition, the study by Pati et al. (2018) explored the effect of firms' age on the relationship between BMTs and performance. By analysing a sample from an emerging economy (i.e. India), the authors showed that the novelty BMT provides a greater benefit to younger SMEs compared to mature SMEs because it helps SMEs to connect with suppliers and partners who may bring initial resources and capabilities to nascent firms, enables SMEs to target poorly served customer niches that are neglected by larger and older firms and supports SMEs' efforts to start new activities, hence providing opportunities for vertical and horizontal growth.

The empirical literature on efficiency and novelty BMTs also tested if and how the two BMTs combine one another (e.g. Balboni et al., 2019; Gerdoçi et al., 2018; Hu et al., 2022; Pati et al., 2018; Zott & Amit, 2007). The rationale for exploring the combined effect of efficiency and novelty lies in the 'ambidexterity' hypothesis initially advanced by Zott and Amit (2007, p. 182), suggesting that 'by emphasizing business model novelty, the focal firm may be better positioned to appropriate some of the value it creates through increased efficiency', while 'increasing the emphasis on efficiency BMT may enhance the return on design novelty'. However, contrary to this argument, the majority of extant empirical research shows that combining efficiency and novelty may be counterproductive to firm performance (de Oliveira Santini et al., 2020; Hu et al., 2022). Simultaneously adopting conflicting BMTs, firms may incur 'suboptimal resource allocation' (Zott & Amit, 2007, p. 186), which results in a stronger negative effect for SMEs (Pati et al., 2018). It is worth noting that all the previous studies adopted deductive analytical methods (i.e. regression

analysis), limiting the exploration of efficiency and novelty themes as interaction terms, therefore limiting the interpretation of the research findings to the fact that the two design themes are most likely to be 'substitutive rather than complementary' (Balboni et al., 2019, p. 121). This limits the possibility of providing a more nuanced explanation about their simultaneous adoption. In addition, as Amit and Zott suggested in their seminal papers (2001, 2007), the four BMTs are neither orthogonal (for instance, novel design elements may engender lower transaction costs), nor are they mutually exclusive. On the contrary, they are interdependent and they may be simultaneously present in any given business model, as the presence of each theme can enhance (or hinder) the effectiveness of any other themes.

Focusing on efficiency and novelty, previous studies neglected to analyse how the adoption of lock-in and complementarity can enhance performance. Lock-in and complementarity BMTs has been included only in the research that explored the configurations of the four BMTs. However, such type of studies is still extremely limited. In particular, Kulins et al. (2016), studying a sample of 41 e-business entrepreneurial firms, found that three configurations (i.e. efficiency and novelty; novelty and lock-in; efficiency, complementarities and lock-in) were associated with an increment of stock market value of the analysed firms. However, Kulins and colleagues (2016) did not find any configuration of BMTs associated with low performance. More recently, Leppänen and colleagues (2023) tested how novel business models combine with other value drivers and strategies to affect firm performance under varying conditions. Analyzing two samples of publicly traded internet-enabled firms, this study finds that novelty produces high performance only in combination with other BMTs.

2.2 Strategy and business model themes

The literature on business models and strategy (Zott and Amit, 2008; Aversa et al., 2015b; Casadesus-Masanell & Ricart, 2010; Leppänen et al., 2023; Teece, 2010) maintains that a successful business model alone is insufficient to lead to competitive advantage if not differentiated, efficient and hard to imitate. Such an outcome is the result of coupling strategy and BMTs together. Strategy describes a firm's long-term choices about its positioning in product markets and is an 'essential step in designing a competitively sustainable business model' (Teece, 2010, p. 180). In addition, a business model makes explicit and must be consistent with the strategic choices of a firm. As summarised by Amit and Zott (2008), strategy and business models are complements and a firm's performance is a function of the fit between BMTs and strategy.

Designing a firm's strategy considers two main choices: one concerning the source of competitive advantage a firm wants to pursue and one concerning the market scope it wants to target (Porter, 1985; Thompson et al., 2012).

First, the source of the competitive advantage a firm pursues can be linked to differentiation or low cost (Porter, 1985). Differentiation entails offering something different from rivals that delivers superior value, for which customers are willing to pay a premium price that is high enough to cover the added costs that differentiation

implies. A market position in line with differentiation requires continuous innovation. Conversely, low cost entails finding ways to lower overall costs at levels that competitors cannot reach while still providing offers that customers find acceptable. For a market position that aligns with low cost, it is essential to explore all possible avenues to lower costs (Thompson et al., 2012).

From the above, a sort of alignment emerges—through mutual reinforcement—between differentiation as a source of competitive advantage and novelty as a BMT, as well as between low cost as a source of competitive advantage and efficiency as a BMT. However, the empirical validity of such relationships remains controversial. For example, Amit and Zott (2008) did not find any support for the positive interaction between low cost and efficiency. Conversely, they demonstrated that both differentiation and low-cost strategies can be complemented by novelty (Amit & Zott, 2008).

Recent studies have started exploring the joint relationship between sources of competitive advantage (differentiation or low cost) and BMTs. Leppänen and colleagues (2023) recently found a consistently high-performing combination of novelty and efficiency as BMTs and differentiation as a source of competitive advantage contingent on the intensity of competition, firm size and firms' technological environment. They also found that such a pattern combines with other BMTs (lock-in and complementarity) under specific circumstances (mature technologies or small firms), thus suggesting the presence of equifinality. Specifically, the same strategy (namely, differentiation) can be enacted by varying systems of internally consistent BMTs (Leppänen et al., 2023).

The second choice of a firm's strategy is scope, which is the part of the total market a firm aims to target (Porter, 1985). The scope can be broad or narrow. The former typically targets all buyer groups of the market, while the latter usually targets a small portion of buyer groups that is defined by geographic uniqueness, specialised product requirements or attributes that appeal only to niche members. When a firm targets a narrow scope of the market (i.e. a niche), its strategy is called *focused*. The choice of scope combines with either differentiation or low cost, leading, respectively, to focused differentiation or focused low-cost strategies. Although the advantages of a focused strategy might be especially relevant for SMEs whose endowment of resources is limited (Porter, 1985), it is not self-evident that SMEs are doomed to adopt a focused strategy, and that the choice between narrow strategy or broad strategy is an option only for large firms. Indeed, such a choice is particularly relevant also for SMEs concentrated on general purpose technologies (i.e., nanotechnologies, telecommunications) that can have many different uses in a variety of different industries. On the one hand, small firms can decide to target a sole market (narrow scope) in line with their limited resources. On the other hand, despite the limited endowment of resources, small firms might decide to target a variety of sectors (broad scope) to diversify the risks associated to the market trend of a sole industry.

Whereas previous studies have explored the effectiveness of combining BMTs and sources of competitive advantage, the effectiveness of adopting focused strategies and different BMTs has been neglected by extant empirical research. From a theoretical perspective, we may expect that the alignments between a focused differentiation strategy and novelty and between a focused low-cost strategy and

efficiency would follow the same motives discussed above. However, we contend that a focused strategy is also likely to align with other BMTs. For example, if we consider that a firm that adopts a focused strategy suffers not only from the competition of the competitors, but also from the risk that customers' preferences shift to those desired by the majority of the market, it could be worth including the BMTs lock-in or complementarity in its value proposition to prevent such risk.

As demonstrated by the review of the empirical literature on BMTs, the large majority of previous studies has either looked at each of the BMTs as an isolated contributor to firm performance (alone or through its relationship with another BMT) and substantially neglected that, as suggested by Amit and Zott (2008), firm's performance is a function of the fit between BMTs and strategy. Hence, in this paper, we build on the few studies adopting a configurational approach to the BMTs (Kulins et al., 2016; Leppänen et al., 2023) to explore how all four BMTs interact among themselves and with the firm's strategy. The configurational theorising has been recently indicated (Farjoun & Fiss, 2022; Furnari et al., 2021; Täuscher, 2018) as an appropriate theoretical lens for exploring complex systems, such as business models, addressing the key weaknesses of fit-based models that are traditionally adopted for exploring the relationships between strategy and organisational elements.

In particular, exploring how the four BMTs can be combined with competitive strategies in SMEs, we address some limitations of previous studies that have adopted configurational theorising. We add to Kulins and colleagues (2016), who limited their analysis to the combinations of the four business model design themes without considering a firm's strategy. We also add to Leppänen et al. (2023) who tested a set of hypotheses regarding how and when the novelty BMT is associated with high and low performance, hence failing to explore the configurations of all four BMTs and strategies. In addition, as illustrated above, they analysed only how BMTs combine with one of the choices of a firm's strategy, i.e. the source of the competitive advantage (differentiation and low cost), while neglected to include the choice related to the market scope (broad or narrow) which is essential for fully describing the strategy of a firm regardless of its size. Our study aims to overcome these shortcomings by conducting an explorative analysis of configurations of the four BMTs and strategic choices (i.e. the source of competitive advantage and market scope) associated with both high and low performance in SMEs.

3 Research design

We adopted an fsQCA approach to conduct our explorative analysis of the configurations of BMTs and strategies associated with firms' performance. FsQCA is a set-theoretic method based on set theory and uses Boolean comparative logic to reduce and identify combinations of conditions (configurations) that, in conjunction, explain a given outcome (Fiss, 2011; Misangyi et al., 2017; Ragin, 2014). FsQCA draws on the three elements of casual complexity (Fiss, 2007; Ragin, 2009): equifinality—alternative combinations of factors (i.e. configurations) can produce the same outcome; conjunctural causation—single conditions display their effect only

together with other conditions; and causal asymmetry—the presence of a condition for an outcome Y does not imply the absence of that condition for the negation of the outcome ~ Y- (Meyer et al., 1993; Ragin, 2009). This means that configurations of attributes associated with the presence of an outcome are not the reverse of configurations associated with their absence (Aversa et al., 2015a; Greckhamer et al., 2018; Täuscher, 2018). Building on the casual asymmetry attribute, we explored configurations of BMTs and firm strategy associated with both high and low performance.

3.1 Data collection

The configurational theorising in which fsQCA is rooted relies on purposive sampling (Furnari et al., 2021; Ragin, 2009). The analysis was carried out on an original dataset of Italian SMEs (with 1 to 249 employees) built within a national project funded by the Italian Ministry of Education and Research that aimed to explore the strategy and business model characteristics of small-and medium-sized firms. The initial sample of 3100 small and medium-sized Italian firms was representative of the national population of small and medium manufacturing firms concerning firm size, gender, age, and industry (considering the technological intensity index developed by the OECD—Eurostat categorisation). Similar to previous studies (e.g., Cerrato & Piva, 2012; Monteduro et al., 2021), our sample is stratified: homogenous groups of firms are identified in terms of firm size, industry, and geography, including all the NACE manufacturing sectors. We selected SMEs operating in eight different ATECO (the Italian SIC code) sectors (see Table 1).

Following previous studies, we purposively focused on Italian SMEs operating in these industries, as they are likely to adopt at least one of the BMTs to enact their strategic choices concerning the source of competitive advantage and market scope (Bagnoli & Redigolo, 2016; De Massis et al., 2012; Sorrentino & Garraffo, 2012). This step has reduced our initial sample to 133 firms. As we have considered only the completed questionnaire, our final sample consisted of 96 SMEs, which includes 17 firms established in 2007, 31 in 2008, 22 in 2009 and 26 in 2010. Due to our

Table 1 Partitioning of the sample into sectors represented by the European denomination ATECO 2007

ATECO code	ATECO sectors	Number of firms	Percentage of the sample
20	Manufacture of chemical products	4	4.17%
26	Manufacture of computer, electronic and optical products	13	13.54%
27	Manufacture of electrical and electronic equipment	20	20.83%
28	Manufacture of machinery and equipment	44	45.83%
29	Manufacture of motor vehicles, trailers and semi-trailers	5	5.21%
30	Manufacture of other transport equipment	4	4.17%
32	Other manufacturing industries (e.g. clothes and safety equipment)	2	2.08%
33	Repair and installation of machinery and equipment	4	4.17%
	Total	96	100%

Table 2 Firms' headquarters locations

Firms' Headquarters	N. Firms	Percentage of the sample
Northern Italy (regions: Aosta Valley, Piedmont, Liguria, Lombardy, Emilia-Romagna, Veneto, Friuli-Venezia Giulia and Trentino-Alto Adige)	68	70.85%
Central Italy (regions: Lazio Marches, Tuscany, Umbria)	18	18.75%
Southern Italy (regions: Abruzzo, Apulia, Basilicata, Calabria, Campania, Sardinia, Molise, and Sicily)	10	10.4%
Total	96	100%

Table 3 Firms' statistics

Firms' Characteristics	Mean	Std. Dev
Age	5.5	1.1
Size	9	9.7
Turnover (thousands)	908.40 €	1493.3 €

sampling strategy, the final sample includes only small firms (with 1 to 49 employees). Tables 2 and 3 report the headquarters locations and key firms' statistics of the final sample.

Data were collected through a survey submitted from December 2015 to February 2016. We collected our dataset using the computer-assisted telephone interviewing method. This method allowed us to be confident about the identity of the respondents and to monitor the quality of the answers provided. Most of the respondents were members of the founding team (87%) or CEOs with at least five years of experience leading their firms; 75.9% of the CEOs and founders were male, and their average age was approximately 53 years.

A preliminary draft of the questionnaire was revised by a pool of scholars in the fields of strategy. We also conducted a pilot study with selected informants. To limit respondent bias, our respondents were unaware of the theoretical framework. We encouraged the respondents to provide honest answers and guaranteed their anonymity (Pittino et al., 2017).

To identify the BMTs, we built on the model suggested by Amit and Zott (2001) and Zott and Amit (2007, 2008). Respondents had to express their level of agreement on a scale from 1 (totally disagree) to 7 (totally agree). In Tables 4 and 5, we report the complete list of items adopted for our study and the key descriptive statistics of the calibrated variables.

We relied on 10 items from our survey to measure the four BMTs (i.e. complementarity, efficiency, novelty and lock-in). To measure *efficiency*, respondents had

Table 4 List of items adopted for the study

Constructs	Measuring items Sources: Zott and Amit (2007, 2008); Porter (1985)
Business Model	Efficiency • The business model enables fast transactions • Transactions are transparent; flows and use of information, services and goods can be verified • Costs for participants in the business model are reduced (i.e. marketing and sales costs, transaction-processing costs, communication costs, etc.) • Overall, the business model offers high transaction efficiency
	Novelty • The business model offers new combinations of products, services and information • The business model provides access to an unprecedented variety and number of participants or goods • The business model links participants to transactions in novel ways • Overall, the firm's business model is novel
	Lock-in • Overall, the business model enables the firm to retain customers over the long term (e.g. through contractual agreements or technological constraints associated with the offering)
	Complementarity • Overall, the business model is designed to enhance a set of complementary products or services that provide, in combination with each other, greater value than having each product or service separately
Strategy	Niche Market • The firm adopts a niche strategy that focuses on restricted and particular segments of the market
	Differentiation • The firm is highly innovative (launching radically new products/services or patents) compared to the sector in which it operates

Table 5 Key descriptive statistics of the variables

Variables	Mean	Std. Dev	Minimum	Maximum
Efficiency	0.7652	0.2378	0.051	0.951
Novelty	0.6819	0.2791	0.051	0.951
Lock-in	0.5582	0.3218	0.081	0.951
Complementarity	0.6188	0.3319	0.051	0.951
Niche Market	0.7578	0.2801	0.051	0.951
Differentiation	0.6961	0.2833	0.051	0.951

to assess their agreement with statements regarding the transaction costs associated with their business models and the degree of transaction efficiency. *Novelty* was measured by assessing how firms' business models offer new combinations of products and services and whether stakeholders (e.g. suppliers) are involved in conducting transactions in novel ways. We assessed *lock-in* by asking the respondents how their business models enable customer engagement in repeat transactions. Finally, to understand the *complementary* theme, we asked the respondents whether customers

value their products and services more when they are provided in combination with others as opposed to the total value of having each of the products or services provided separately.

Regarding the *firms' strategies*, we relied on Porter's (1985) competitive strategies. Respondents were asked to assess the source of the competitive advantage their firms pursue either as low cost (i.e. the firm intends to be a low-cost producer) or differentiation (i.e. the firm offers a unique product or service), expressing their level of agreement (on a scale from 1 – totally disagree, to 7 – totally agree) with the following statement: 'my organization launches radically new products and patents on a regular basis.' On the other hand, respondents were asked to assess the market scope of their strategy: narrow (i.e. the firm competes in a niche as it targets a specific type of customer, product or geographic location) or broad (i.e. the firm competes in the entire industry) expressing their level of agreement (on a scale from 1 – totally disagree, to 7 – totally agree) with the following statement 'my organization focuses on restricted segments of the market.'

Concerning *firm performance*, previous studies show that SMEs' financial and revenue performance can be considered narrow metrics of performance, as they can be obfuscated by tax arbitrage. In addition, SMEs are frequently not listed on stock markets; hence, share prices and equity are not easily operationalised (Acs & Mueller, 2008; Lopez-Garcia & Puente, 2012). Therefore, we adopted employment growth as a firm performance measure (Janssen, 2009; Jayawarna, et al., 2007). To calculate a firms' employment growth, we used the compound annual growth rate (CAGR):

$$CAGR = \left(\frac{Employees\ Ending\ Value}{Employees\ Beginning\ Value} \right)^{\left(\frac{1}{Age\ of\ the\ Firm} \right)} - 1$$

We gathered data related to firms' employment growth from our survey and through AIDA, the Italian version of the Amadeus-Bureau Van Dijk database (Cabigiosu & Campagnolo, 2019; Cucculelli & Bettinelli, 2015).

3.2 Analysis

The fsQCA analysis relies on three main steps: 1) the calibration process, 2) the analysis of the truth table for necessity sub-relations and 3) the logical minimisation of the truth table to identify sufficiency sub-set relations (Fiss, 2011; Galeazzo & Furlan, 2018; Ragin, 2009). The first step aims to calibrate the conditions (e.g. business model design themes) into set membership scores considering theoretical and empirical benchmarks (Greckhamer et al., 2018; Ragin, 2014). We relied on the direct calibration method (Meuer, 2014; Ragin, 2009) applying the threshold of 0.9 or higher for full membership, 0.1 or lower for full non-membership, and 0.5 as a crossover point. As we measured the 4 business model design themes through 10 items based on 1–7 point Likert scales, we adopted the minimum and maximum of the scale as full non-membership and full membership, and 5 as a crossover point (Fiss, 2011; Galeazzo & Furlan, 2018; Lewellyn & Muller-Kahle, 2016).

We combined the four items associated with efficiency and novelty with the logical operator OR, which considers membership in the set formed from the union of two or more component sets (e.g. two or more items) as the maximum value of the case's memberships in the component sets (Ragin, 2009). We followed previous studies (Arellano et al., 2021) in comparing our threshold values with values from descriptive studies that adopted similar samples. Our threshold values are in line with previous studies on BMTs in SMEs (e.g. Brettel et al., 2012) that reported a mean above 4 and 5 using a 7-point Likert scale for the efficiency and novelty variables. We also noted that previous studies on business models in SMEs relied on a self-report method, as these variables can be hard to measure and data are either not available or do not enable reliable comparisons between sectors or firms (Gerdoçi et al., 2018; Pucci et al., 2017). We, therefore, adopted the same calibration strategy as recent articles (Leppänen et al., 2023) that calibrated all four business model design themes and the two firms' strategy variables relying on the scales used in the data collection. While calibration of conditions should be based on theoretical or substantial knowledge of the cases to define meaningful thresholds (Ragin, 2009), scales and other similar measurement instruments can provide practical help in calibration (Misangyi et al., 2017; Schneider & Wagemann, 2012) in cases describing socially complex phenomena, such as this study, characterised by little or no theoretical or substantial knowledge about meaningful thresholds.

The firm's strategy was also assessed through items based on 1–7-point Likert scales. We chose the middle of the scale as crossover points and the extremes 1 and 7 as points of full membership and full non-membership. To avoid the issue related to the fuzzy membership score of exactly 0.5, we followed previous scholars (Fiss, 2011; Pappas & Woodside, 2021) by adding a 0.001 constant to all scores.

We considered yearly growth in employment to assess a firm's performance. We used data from our survey and the Italian AIDA database to collect information regarding the performance of firms. We calculated the CAGR of the employment rate of all firms present in the AIDA database that were founded before 2010 for the eight ATECO sectors (equivalent to the SIC code in Italy) in which the firms from our sample operate. We calibrated the outcome variable depending on the performance of the sector. Hence, for each sector, the value of the 75th percentile of the CAGR of the employment rate calculated from 2008 to 2014 was used as a measure of full membership in the set of high-performance firms (for firms founded after 2008, we took the year after their founding as a starting point for the calculation of the CAGR). We then decided to use the value of the 25th percentile of the employees' CAGR as a measure of full non-membership in the set of high-performance firms, and the 50th percentile was used as the crossover point. In this way, all firms in the sample that performed below the average of their sector were excluded from the set of high-performance firms (Fiss, 2011; Pappas & Woodside, 2021; Ragin, 2009). To calibrate the low-performance firms, we used negation of the outcome through fsQCA 3.0 software.

The second step of the analysis considered the necessary analyses of all conditions and their negations. We applied the recommended consistency benchmark of ≥ 0.9 (Pappas & Woodside, 2021; Schneider & Wagemann, 2012), and found no necessary conditions.

We then performed the sufficiency analysis as the third and last step of the analysis. Using Ragin's (2009) truth table algorithm, we identified all logically possible combinations of absent and present conditions (Greckhamer et al., 2018; Meuer, 2014). We minimised the truth table by considering the coverage threshold in one case, which indicated the minimum number of empirically observed cases for each configuration (Greckhamer et al., 2013). Next, we set the consistency threshold—the proportion of cases that were consistent with the outcome—at 0.75, in line with the recommended minimum threshold (Fiss, 2011; Greckhamer et al., 2018). As Ragin's truth table analysis displays all theoretically possible configurations, including those that do not show empirical evidence (Ragin, 2009), we relied on counterfactual analysis, which offers solutions to overcome the limitations of a lack of empirical instances. We identified intermediate and parsimonious solutions (Fiss, 2011; Greckhamer, 2016), the former of which include assumptions based on easy counterfactuals, which are based on researchers' assumptions, and the latter of which include all simplifying assumptions of both easy and difficult counterfactuals. The conditions in the parsimonious solution are denoted as core conditions because they withstand both easy and difficult counterfactuals, while the intermediate solution stands between the parsimonious and complex (no counterfactuals) solutions and is identified as peripheral (Fiss, 2011; Furnari et al., 2021). As our intermediate and parsimonious solutions are the same, we do not differentiate between core and peripheral solutions.

3.3 Robustness tests

As fsQCA analysis is sensitive to calibration measures, we ran additional fsQCA analyses to ensure robust results (Meuer et al., 2015; Skaaning, 2011). First, we conducted the necessity test with benchmarks ranging from 0.9 to 0.8. However, we could not find any necessary conditions. We then ran analyses for different thresholds by calibrating the CAGR of the firms' employment growth using different values. For example, we used the 50th percentile of the employees' CAGR as a measure of full non-membership of high-performance firms and the 75th percentile for the crossover point, while the 90th percentile was used as a measure of full membership. Our results remained qualitatively unchanged, yet we obtained slightly lower coverage. We also changed the frequency threshold from one to two and three cases, which resulted in fewer configurations for both high-and low-performance configurations. However, the patterns and qualitative insights from our results did not change.

4 Results

Tables 6 and 7 report the results of our fsQCA analysis. We used black circles '●' to visualise a condition of presence, and crossed-out circles '⊗' to indicate the absence of such a condition, while empty cells indicate the condition 'don't care' (Fiss, 2011; Greckhamer, 2016). The 'raw coverage' shows the share of the outcome

Table 6 Configurations leading to high performance (HP)

Configurations	1	2	3	4
Business model				
Efficiency	●	⊕	⊕	⊕
Novelty	●	⊕	●	⊕
Lock-in	⊕	●	⊕	⊕
Complementarity		●	●	⊕
Strategy				
Niche Market	⊕	⊕	●	
Differentiation	●	●	●	●
Consistency	0.744	0.735	0.773	0.783
Raw coverage	0.178	0.166	0.139	0.217
Unique coverage	0.031	0.042	0.023	0.066
Solution consistency	0.76			
Solution coverage	0.32			

Black circles indicate the presence of a condition, and circles with "+" indicate its absence

Blank spaces indicate "don't care."

explained by each configuration and the 'unique coverage' indicates the proportion of cases that feature the outcome that is covered by a given configuration. The 'overall solution coverage' indicates the raw coverage aggregated across all configurations (Greckhamer et al., 2018).

Table 7 Configurations leading to low performance (LP)

Configurations	1	2	3	4	5
Business model					
Efficiency	●	●	●	⊕	●
Novelty		●	●	⊕	⊕
Lock-in	⊕	⊕	⊕	⊕	●
Complementarity	●	●	●	●	●
Strategy					
Niche Market	⊕	⊕		●	●
Differentiation	⊕	⊕	⊕	⊕	⊕
Consistency	0.762	0.762	0.758	0.771	0.748
Raw coverage	0.152	0.152	0.217	0.143	0.188
Unique coverage	0.003	0.016	0.025	0.007	0.023
Solution consistency	0.75				
Solution coverage	0.28				

Black circles indicate the presence of a condition, and circles with "+" indicate its absence

Blank spaces indicate "don't care."

4.1 Configurations leading to high performance

Our analysis identified four configurations that lead to high performance (HP; Table 6). We found that three configurations combined BMTs and firms' strategy attributes, while only one configuration led to high performance by relying only on a firm's strategy.

In particular, Configuration HP1 shows that firms achieve high performance by combining efficiency and novelty with a differentiation strategy and a broad scope. Configuration HP2 illustrates that a differentiation strategy with a broad scope can also be combined with lock-in and complementarity BMTs. In contrast, Configuration HP3 combines a strategy of focused differentiation with novelty and complementarity as BMTs. Finally, for Configuration 4, we found that small firms can achieve high performance by relying only on a differentiation strategy (regardless of scope) and not adopting any specific source of value creation represented by the four BMTs. To sum up, we identified four different but equifinal configurations leading to high growth in small firms in which differentiation is a condition of presence. In contrast, the choice related to the scope of the firm did not show any persistent conditions across the four configurations. Specifically, competing in a niche is either a condition of presence (Configuration HP3) or a condition of absence (i.e. configurations HP1 and HP2 require a broad scope) and even a 'don't care' condition (Configuration HP4). While this means that differentiation is a key attribute for achieving high performance, our results show that differentiation as a source of competitive advantage can be enacted by different combinations of consistent BMTs.

In the Appendix, we relied on a wide range of secondary data (e.g., press releases from Factiva, firms' websites and firms' reports) to describe a case for each configuration leading to high performance. For the sake of privacy, we anonymised the analysed firms. The cases we reported for each configuration are exemplary cases that we selected to better describe how the configurations leading to high performance combine interdependent choices at the strategic level with those at the BMT level.

4.2 Configurations leading to low performance

Our findings related to low-performance firms (LP; Table 7) show different configurations compared to those leading to high performance. All configurations that characterise low-performing small firms share the condition of absence of differentiation as a source of competitive advantage (i.e. in all low-performing configurations, the source of competitive advantage is low cost). Such a condition, in most configurations (three out of five), combines with the condition of the presence of three BMTs. These configurations are LP2, LP3 and LP5. In configurations LP2 and LP3, a low-cost strategy is combined with the triple combination efficiency—novelty—complementarity, while in Configuration LP5, a focused low-cost strategy combines with the triple combination efficiency—lock-in—complementarity. In the remaining two configurations, a low-cost strategy combines with the pairwise combination efficiency—complementarity in Configuration LP1, while a focused low-cost strategy

combines only with the design theme complementarity in Configuration LP4. Similar to high-performing configurations, configurations leading to low performance in small firms are characterised by all possible conditions for the choice regarding market scope (narrow, broad or even 'don't care').

In the Appendix, we report exemplary cases to describe how the configurations leading to low performance combine interdependent choices at the strategic level with those at the BMT level.

5 Discussion

In this paper, we explored the configurations of BMTs and firm strategies associated with high and low performance in small firms. BMTs and firms' strategies are distinct but interdependent concepts that combine in configurations to jointly affect firms' performance. Despite this general wisdom in the business model and strategy literature, studies that explore the combination of a firm's strategy and the four BMTs are scant (for some exceptions see Kulins et al., 2016; Leppänen et al., 2023). These studies present some limitations that we have addressed in our study. We contribute to BMTs and strategy literature in the following ways.

First, we extend the literature that has adopted a configurational approach to the study of the relationship between BMTs, strategy, and firm performance. We explored the adoption of all the four BMTs and how these are combined with different sources of value creation and capture. Our paper is among the first to explore the configurations of BMTs in small firms operating in manufacturing industries. Our exploratory analysis of high-performing and low-performing small firms elucidates configurations that either support extant research findings or highlight original configurations that are new when compared to those of existing studies.

The combination of efficiency—novelty confirms (some of the) previous findings; specifically, it has already been associated with high performance in firms operating in e-business (Kulins et al., 2016; Leppänen et al., 2023). Adopting such a configuration, combined with a strategy of differentiation with a broad scope, a firm is likely to create an offer that is simultaneously distinctive, based on its innovations, and attractive, based on its low transaction costs, to a large market portion and is simultaneously hard to imitate.

The configuration lock-in—complementarity, combined with a strategy of differentiation and broad scope, instead represents an original configuration. Complementarity is aimed at providing a bundle of goods or services that generate more value than the total value of each good separately. Such services might be, for instance, design services combined with the production of components or semi-worked products. If customers value such combinations, they are likely to engage in repeated transactions since they will experience higher switching costs if they buy the components or semi-worked products and the design services separately. A complementary design service combined with a production service builds trust in supply relationships, which likely generates synergies among the parties and increases customers' willingness to pay (Aversa et al., 2021).

The configuration of BMTs novelty—complementarity with a focused differentiation strategy represents another original finding of our study, which stands apart from extant empirical research. In this configuration, the introduction of innovations (novelty) is likely to be inspired by complementarity. Small firms may add innovation to their initial offer to improve the overall product/service experience and enhance different stages of the customer lifecycle (e.g. use, maintenance and disposal). Moreover, it is worth underlining that such a configuration implies a narrow scope. A firm adopting a focused strategy suffers not only from the competition of firms that are in the same niche but also from the risk that the preferences of niche members shift to those desired by the majority of the market. Therefore, complementarity might be essential to prevent the consequences of such risks. Hence, a small firm adopting a focused strategy reinforced with complementary products or services (provided most commonly by partner firms) can provide greater value than the total value of having each of them separately, thus creating fertile terrain to strengthen relationships with customers and promote the growth of the firm.

It is also worth noting that one of our high-performing configurations surprisingly does not combine with any predominant BMT. A similar configuration has been found by Leppänen and colleagues (2023) among those configurations associated with low performance in firms characterized by a mature enabling-technology. Though this result needs to be sustained by further research, it may suggest the existence of new and different sources of value creation and capture that are not currently included in the four BMTs that Amit and Zott (2001) originally proposed for e-businesses (as also recently advanced for digital sharing platforms by Jiang et al. (2021). This is the case, for instance, of small firms working as subcontractors (see HP4 in the appendix), whose growth is mainly driven by the growth of a few co-located customers, which mirror their business models. Without minimising the role that efficiency, complementarity, lock-in and novelty might play in the success of such firms, it might be the case that intangible sources of value, such as the social relationships in which such firms are embedded, play a relevant role in determining their performance.

We found novel configurations leading to low performance in small firms. In particular, the configuration of BMTs efficiency—complementarity with a strategy of low-cost and broad scope emerged by Leppänen and colleagues (2023) study among those configurations associated with high performance. In the case of our study, exploring small manufacturing firms, it may suggest the concurrent needs to serve a large base of different customers while pursuing efficiency and containing costs eventually induce firms to invest their limited resources into tangible resources and cost-efficient processes eventually reducing their investments in new human resources. Among the low performance configurations, three of them combines three BMTs (efficiency—novelty—complementarity; efficiency—lock-in—complementarity) with a strategy of low cost and either a broad or a narrow market scope. Firms simultaneously combining three BMTs with a low-cost strategy are likely to suffer risks of suboptimal resource allocation and resource ambiguity (Zott & Amit, 2007). The former (suboptimal resource allocation) might be due to the complexity that contemporarily embracing too many themes can create. Such risk appears higher for small firms in which organisational capabilities are poor and a manager is likely to be the sole leader responsible

for decisions concerning both strategy and business models. The latter (ambiguity) might be associated with contrasting thrusts between complementarity and other two BMTs with a low-cost strategy that gets the firm 'stuck in the middle' (Porter, 1985). In other words, it might be that the aforementioned combinations of many BMTs generate greater total value but that the share of the value that is appropriated by other participants in the transaction (i.e. suppliers, suppliers of complements or even customers) is greater than the share of value appropriated by the firm itself.

As a second contribution, our paper adds to the debate on the relationship between business models and strategy (Leppänen et al., 2023; Massa et al., 2017). Our findings advance the interpretation of their relationships showing that differentiation is a source of competitive advantage (high performance) if implemented by a variety of internally consistent pairs of BMTs in specific market scopes. Similarly, low-cost leads to low performance if enacted by combinations of BMTs in specific market scopes. In particular, the configuration of complementarity BMT with a low-cost strategy represents an original finding of our study, which stands apart from extant empirical research of BMTs in SMEs. Small manufacturing firms relying only on the production of cheap complementary products are less likely to grow in size as they are continuously threatened by the emergence of new competitors: either larger firms exploiting economies of scale or new entrants enlarging their product range. We also show that in the configurations leading to low performance there is a constant combination of low-cost strategy and the complementarity BMT. The reasons for such an outcome can be linked to the incongruence that exists between the two elements. First, for a small firm, it might be hard to find feasible avenues to reduce costs, which is a necessary avenue to charge, in turn, lower prices to the customers. Second, when such a market position (low cost) is combined with complementarity, it is fundamental for an small firm to rely on complementary products and services provided by partner firms that combine with the standard offer (typical of a low-cost strategy) of the focal firm. In such cases, the market position that the firm chooses implies a low price that enhances the probability that although the overall configuration might lead to value creation, most of the value is shifted to the provider of complementary products or services rather than captured by the focal firm.

Interestingly, the role of scope varies across solutions, therefore confirming that regardless their limited resources, small firms can target both niches and the broad market when they are capable of configuring their BMTs. To fully capture the relationship between strategy and business models, the choice associated with the market scope must be considered since it combines not only with the choice of the source of competitive advantage but also with the choice of the logic of value creation and appropriation underpinned in the business model. We argue that our configurational theorizing provides a less conventional approach to the current thinking on business models and strategy in SMEs. We offer a better understanding of what small firms should not do by showing that configurations associated with low performances indicate managerial choices that are not simply the reverse of the configurations associated with high performance.

6 Managerial implications

Our study provides some interesting suggestions for managers of small firms, as it shows that choices related to the source of competitive advantage, market scope and BMTs are distinct but interrelated when confronted with a firm's performance. First, our findings indicate that, for a small firm to thrive, choices related to the source of the competitive advantage and the market scope must be enacted with a set of consistent BMTs. More specifically, while firms can thrive by pursuing a differentiation strategy, they can hardly succeed in adopting any combination of low-cost strategy with BMTs in a broad or narrow market scope. Second, proving that specific configurations that combine two BMTs can lead to higher performance than configurations with either one or three themes suggests that small firms should pay attention to both *how many* and to *what* sources of value creation and capture they combine. Combining two BMTs creates a sort of 'causal ambiguity' and 'uncertain imitability' around a firm's strategy that might isolate successful small firms from the competitive threats of their counterparts. Again, noting that configurations that combine three design themes typically lead to low performance either gives further credit to the idea that there is a limit on how many BMTs a small firm can successfully handle, considering that most of the managerial choices are on the shoulders of the entrepreneur, or that the more a small firm combines BMTs, the more it generates diseconomies of scope and negative externalities due to the risk of contrasting sources of value creation, which in turn tarnishes the brand identity of the firm.

7 Limitations and further research

Our study has some limitations that can provide avenues for future research. First, while we considered configurations as a 'steady state', scholars interested in business model and strategy configurations could investigate how configurations evolve over time (Aversa et al., 2015a). This will enable scholars to explore configurations of BMTs and strategies developed over cycles of expansion and crises (Eggers, 2020; Marcazzan, et al., 2022).

Second, we overlooked the effects of competences and firms' capabilities that allow managers to design and revise BMTs and strategy configurations of the present on the basis of those futures (Man et al., 2002; Whyte et al., 2022). Scholars may also explore leader behaviour and top management team compositions (Gaim et al., 2021; Scapolan & Gianecchini, 2021) that can be relevant in determining SMEs' competitive advantage. Further studies should explore the impact of these elements by conducting in-depth qualitative case studies.

8 Conclusion

Strategy and BMTs entail choices that create a configuration of interdependent elements that are likely to jointly affect a firm's performance. Although this is a sort of general wisdom in practice, the relationship between strategy and business models creates a divide between communities and theories that is still searching for a conclusive position (Lanzolla et al., 2021; Massa et al., 2017). In fact, in the last 20 years, the business model concept has attracted increasing attention to explain a firm's competitive advantage in the strategic management literature, even if some influential strategy scholars have raised doubts and criticisms of the business model as a concept and of its distinctiveness from a traditional perspective in strategy research (Massa et al., 2017; Porter, 1985).

Our paper aims to add to the understanding of the relationship between strategy and business models in SMEs by bringing together the choices associated with a firm's strategy (namely, the source of competitive advantage and market scope) and its BMTs. In this respect, our findings about high-performing configurations add existing configurations to the role of the market scope and demonstrate that new original configurations can consistently lead to superior results. The findings about low-performing configurations highlight the inconsistency of configurations and low-cost complementarity, either alone or in combination with other BMTs. Moreover, by relying on the emerging use of configurational theorising in strategy (Furnari et al., 2021; Kulins et al., 2016; Leppänen et al., 2023), our analysis also shows that configurations leading to high and low performance do not mirror each other.

Appendix

Configuration HP1

Firm HP1 is a system integrator based in northeast Italy, dealing with design, construction and on-site implementations of customised industrial automation solutions, in particular, robotics that can be utilised in a variety of industries. In the development of solutions for clients, Firm HP1 combines both novelty and efficiency BMTs. As for novelty, it has not only developed internal competencies, due to its concurrent engineering attitudes and closeness with the chief operating officers of its clients, but it has also established partnerships with leading Swiss and German robotic firms. In this instance, business model novelty relies on its ability to involve partners in daily operations. This starts with the first contact with customers and the establishment of ad hoc cooperation agreements with its partners to co-design solutions for critical phases of execution. Hence, the firm differs from its competitors, which usually involve partners (e.g. suppliers) in the later stages of construction projects. As for efficiency, customers can benefit from reduced transaction costs by relying on a single point of responsibility for

delivering the entire construction project. The combination of efficiency and novelty BMTs is associated with a differentiation strategy leading to radically new ways of delivering products using robots and new industrial automation solutions for construction site work.

Configuration HP2

Firm HP2 operates in the business of traffic control and management, producing products and providing services aimed at accident reduction, correct information to road users and implementation of signalling plans. Firm HP2 manufactures a wide range of products: street lighting, road cones, street signage and traffic control equipment. Complementarity is achieved by offering related services to the municipalities that are buying the firm's products. For instance, in addition to the normal service of traffic violation detection, the firm offers customised administrative support (e.g. preparation of the acts to be served and the subsequent stages) to the local police for the management of the sanctioning process, in full compliance with current regulations at the local level and according to the requirements of the relevant authority. Other complementary services are the management of national traffic code violations by vehicles with foreign licence plates, document digitisation, collection of penalties through extrajudicial collection activities and, in cases of non-payment, compulsory procedures. The lock-in BMT emerges from the relationships between Firm HP2 and municipalities (its clients) that oversee traffic regulation on local roads. Due to the complementarity of products and services offered by Firm HP2, municipalities involve Firm HP2 in their administrative processes (delegating some relevant services), therefore nurturing reciprocal trust and increasing the costs of switching to other partners.

Configuration HP3

Firm HP3 designs, produces, and develops engines for constructors of racing cars and racing teams competing in Italian, European and world championships, both on track and in rallies. Firm HP3 operates in a niche of the larger automotive industry, providing customised solutions thanks to its team of engineers and project developers equipped with the latest generation of drawing, calculation and simulation hardware and software. Novelty is also nurtured through human resources; young talents are continuously scouted due to partnerships with top Italian universities and local technical schools. Firm HP3 has an assembly department in which designers prepare engines for final testing, which is run in a testing lab specifically conceived for high-power engines. Innovative technology and control software allow the firm to automatically plan engine approval activities. To exploit its advanced specialised technology and highly qualified human resources, Firm HP3 has also developed complementary services, such as a lab for controlling all engine elements, both for those directly built by Firm HP3 and those supplied by clients, and technical assistance during races.

Configuration HP4

Firm HP4 designs and produces treatment equipment, fully automatic and manual, for electroplating technology. The design and implementation of the equipment are defined according to the needs and specificities of the customer's production process. Electroplating technology (e.g. zinc planting, nickel planting, tin planting) is extensively used in different industries (e.g. mechanical, construction, furniture, jewellery), and in particular by small firms because, compared with other more advanced coating techniques (e.g. Teflon coatings), it is fast, easy to perform and relatively inexpensive. Unlike competitors investing in research and development aimed at pollution reduction and energy saving, Firm HP4 exploits the (potentially) large market of firms interested in buying standard treatment equipment (the life of which is usually more than 10 years) to quickly implement in its production processes without technical compatibility issues. Such clients are not necessarily interested in complementary services, such as after-sales assistance or accessories, because the automatic and manual equipment produced by Firm HP4 is a mature technology that does not usually represent a core phase of the client's production process. However, to pursue a differentiation strategy, HP4 performs maintenance and upgrades at existing plants.

Configuration LP1

Firm LP1 designs and manufactures oil hydraulic systems for mobile and industrial equipment. They offer complementary products suppling, hydraulic systems integrated with electronic control devices. As strategy is concerned, Firm LP1 does not target a specific market since it supplies both small and big firms, and it has achieved an international outreach developing partnerships with leading firms in many different industrial sectors. Set up by founders with two decades of experience in the hydraulic components sector, Firm LP1 characterizes itself as a firm revolving around flexibility: structural flexibility to deal with peaks in production, and organizational flexibility as every firm member involved in important projects can reschedule firm activities to effectively deal with emergencies. Efficiency is achieved through a workflow that is designed to guarantee a rapid response to the customer's needs and to cut errors to a minimum. Flexibility and efficiency allow containing costs and, hence, prices.

Configuration LP2

Firm LP2 manufactures rims and wheels for all types of cycling: from traditional to extreme and trendy riding disciplines. It produces aluminum and carbon fiber wheels and rims that can be used in plenty of cycling disciplines (e.g. road cycling, mountain biking, triathlon, touring, e-bike, handbike, track, gravel, time trial, cyclocross, fixie and urban cycling) therefore demonstrating a broad scope in targeting the market. Firm LP2 products are customizable and equipped with components,

providing a good level of complementarity to clients interested in buying high standards wheels and rims. Novelty is achieved through research on materials and employing advanced technology in product manufacturing. Finally, in order to provide a large number of clients with a cost-competitive products, Firm LP2 pursues efficiency through partnerships with firms producing technologies and management tools, adapting the industry standards to the needs of market and customers.

Configuration LP3

Firm LP3 manufactures weighing systems for industrial use. The firm was founded in 2008 by a group of experienced technical workers. Their aim is to offer an effective response to any need for manufacturing, sales, maintenance, service, verification, and calibration in the weighing field. The firm characterized itself for a broad offer of products (e.g., weighbridges, weighing platforms, electronic scales for suspended loads, electronic piece counters, load cells) and complementary services (e.g., selling of used products, technical support, installation and maintenance, services of calibration), aimed at addressing any customer need while containing the prices. Such broad offer allows Firm LP3 to pursue efficiency in its business model: indeed, it proposes itself as a comprehensive provider of weighing products and system hence the cost for clients to create relationships with multiple providers and distributors of products, which sometimes do not guarantee and efficient maintenance of the installed products. Due to its small size (9 people), Firm LP3 achieves novelty through partnerships: for instance, they collaborate with an Italian firm leader in the production and distribution of software for waste management to produce an advanced industrialized system for the management of deliveries at municipal waste collection centers.

Configuration LP4

Firm LP4 designs, manufactures, and maintain electrical systems for both residential, commercial and industrial environments. The firm develops products aimed at allowing any customer to get access to a complete range of products and service, such as intrusion detection, CCTV, fire protection, data transmission systems, air conditioning systems and home automation systems. It also provides installation and connection of photovoltaic panels. In this instance, Firm LP4 exploited both the increasing demand for home safety and the diffusion of home automation systems and electric appliances. Whereas operating in a niche market, Firm LP4 cannot exploit lock-in opportunities since all the products are based on standard technologies and they are easily replaceable with similar ones offered by different providers.

Configuration LP5

Firm LP5 was initially founded as a workshop performing mechanical processing for firms in the Turin area and then, over the years, it specialized in supporting firms operating in the automotive industry. Nowadays, Firm LP5, starting from customer's

drawings and needs, produces, and assembles electrical and electromechanical components for the automotive and transport, electronics, railways and military industries. Firm LP5 is specialized in producing wiring harnesses of electrical and electromechanical components for the automotive industry, with a focus on the Auto Parts Aftermarket. The experience matured over the years allows the firm to be flexible in expanding its range of processing to meet any client needs. Together with the main production activities, Firm LP5 offers a range of complementary services such as: co-engineering and prototyping, for supporting customers in the development of new products; warehouse management; in-bound and out-bound logistics; quality control of incoming goods from suppliers in case of third-party processing.

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Declarations

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