Faculty of Business and Economics
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The Role of Financial Resources as Antecedents for Strategic Changes

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Nederlands Abstract (Dutch Abstract)

"De rol van financiële middelen als antecedenten van strategische veranderingen"

Middelen zijn de bouwstenen van het gedrag van een onderneming. Daarom zijn ze belangrijke bepalende factoren voor de prestaties, groei en overleving van een bedrijf. Het is dus van vitaal belang om goed te begrijpen hoe bedrijfsmiddelen het gedrag van een onderneming beïnvloeden. Om te onderzoeken hoe de middelen van een onderneming haar gedrag beïnvloedt, richt dit proefschrift zich enerzijds op financiële middelen en anderzijds op strategische veranderingen.

Als middelen de bouwstenen zijn van het gedrag van een onderneming, dan zijn financiële middelen de ingrediënten van die bouwstenen. Ze kunnen vrij worden toegewezen aan elk doel en kunnen ook worden gebruikt om andere middelen te verwerven. Strategische veranderingen zijn acties die op het strategische niveau worden genomen, zoals export of acquisities, en een belangrijke rol spelen in de toekomstige prestatie van de onderneming. Strategische veranderingen geven bovendien inzicht in hoe het gedrag van een bedrijf wordt beïnvloed, omdat ze per definitie een wijziging zijn in het bestaande gedrag van het bedrijf. Dat bestaande gedrag is een weerspiegeling van alle eerdere managementbeslissingen, terwijl strategische veranderingen juist de meest recente managementbeslissingen reflecteren. Als zodanig stellen strategische veranderingen ons in staat om op een directe manier te onderzoeken hoe de financiële middelen van bedrijven het bedrijfsgedrag beïnvloeden. Het onderwerp van dit proefschrift is daarom de studie van de rol van financiële middelen van bedrijven als voorlopers voor strategische veranderingen.

In het inleidende hoofdstuk bieden we een overzicht van de verschillende aspecten van financiële middelen en de theoretische kaders die relevant zijn voor het onderwerp. We bespreken ook het concept van strategische veranderingen en hoe deze kunnen worden gemeten. Verder gaan we in op de gebruikte databronnen, met een focus op onze eigen verzamelde gegevens, en presenteren we de belangrijkste bevindingen van de individuele studies. Belangrijk op te merken is dat we een onderscheid maken tussen interne financiële middelen, toegang tot financiële middelen, en de rol van de leveranciers van die externe middelen (kapitaalverschaffers). Zo trachten we een zo volledig mogelijk beeld te schetsen van de rol van financiële middelen.

In hoofdstukken 2 & 3 bestuderen we hoe beperkte toegang tot externe financiering invloed heeft op kostenbesparende managementinnovaties. Onze resultaten, gestoeld op

analyses op de data uit de ‘Survey on the Access to Finance of Enterprises’ (SAFE) databank, tonen aan dat bedrijven strategische veranderingen introduceren als reactie op financieringsbeperkingen, wat de negatieve effecten op groei kan verminderen. Inderdaad, door het introduceren van kostenbesparende managementinnovaties in respons op financieringsbeperkingen, verbeteren deze ondernemingen hun groeiperspectieven.

Hoofdstuk 3 is een replicatiestudie van Hoofdstuk 2, waarbij we met zelfverzamelde gegevens van Belgische KMO’s de effecten op de winstevolutie bestuderen. We vinden dat kostenbesparende managementinnovaties ook een positief effect hebben op de winstgroei van bedrijven.

In Hoofdstuk 4 onderzoeken we de rol van financiële slack-middelen voor het vermogen van bedrijven om strategische veranderingen door te voeren. We vinden dat niet-familiebedrijven met hoge financiële slack en lage HR-slack de meeste strategische veranderingen doorvoeren. Bij familiebedrijven is dit echter het tegenovergestelde.

In Hoofdstuk 5 bestuderen we het vermogen van bedrijven om strategische veranderingen door te voeren in reactie op omgevingsbedreigingen en -kansen, met name tijdens de COVID-19-pandemie. We vinden dat een grotere financieringsdiversiteit resulteert in een groter vermogen om strategische veranderingen door te voeren.

Samenvattend biedt deze dissertatie sterke aanwijzingen dat financiële middelen een significante rol spelen in het vermogen van bedrijven om strategische veranderingen door te voeren, en dat externe kapitaalverschaffers hierin bovendien een belangrijke rol spelen.

Chapter 1

Introduction

Resources are the building blocks of firm behavior. Consequently, they are important determinants of firm performance, growth and survival. It is, therefore, of vital importance to have a good understanding of how firm resources affect firm behavior.

In order to study how a firm's resource profile affects firm behavior, we focus on financial resources, on the one hand, and strategic changes on the other. If resources are the building blocks of firm behavior, financial resources are the ingredients of those blocks. They can be freely allocated towards any purpose, and can also be used to acquire other resources. Strategic changes are actions that a firm has decided upon at the strategic level, such as exporting or acquisitions. They can be insightful to study firm behavior as they are a departure from the firm's current behavior. And while a firm's current behavior reflects the cumulation of all managerial decisions in the past, strategic changes only reflect the latest managerial decisions. As such, strategic changes allow us to study in a direct way how firms' financial resources affect their behavior. The goal of this dissertation, therefore, is to *improve our understanding of the effects of firms' financial resources on strategic changes.*

This introductory chapter discusses the notion of a firm's financial resources. We provide an overview of its different aspects and their respective relevant theoretical frameworks. Second, we also discuss the topic of strategic changes, and how they can be measured. Third, I discuss the data sources relied upon in this dissertation, with a focus on our self-collected data. Fourth, we present the main findings and contributions of the individual studies. Last, the structure of the dissertation is outlined.

1.1 Financial resources

Just as firm resources are divided in internal resources (i.e., resources already present in the firm) and external resources (i.e., resources that can be obtained from the firm's environment) (e.g., Andrevski & Ferrier, 2019; Choi et al., 2022), a firm's financial resources consist of the firm's internal financial resources and its (access to) external financial resources (Chetty & Wilson, 2003). In the following sections, we discuss these both, as well as their respective relevance for strategic changes.

1.1.1 Internal financial resources

When investigating the role of firms' internal resources for firm behavior, it is argued by Mishina et al. (2004: 1182) that "without considering current resource demands, it is unclear why the quantity of resources possessed by a firm should relate to organizational growth except in quite general ways". Instead, it is argued that studying those resources that are not needed to fulfill current resource demands – defined as slack resources – may be more insightful to study the role of resources on firm behavior (Paeleman et al., 2017). Financial resources present in the firm, but not consumed by its ongoing operations, are generally understood as financial slack (George, 2005). Hence, in order to understand the role of firms' internal financial resources on their strategic changes, we will study firms' financial slack resources.

Out of the different existing types of slack, such as HR slack (e.g., excess employees on the payroll (Mishina et al., 2004)), financial slack is the type most easily re-deployable one (Bourgeois & Singh, 1983). Therefore, the different theories that aim to describe the role of slack in general on firm behavior, all apply to financial slack. Hence, in order to understand the effect of financial slack on strategic changes, we discuss the most important theories with regards to slack resources (i.e., behavioural theory of the firm, agency theory, resource constraints theory and resource-based view of the firm) in the following section, and how they relate to the relation between financial slack and strategic changes.

1.1.1.1 Behavioral theory of the firm and financial slack

The foundations for the behavioral theory of the firm were laid by Simon (1957) and Cyert & March (1963). The theory is built around a political conception of firm goals, a bounded rationality conception of expectations, an adaptive conception of rules and aspirations, and a set of ideas about how the interactions among these factors affect decisions in a firm (Cyert & March, 1963). Simon (1957) was among the first to recognize the implications of human cognitive limits to rationality in firms. He argued that firms should be viewed as collections of individuals with their own goals, who all operate in a defined structure of authority.

The theory builds on Simon's notion of bounded rationality, meaning that managers are characterized by a limited ability to process information, which makes perfect decision-making impossible. As such, managers will practice "satisficing" behavior, or select the solution most satisfactory withing the range of solutions they can comprise of given their limited information processing capabilities. With respect to strategic decision-making, decisions are taken that are acceptable in the face of the firm's "coalition of goals". The goals of these firm members can change over time, while the importance the firm attaches to any of these goals may also shift

over time[1] (Pfeffer & Salancik, 1978). Changes in firms' goals, consequently, result in strategic changes.

Financial slack resources play an important role in this process. As every firm member has its own goals, financial slack allows the firm to allocate financial resources to the pursuit of these goals (Pfeffer & Salancik, 1978). This results in new projects and activities, which would not have been financed otherwise. Hence, according to the behavioral view of the firm, the presence of financial slack enables firms to finance these "search activities", which, consequently, generate strategic changes (Cyert & March, 1963; Levinthal & March, 1981).

1.1.1.2 Agency theory and financial slack

Agency theorists adhere to a more negative view about the role of financial slack on strategic changes. Although these scholars also start from considering firms as coalitions of competing interests, they categorize these competing interests in those of either the principal, or of the agents (Jensen & Meckling, 1976). The principal (e.g., firm owner) delegates the strategic-decision making authority to self-interested agents (e.g., firm managers). This may result in conflicts when the interests of the agents and the principals diverge. At the same time, information asymmetries make it possible for agents to engage in activities to pursue their own interests rather than acting in the best interests of the principals (Williamson, 1963, 1964).

According to agency theorists, this divergence increases when the firm has a lot of financial slack resources, as they allow managers to pursue to a greater extent their self-serving interests (Jensen, 1986). As such, it is argued that managers will use financial slack to bestow themselves with significant personal benefits, but also to lower firm risk (Latham & Braun, 2009; Tan & Peng, 2003). Therefore, financial slack is argued to reduce experimentation and risk-taking, ultimately leading to *fewer* strategic changes.

1.1.1.3 Resource constraints theory and financial slack

Resource constraints theorists argue that financial slack is associated with reduced experimentation and reduced incentive intensity, which impair a firm's ability to perceive and act upon opportunities (Mosakowski, 2002). Moreover, they argue that the availability of financial slack resources makes managers overconfident and overly optimistic (George, 2005),

[1] Pfeffer & Salancik (1978) gave the example of a how firm members attach more importance to their safety officer after a work incident occurs, while their own goals also shift towards safety. This makes the safety officer, temporarily, more powerful within the organization, and steers strategic-decision towards increasing safety, which is now a shared firm goal.

reducing their tendency to respond to environmental changes. Hence, they, too, propose a negative effect of slack resources on the extent to which firms undertake strategic changes. In their view, it are the firms with fewer resources who will leverage their resources more efficiently (Baker & Nelson, 2005; Mosakowski, 2002; Starr & Macmillan, 1990), finding ways to stretch and leverage them (Baker et al., 2000; George, 2005; Mosakowski, 2002). This process results in greater creativity, and, consequently, in the potential discovery of strategic opportunities.

1.1.1.4 Resource-based view of the firm and financial slack

The last theoretical framework discussed here is the resource-based view (RBV) of the firm. The RBV (e.g., Barney, 1986, 1991a, 2001; Wernerfelt, 1984) is considered as one of the most widely accepted theories of strategic management (Powell, 2001; Priem and Butler, 2001). As such, we include the RBV in this introduction.

Barney (1986, 1991) is widely recognized as a seminal contributor to the formalization of the Resource-Based View (RBV) as a theoretical framework, a claim substantiated by Newbert (2007). According to the RBV, resources may be tangible or intangible, may include the firm's management skills, its organizational processes and routines, or even the information and knowledge it controls (Barney et al., 2001). In order to achieve and maintain a sustained competitive advantage through its resources, however, Barney posits that a resources must meet four critical criteria: Value, Rarity, Inimitability, and Non-Substitutability (VRIN). Resources are deemed valuable if they enhance organizational efficiency and effectiveness. However, the attainment of a sustained competitive advantage is contingent upon these valuable resources also being rare; otherwise, they merely confer competitive parity. Furthermore, these valuable and rare resources can culminate in a sustained competitive advantage only if they are inimitable. Lastly, for these valuable, rare, and inimitable resources to serve as a foundation for sustained competitive advantage, they must be non-substitutable, lacking strategically equivalent alternatives.

Financial slack resources are seldom classified as VRIN resources, as they are considered to be generic resources (Voss et al., 2008). Therefore, the literature building on the RBV has largely focused on which resources and their characteristics result in sustained competitive advantages, while less attention has been devoted to (financial) slack resources (Paeleman, 2015). Hence, for long, the RBV was not very relevant to financial slack. This changed, however, more recently. Indeed, building on the notion of the RBV that firms are bundles of resources (Barney, 1991a; Mosakowski, 2002; Wernerfelt, 1984), it has recently

been argued that studying the combination of different resources may result in additional insights into how resources affect firm behavior and performance (Gruber et al., 2010; Molloy et al., 2011). Doing so should provide more insight into the under-studied perspective of "how" resources are used (Priem & Butler, 2001).

As such, scholars have begun to investigate how firms may combine financial slack resources with HR slack to achieve superior performance (Paeleman & Vanacker, 2015; Vanacket et al., 2017). This, as relative to financial resources, human resources are often considered important sources of competitive advantages (e.g., Ireland et al., 2003), while financial slack resources can be allocated, and *used*, freely. Therefore, in this dissertation, we build upon these recent insights and as we study the role of financial slack on strategic changes, we study it as a bundle with HR slack.

1.1.2 Access to external financing

Firms need not always have large amounts of cash on hand in order to be able to finance large investment outlays or strategic changes. Instead, they may obtain external financing from their external capital providers when an investment opportunity arises. External capital providers constitute, among others, of banks, venture capitalists, private individuals, leasing companies, factoring companies, suppliers or customers, partners or working shareholders, and governmental bodies (Cosh et al., 2009). Large companies can also obtain financing through, among others, an initial public offering, seasoned equity offerings, or by issuing bonds.

A firm's access to external financing, therefore, is an important determinant of its ability to finance strategic opportunities (Campello et al., 2010; Cingano et al., 2016). Yet, obtaining financing can be difficult. Especially among SMEs, many face difficulties accessing both bank and alternative financing and can be defined as having constrained access to external financing (Bańkowska et al., 2020; Kraemer-Eis et al., 2021). Given its important effect on firm behavior, we study the effect of having constrained access to external financing on strategic changes in this dissertation. In the following sections, we discuss why constrained access to external financing exists, how firms aim to mitigate this, and how both the problem (i.e., constrained access) and its solutions (i.e., control mechanisms) impact strategic changes. Note that these concepts have their origin in the agency theory, which we explained above, as information asymmetry is argued to be the underlying cause of a constrained access to external financing and its potential remedies. This, as Binks et al. (1992) argued, because the provision of financing to a firm can be regarded as a simple contract between two parties in which the external financing provider is the principal, and the firm the agent. The principal requires the

firm to undertake an investment project, and generate a return on its behalf. Crucial in this relation, is that the external financing provider is sure that the firm is able to successfully undertake this project, and that, once the financing has been extended, the firm acts as agreed beforehand. However, external capital providers do not have perfect information about the firm and its abilities, and can never be fully sure that the financing will be allocated as initially intended. These issues, respectively coined "adverse selection" and "moral hazard", result in constrained access to external financing and stringent terms and conditions in financing agreements.

1.1.2.1 Adverse selection

An external capital provider cannot observe *ex ante* all relevant information about the firm needed to enter into a financing agreement. Information about the attributes of the firm, the abilities of its members, and the characteristics of the investment can be collected, although this may be time-consuming and expensive. External capital providers may also encounter difficulties in processing this information. This is especially true for innovative firms with firm-specific knowledge that most capital providers find difficult to understand (Santos & Cincera, 2022). It is also more difficult for small firms (Beck and Demirguc-Kunt, 2006), as the potential gain on small financing agreement with such firm does not outweigh the relatively fixed costs of collecting and processing the information for the external capital provider. Moreover, smaller firms typically have limited historical financial information available (Berger and Udell, 1998).

Therefore, as capital providers may not distinguish good firms from bad ones because of information asymmetries, they risk providing financing to "lemons" (Akerlof, 1970). This well-known principle, in the context of capital structure theory, is based on the idea that the form of finance offered by an external capital provider attracts the worst possible type of firm for that form of finance (for an excellent review, see Cumming, 2006).

As such, common equity attracts firms with low expected returns (DeMeza & Webb, 1987, 1992). This, as firms with low expected returns have less opportunity costs associated with giving up ownership interests to external capital providers relative to firms with higher expected returns. As such, investors that offer common equity financing to firms face greater adverse selection problems in terms of attracting firms with lower expected average returns.

At the same time, providers of credit and preferred equity financing attract firms with high variability in returns ("nuts") (Stiglitz & Weiss, 1981). Firms that obtain credit do not give up any ownership interest and can, therefore, capture the full upside potential associated

with an improvement in the quality of the firm (i.e., above and beyond an increase in the probability in being paid back the interest and principal on the debt contract). Firms with high expected variability of returns have higher opportunity costs associated with giving up larger ownership interests. In the event that the upper-end of the firm's potential outcomes would materialize (i.e., a risky venture is successful) the firm financed with debt captures 100% of the upside potential success. On the other hand, if the lower-end of the firm's potential outcomes would materialize (i.e., a risky venture fails), then the entrepreneur financed with debt has not lost to the same degree as the investor that has not been repaid. Therefore, external capital providers that extend credit, face a greater adverse selection problem in terms of attracting firms with higher expected variability in returns.

Finally, providers of mezzanine financing face greater risk of attracting firms with low variability of returns (Brennan & Kraus, 1987).

In response, external financing providers change the hurdle rates they ask (e.g., interest rate) in order to minimize adverse selection problems (Stiglitz & Weiss, 1981). Indeed, if they would increase their required hurdle rate, they would only attract those firms who are willing to pay a high hurdle rate because they perceive their probability of repaying the obtained financing to be low (Stiglitz & Weiss, 1981). At the same time, if they have too low a hurdle rate, they do not maximize profitability. In consequence, the market price (i.e., hurdle rate) is not completely determined by supply and demand. This results in an *equilibrium price*, in which supply is not equal to demand (Stiglitz & Weiss, 1981). More specifically, supply will be greater than demand, as firms cannot offer to pay a higher price (i.e., hurdle rate), as the external capital provider, then, refuses them as they pose too high a risk of adverse selection (Stiglitz & Weiss, 1981). In equilibrium, this results in unmet demand for financing, and, thus, firms with constrained access to external financing (Bester & Hellwig, 1987).

There exist, however, solutions to this problem. Perhaps the most important one, at least with regards to credit, is collateral: by offering collateral, low-risk firms (who otherwise got priced out of the market) may signal their creditworthiness to lenders (Bester, 1987). Firms without sufficient collateralizable assets may offer personal collateral (Mac an Bhaird & Lucey, 2010) or get third-party certification instead (Kraemer-Eis and Passaris, 2015). These solutions signal to external capital providers that the firm is not a "nut". A firm can also signal not to be a "lemon" (i.e., signaling that it has high expected returns), by, for example, getting into endorsement relationships (Gulati & Higgins, 2003), institute particular corporate governance characteristics (Sanders & Boivie, 2004) or increase heterogeneity in the top-management team's functional and educational background (Zimmerman, 2008).

1.1.2.2 Moral hazard

Moral hazard refers to the risk that, after receiving financing, the firm does not perform in a manner consistent with the financing agreement. Indeed, as the allocation of the received funds is unobservable by the external capital provider, the firm may use the received financing (partially) for other (i.e., private) ends than those initially agreed upon.

This can be resolved by installing monitoring procedures and mechanisms that specify how the firm should behave after obtaining the financing (Stiglitz & Weiss, 1981). It can also be resolved through asking collateral, which, then, has as an incentive function (i.e., rather than the signaling function when it is used as a solution for adverse selection) (Bester, 1987; Steijvers & Voordeckers, 2009), or through debt covenants (Niskanen and Niskanen, 2004). Other types of external capital providers may also reduce moral hazard risks, for example by including late payment penalties in trade credit contracts (Klapper et al., 2012; Paul & Boden, 2011), or including clawback provisions upon extending a government grant (e.g., Jentsch, 2021), while providers of equity financing may demand board seats (Wynant, Manigart & Collewaert, 2023).

1.1.2.3 Implications for strategic changes

The problems of adverse selection and moral hazard have important implications for firms' strategic changes. On the one hand, they result in firms having a constrained access to external financing and its implications for strategic changes. One the other hand, however, they result in mechanisms aimed at mitigating the problems of adverse selection and moral hazard (e.g., control mechanisms, monitoring mechanisms, signaling activities), which also result in strategic changes.

More specifically, constrained access to external financing results in an inability to introduce strategic changes: firms with constrained access to external financing are less able to, among others, innovate (Czarnitzki and Hottenrott, 2011; Hottenrott and Peters, 2012), invest in human resources (Bentolila et al., 2018; Siemer, 2019), or internationalize (Pietrovito and Pozzolo, 2021). Control mechanisms, on the other hand, also result in a lesser ability to introduce strategic changes, as firms' coordination flexibility is reduced (Sanchez, 1995; 1997).

However, as many firms have to deal with (at least to some extents) a constrained access to external financing and limiting control mechanisms, it is crucial that we study *how* firms can deal with these issues and remain able to introduce strategic changes. It is therefore surprising that only few studies have addressed this issue (Williamson and Yang, 2021). It is for this

reason that this dissertation will focus on *how firms can cope with their external capital providers so as to increase their ability to introduce strategic changes*, next to our study of how firms' internal financial resources (i.e., financial slack) relates to this ability.

1.2 Strategic changes

As we seek to better understand how firms' financial resources affect their ability to introduce strategic changes, a good understanding of the topic of strategic changes is needed. Strategic changes are the modifications occurring in a singular, specific dimension of a firm's strategy. For instance, researchers have examined strategic changes in terms of, among others, a firm's level of product diversification (Wiersema & Bantel, 1992; Kraatz & Zajac, 2001), geographic diversification (Sanders & Carpenter, 1998), or investment intensity in research and development (Hoskisson & Hitt, 1988; Lungeanu, Stern & Zajac, 2016). Strategic changes are part of strategic change. Yet, introducing one strategic change action does not constitute a strategic change, as a change in strategy involves multiple simultaneous strategic changes (Dyck, 1997), which are also supported by alterations in firms' organizational structure, processes, and incentives (Herrmann & Nadkarni, 2014).

1.2.1 Strategic change

Given that strategic changes are a crucial part of a firm's strategic change, it is important to understand strategic change. We, therefore, discuss the topic of strategic change, and closely linked topics such as strategic renewal, in the following sections.

1.2.1.1 Defining Strategic change

Strategic change is defined as the comprehensive transformation in a firm's resource allocation pattern across multiple strategic dimensions (Carpenter, 2000; Finkelstein & Hambrick, 1990; Zhang, 2006). This conceptualization of strategic change stems from the notion of strategy as "a pattern in a stream of decisions… where a decision is usually a commitment of resources" (Mintzberg, 1978: p. 935). This provides further evidence to the importance of studying firms' (financial) resources in order to understand strategic change and strategic change actions. Indeed, one of the few current key research questions regarding strategic change, relates to the role of firms' resources in enabling or constraining strategic change (Müller & Kunisch, 2018).

1.2.1.2 Perspectives on strategic change and their implications for the role of firms' resources

Three different perspectives have been developed with regards to the study of strategic change (Müller & Kunisch, 2018). First, the *deterministic perspective*. This perspective was mostly present in the early work on strategic change. Its basic premise is that organizations are inert (Hannan & Freeman, 1977, 1984). Studies subscribing to the deterministic perspective (e.g., Boeker, 1997), study factors that may allow the organization to overcome some of its inertia, and change its strategy. In essence, these factors are institutional and environmental changes that require the firm to 'respond' by changing its strategy (e.g. Aldrich 1979; Hannan & Freeman 1977). As such, the role of firm members is reduced to reacting to exogenous changes in the firm's environment. With regards to its (financial) resources, firms are believed to possess few resources, and strategic change depends to an important extent on firms' access to external (financial) resources (Aldrich and Pfeffer 1976; Pfeffer and Salancik 1978).

The second perspective focuses strongly on firm-level factors that may stimulate strategic change, such as managerial perceptions (e.g., Strandholm et al., 2004). This perspective is called the *voluntaristic perspective*, and was developed in response to the "anti-management theories" (e.g., Donaldson, 1995) following the deterministic perspective. Its fundamental premise is that managers have an important effect on firm behavior (Bourgeois, 1984). It suggests that strategic change results from the decisions and actions of managers, coined managerial intentionality (Child, 1972; Miles & Snow 1994; Miles et al. 1978), and that firms can respond in multiple ways to environmental changes. Moreover, managers not only change the firm's strategy in response to external changes, but may also proactively introduce changes so as to achieve a fit with the firm's environment. Last, managers do not just change the firm's strategy, it is believed that they can also shape the firm's environment to the firm's advantage (e.g., Child 1972). Therefore, with respect to the firm's financial resources, the voluntaristic perspective would stress the importance of managing a firm's network of external capital providers for strategic changes.

Finally, studies subscribing to the *dialectical perspective* acknowledge that both managerial choice and environmental determinism shape strategic change, thereby bridging the other two fundamentally opposing perspectives (e.g., Barker & Duhaime, 1997). The dialectical perspective acknowledges that while firms are populated by individuals who act based on their own perceptions and who can exert some form of managerial choice (Astley & Van de Ven, 1983), the outcomes of their choices are determined, at least to some extent, by the firm's environment. With regards to firms' (financial) resources, the dialectical perspective stresses the importance of firms' (financial) slack resources for strategic changes (e.g., Barker & Duhaime, 1997; Kraatz & Zajac, 2001). Slack resources allow managers to pursue strategic

changes in response to environmental changes, but can also be used to buffer the firm from those same environmental changes (Kraatz & Zajac, 2001).

1.2.1.3 Strategic renewal

The field perhaps most closely related to the topic of strategic change, is the more recent topic of 'strategic renewal' (Müller & Kunisch, 2018). While strategic change is considered as a far-reaching and intensive process, strategic renewal typically applies an 'evolutionary' perspective to studies of strategic redirection (e.g. Burgelman 1991, 2002; Floyd and Lane 2000; Huff et al. 1992). For example, Agarwal and Helfat (2009: 282) state that "strategic renewal includes the process, content, and outcome of *refreshment* or *replacement* of attributes of an organization that have the potential to substantially affect its long-term prospects." As such, the study of strategic renewal is often related to studying continuous innovation (Klammer et al., 2017), and, thus, more related to the study of product innovation and business development (e.g., Kim and Pennings 2009; Shamsie et al. 2009). As we are interested in a more broad view of firm behavior, we have focused on firms' strategic changes. In the following section, we discuss the several measures we adopt.

1.2.2 Measuring strategic changes

Again, given that strategic changes are a crucial part of a firm's strategic change, we rely on the study and measurement of strategic change, to develop measures of strategic changes.

Strategic changes have been measured by prior scholars in two ways. First, by following a single-dimensional perspective, measuring one single strategic change action introduced by the firm. For example, changes in the courses offered by universities (Kraatz & Zajac, 2001), or changes in a firm's client mix (Bentley & Kehoe, 2020). Second, by following a multi-dimensional view of strategic change and measuring several strategic changes actions simultaneously. This allowed scholars to evaluate changes along several components of firm strategy, and test whether, consequently, changed its strategy.

Given the relevance of both types of measurements, we will rely on both the single-dimensional perspective and multi-dimensional perspective of strategic change in order to construct measures for strategic changes.

1.2.2.1 Single-dimensional perspective and measuring strategic changes

The single-dimensional perspective on strategic change, measures just one strategic change action, which its proponents argue, captures changes in the firm's strategy.

This reasoning, however, has drawn criticism as it is argued that strategic change comprises of more than a change along just one dimension of firm strategy (Dyck, 1997). As such, these measurements are argued to be no more, but also no less, than measures of a change in one single strategic dimension, or a strategic change action. While such measure may not provide us with a comprehensive overview of a firm's ability to change its strategy, it does allow for the measurement of specific firm behavior.

This may be of particular interest when measuring firms' response to constrained access to external financing. Indeed, as discussed in section 1.1.2.3, it is well-known that a constrained access to external financing results in a reduced ability to introduce strategic changes (e.g., introducing new products or entering new international markets). However, the question that is now posed, is which strategic change action can improve performance and long-term survival chances when firms cope with constrained access to external financing (Williamson & Yang, 2021). As such, an answer to this research question can be found by studying the effect of a specific type of strategic change action, hence why we depart from the single-dimensional perspective on measuring strategic change.

More specifically, as explained in more detail in Chapter 2 (and its replications study in Chapter 3), we study the effect of cost-saving management innovations in the relation between constrained access to external financing and firm growth. Management innovations are strategic change actions that may comprise of changes to the firm's structure, administrative systems and management practices (Damanpour, 2014). While management innovations may differ in their goals (Wei et al., 2020), some are specifically introduced with the goal of increasing efficiency (Westfall et al., 1997. These can be defined as cost-saving management innovations. In other words, cost-saving management innovations are changes in the firm's structure, administrative systems and management practices that are concurrently made in order to increase the firm's efficiency and reduce its costs. As such, we survey firms' CEOs whether the firm has introduced a cost-saving management innovations, in response to having a constrained access to external financing.

1.2.2.2 Multi-dimensional perspective and measuring strategic changes

Measuring strategic change in line with the multi-dimensional perspective, measures several strategic changes actions simultaneously. A firm is argued to have changed its strategy when it has introduced strategic changes along several components of its strategy.

A distinction can be made between two different types of measures. First, some scholars see strategic change as a *discontinuous process* and argue that periods of strategic change are

followed-up by periods of strategic continuity, during which the firm can exploit its new strategy. A measurement that follows this line of reasoning, is the one of Zúñiga-Vicente & Vicente-Lorente (2007). The authors document strategic change in banks by studying changes in banks' product offerings, customers served, and scope commitments. After measuring the changes in each of these three dimensions, they collapse these three dimensions into one single variable that indicates whether the firm is in a period of strategic homogeneity or strategic change. *We do not rely on, nor build on, these types of measures,* as they are intended to determine whether a firm is currently in a state of strategic change – but do not measure the number of strategic changes a firm has introduced.

On the other hand, other scholars see strategic change as a *continuous process,* just as the firm's environment. Moreover, these scholars do not refer to the opposite of strategic change as strategic continuity, but as "strategic decline" (Klammer, Gueldenberg, Kraus, & O'Dwyer, 2017, p. 740). Therefore, along this line, scholars are interested in measuring the firm's extent of strategic change, rather than whether the firm is engaged in strategic change. Among the types of measures used by scholars adhering to the continuous process perspective, a distinct type of measurement exists that may be particularly helpful to this dissertation: thee measure of strategic change through a composite index of several strategic change actions. A composite index counts and sums the number of different strategic change actions a firm has undertaken.

Relying on composite indices developed for measuring strategic change is potentially very insightful for this dissertation, as they allow us to study how many different strategic change actions a firm has introduced. This reflects a firms' ability to introduce strategic changes, the topic of this dissertation. Hence, we will rely on composite indices in this dissertation to study the *number of* strategic changes a firms has undertaken.

At the same time, a further distinction may be necessary. Recall that the three perspectives on strategic change differed in their view on the relation between environmental change and strategic change. While the deterministic perspective argued that strategic change is a function of environmental change, the voluntaristic perspective minimized the role of a firm's environment (and the dialectical perspective bridged these two perspectives). Therefore, in line with the discrepancy between these perspectives, we may need to study firms' ability to introduce strategic changes both irrespective of environmental changes as well as in response to environmental changes.

Therefore, in Chapter 4, we use the composite measure of Brunninge et al. (2007) that measures strategic changes along 13 different strategic dimensions, which encompass changes

to the internal organization of the firm, its markets and products, retrenchment actions, and proactive actions. The measure, then, sums these actions so as to get a score ranging from 0 to 13. The greater the score, the greater the number of strategic changes the firm has introduced. Unlike our measure used in Chapters 2 & 3, the measure does not indicate whether the firm has introduced any particular strategic change action. It also does not indicate the extent to which the firm has introduced these strategic changes in response to environmental changes.

Therefore, in Chapter 5, as we are interested to measure the ability of SMEs to introduce strategic changes in response to environmental opportunities and threats, we develop two new measures that indicate the extent to which the firm has introduced opportunity-oriented strategic changes or threat-oriented strategic changes. We do so by relying on the composite index developed by Herrmann & Nadkarni (2014). Based on their measure, our measure of opportunity-oriented strategic changes counts how many of the following 5 strategic changes the firm has introduced during 2020: (i) started exporting to one or more new international markets, (ii) added new product lines or segments, (iii) completed new mergers and acquisitions, (iv) bought new properties, plants, and equipment, (v) increased R&D expenditures. Each of these five strategic changes is focused on firm expansion, which is typically the response to an opportunity. At the same time, our measure of threat-oriented strategic changes counts how many of the following 4 strategic changes the firm has introduced during 2020: (i) exited from one or more international markets, (ii) eliminated product lines or segments, (iii) sold properties, plants, and equipment, (iv) decreased R&D expenditures. Each of these four strategic changes is focused on firm retreat, often the response to environmental threats. As such, using both measures in the same study should allow us to study firms' ability to respond to both environmental opportunities and threats.

1.3 Context

As argued above, strategic changes do not happen in a vacuum, but, rather, in an environmental context. Indeed, managerial decision-making and strategic changes depend on environmental changes, and on the particular position of the firm within its environmental context. Studies adhering to a dialectical perspective, show that environmental changes (e.g., Zúñiga-Vicente & Vicente-Lorente, 2006) or increased market volatility (e.g., Karaevli & Zajac, 2013) stimulate strategic changes, while factors such as environmental munificence result to fewer strategic changes (Zajac & Kraatz, 1993). At the same time, the environmental context may also moderate effects of firm-level variables on strategic changes. It is, therefore, of importance

to delineate the environment in which we will study strategic changes. This environment exists of SMEs, family-owned firms, and the COVID-19 pandemic.

1.3.1 SMEs

In this dissertation, we focus on privately held, for-profit, independent SMEs, defined as firms with less than 250 employees and a maximum revenue of 50 million euros (European Commission, 2020). In Chapters 3,4, and 5 we also include the lower-bound limit of 10 employees as a criterium.

We focus on SMEs, as they generally have less influence over their external environment compared to larger firms, which makes their ability to adapt to the environment crucial for survival and growth (Miklian & Hoelscher, 2022). Moreover, given that SMEs are more often laggards in the adoption of strategic changes, it are environmental pressures then 'push' these firms towards the adoption of new technologies and innovations (Sawang & Unsworth, 2011). Last, SMEs are more prone to having a constrained access to external financing, which also makes studying its effect on strategic changes more insightful in this population.

1.3.2 Family-owned firms

In each study, we will take family ownership into account as a context variable. More, in Chapter 4, we specifically study the role of family ownership as a moderating variable in the relation between (financial) slack resources and strategic changes.

While SMEs are more responsive to changes in the environmental context, family-owned firms follow a different strategic logic in which the interplay of family interests with economic interests is the primary driver of strategic behavior and resource allocation (Fang et al., 2021; Gómez-Mejía et al., 2007). As such, family-owned firms are characterized by a long-term orientation (Gómez-Mejía et al., 2007), in which they preserve family values and the legacy of the business over short-term gains. This makes them more willing to endure a decline in performance, unless survival is threatened (Gómez-Mejía et al., 2018; Xu et al., 2020). This makes family-owned firms a potentially insightful group to test the effects of slack resources on strategic changes.

Besides, family-owned are also a very relevant group of firms to study, as family ownership is the most prevalent form of ownership all over the world. Or, as Villalonga & Amit (2020: 241) formulated in their recent review: "family firms matter very much, and to very many people".

1.3.3 Covid-19 pandemic

In Chapter 5, we surveyed 525 Belgian SMEs during September of 2020, after the first wave of COVID-19 and the accompanied lockdowns had stricken global economies. It is argued that this pandemic can be seen as a metaphorical black swan event, having a surprising, unpredictable event of great significance and severe consequences that dramatically changes the political and economic environment (Winston, 2020). Such drastic environmental changes, resulted in both unexpected environmental opportunities and threats for firms (e.g., Kuckertz et al., 2020; Laverty et al., 2020). As such, studying firms' strategic changes during COVID-19, allowed us to test the role of financial resources on firms' ability to respond to unexpected environmental opportunities and threats.

Note that we are also interested in firms' ability to introduce strategic changes, regardless of environmental changes. Therefore, in Chapters 2, 3 & 4, we study strategic changes in periods that are not particularly characterized by environmental shocks relevant to the firms in our sample.

1.4 Data sources of the individual studies

The four studies in this dissertation are based on data from two different surveys, one of which is self-administered and self-collected. The other survey was run jointly by the ECB and the European Commission, who gave us access to the dataset. In the following subsections, we provide further details about each dataset, and their respective (dis)advantages.

1.4.1 Study 1: "Financing constraints and SME growth: the suppression effect of cost-saving management innovations"

The data used in this study originates from the "Survey on the Access to Finance of Enterprises" (SAFE). It is a semi-annual survey, run jointly by the ECB and the European Commission, on the financial conditions faced by non-financial firms in all euro area countries. The sample is randomly drawn from the Dun & Bradstreet database and stratified by firm-size class, industry, and country. Our focus is on the privately held, for-profit, independent SMEs. The SAFE surveys a top-level executive, usually a CFO or CEO, or the owner of a smaller enterprise. The response rate is around 10%, and no signs of non-response bias have been found (for more details we refer to Bańkowska et al., 2015). The questionnaire is administered in the local language.

There are several advantages to the dataset. The major one is that it offers granular data on both financing conditions and strategic-decision making of firms. The survey nature of the data allowed us to identify firms with a constrained access to external finance through measuring CEOs' perception of their firms' access to external financing. Firms were defined as having constrained access to external financing if the respondent perceived the firm's access to external financing as a more important problem than each of the other five items surveyed (e.g., finding customers). We believe that our perception-based measure is far more relevant to strategic changes than alternative measures of constrained access to external finance, which are often based on balance-sheet data. Indeed, strategic actions frequently emerge from managers' cognitive processes and reflections (Kahneman, 2011; Markowska et al., 2019), which depend on their perceptions (Edelman and Yli-Renko, 2010). In other words, a firm may have constrained access to external financing based on its financial statements, but it is unlikely that a CEO would undertake any strategic changes as long as he or she does not does not perceive the access to external financing as constrained. Strategic decisions, such as innovations or reorganizations, are also surveyed, which allowed us to study the effect of access to external financing on strategic changes. Another advantage is the survey's pan-European geographical distribution, but also its longitudinal nature - although only a relatively small portion of firms are re-surveyed. We make use of this rotating panel structure by matching the responses over time of each firm. This matching procedure follows a specific timeline that accounts for the duration that is related to the survey questions of interest (e.g., "over the past 12 months,…", or "in the last 3 years, …"). As such, we were able to construct a dataset of 2,973 observations of firms who responded to 3 different surveys, in the correct order. This temporal and geographic distribution reduces the effect of unobserved biases (i.e., culture, financial crises) that may temporarily or locally drive results.

The main disadvantage of the data is that the firms surveyed are anonymized. Hence, it is not possible to couple the survey responses to firms' financial statements. As a result, many variables that are normally included as continuous variables (e.g., size, age), are now included as less-precise survey question categories (e.g., younger than 2 years, between 2 and 5 years old, …). It also limits the extent to which we could estimate long-term effects, by tracking the firms' financial statements over time.

It should be noted that, as a robustness analysis, we performed the same analyses on another dataset. We collected this data ourselves, as described in section 1.4.2 below.

1.4.2 Study 2: Replication study "Financing constraints and SME growth: the suppression effect of cost-saving management innovations"

Please refer to the next section, which offers an extensive discussion of the dataset on which this replication study is based.

The only difference between the dataset discussed in 1.4.3 and the one used in Study 2, is that Study 2 filters out firms that stated in the survey that they were a daughter company. This is in line with the original study on which the replication study is based.

1.4.3 Study 3: "Bundles of slack and SMEs' strategic changes: the role of family ownership"

We collected the data for this study ourselves, by surveying a sample of 5,706 Belgian private SMEs during October 2020. A total of 654 SMEs filled out the necessary questions (e.g., the extent to which the firm changed its strategy during 2019), resulting in a response rate of 11.5%. We contacted members of the top-management team at each firm through electronic mail, sending out 2 reminders over a 3-week span. Given that we surveyed small firms, members of the top-management team should all be aware of the strategic decisions made in the firm. T-tests did not reveal any significant differences between early- and late-respondents for the variables of interest, indicating that nonresponse bias should be limited. We also tested the sample on representation bias, by comparing the characteristics of the firms in our sample to the characteristics of all 28,689 Belgian SMEs at year-end 2018. The comparison of these characteristics is portrayed in Table 1.1.

As is clear from the table, the sample has a significantly different composition than the Belgian landscape of SMEs. Firms in our sample are, on average, almost 4 years older and have 13 employees more than the average Belgian SME. They also have larger. They also appear to be more efficient, as both their employee costs and cash holdings relative to total assets are lower than the average of the Belgian SMEs. On the other hand, they hold relatively larger stocks and receivables relative to total assets. The firms in our sample perform, on average, better than the overall population: the average EBITDA to total assets ratio is almost 3 percentage points higher, which is economically very significant. At the same time, 57% of the firms in the sample are a daughter firm (i.e., another operating firm holds at least 50.01% of the shares), which is far higher than the Belgian average (41%). With regards to geographic distribution, the sample also differs from the Belgian population: Flemish SMEs are significantly over-represented, reducing both the relative weighting of SMEs from Brussels and from Wallonia.

Table 1.1: Comparison of sample to population of Belgian SMEs

	All Belgian SMEs		Sample		Difference of means
	Average	Median	Average	Median	
Firm Age	25.32	23.00	29.13	28.00	3.81***
Total Assets (thousands)	5,255	2480	8,702	5284	3446***
Employees	30.68	19.00	43.76	27.00	13.08***
Employee costs to total assets	0.729	0.432	0.462	0.344	-0.267***
Cash & equivalents to total assets	0.197	0.119	0.128	0.078	-0.070***
Stock & receivables to total assets	0.456	0.450	0.559	0.571	0.103***
Intangible assets to total assets	0.018	0.000	0.021	0.000	0.003
EBITDA to total assets	0.112	0.103	0.139	0.121	0.029***
Leverage rate	0.692	0.675	0.658	0.681	-0.034***
Daughter company	0.410	0.000	0.570	1.000	0.160***
Limited liability	0.392	0.000	0.339	0.000	-0.052***
Brussels HQ	0.126	0.000	0.043	0.000	-0.083***
Flanders HQ	0.612	1.000	0.817	1.000	0.205***
Wallonia HQ	0.262	0.000	0.141	0.000	-0.122***

SMEs can be further subdivided in small-sized SMEs (10-49 FTEs and total assets below 10 million euros) and medium-sized SMEs (50-249 FTEs and total assets below 43 million euros). In Belgium, there were 22,263 small SMEs and 6,426 medium-sized SMEs. In our sample, the split was respectively 397 – 257, showing a relative overrepresentation of medium-sized SMEs. Therefore, given this significant size difference, it could be insightful to compare both the small and medium SMEs in our sample with their respective Belgian counterparts. This allows for a more thorough comparison of the sample with the overall population, as the differences in characteristics are less likely to be caused by a difference in size (e.g., the firms in our sample are older than the overall population, but that may be the case because there are relatively more medium-sized SMEs in our sample). The comparisons of the small- and medium-sized SMEs in the sample with, respectively, the populations of small- and medium-sized SMEs are shown in tables 1.2 and 1.3.

Table 1.2: Comparison of sample of small-sized SMEs to population of small-sized Belgian SMEs

	All Belgian SMEs		Sample		Difference of means
	Average	Median	Average	Median	
Firm Age	23.89	22.00	26.77	15.00	2.89***
Total Assets (thousands)	2552	1825	3563	1774	1011***
Employees	19.06	16.00	22.21	14.00	3.14***
Employee costs to total assets	0.766	0.467	0.492	0.249	-0.274***
Cash & equivalents to total assets	0.204	0.129	0.137	0.035	-0.067***
Stock & receivables to total assets	0.454	0.447	0.554	0.380	0.100***
Intangible assets to total assets	0.018	0.000	0.023	0.000	0.005***
EBITDA to total assets	0.018	0.000	0.023	0.000	0.004
Leverage rate	0.118	0.111	0.162	0.078	0.044***
Daughter company	0.360	0.000	0.491	0.000	0.132***
Limited liability	0.453	0.000	0.469	0.000	0.016
Brussels HQ	0.124	0.000	0.043	0.000	-0.081***
Flanders HQ	0.603	1.000	0.836	1.000	0.233***
Wallonia HQ	0.273	0.000	0.121	0.000	-0.152***

Table 1.3: Comparison of sample of medium-sized SMEs to population of medium-sized Belgian SMEs

	All Belgian SMEs		Sample		Difference of means
	Average	Median	Average	Median	
Firm Age	30.28	28.00	32.77	30.00	2.49**
Total Assets (thousands)	14623	12654	16641	14420	2018***
Employees	70.94	59.00	77.06	64.00	6.12*
Employee costs to total assets	0.603	0.297	0.417	0.280	-0.186***
Cash & equivalents to total assets	0.173	0.083	0.113	0.058	-0.060***
Stock & receivables to total assets	0.631	0.639	0.639	0.658	0.01
Intangible assets to total assets	0.461	0.459	0.566	0.579	0.106***
EBITDA to total assets	0.017	0.000	0.018	0.002	0.00
Leverage rate	0.093	0.081	0.104	0.094	0.01
Daughter company	0.585	1.000	0.693	1.000	0.108***
Limited liability	0.181	0.000	0.140	0.000	-0.040**
Brussels HQ	0.133	0.000	0.043	0.000	-0.090***
Flanders HQ	0.643	1.000	0.786	1.000	0.143***
Wallonia HQ	0.225	0.000	0.171	0.000	-0.054***

Tables 1.2 and 1.3 show that compared to equally-sized SMEs, our sample of SMEs is relatively older, has lower employee costs and holds lower cash relative to total assets. At the same time, performance and leverage rate only differ for the small-sized SMEs. The medium-

sized SMEs in our sample do not have a significantly different EBITDA to total assets or leverage ratio than the average of medium-sized Belgian SMEs. At the same time, the portion of firms registered as a limited liability company, only differs for the medium-sized SMEs. This also indicates that the difference in the overall sample (table 1.1) in the proportion of SMEs that are registered as such, can be contributed to relatively larger weight of medium-sized SMEs in our sample. Last, the daughter status of geographic distribution also seems to be equally skewed for both small- and medium-sized SMEs in our sample. Flemish firms are overrepresented, just as daughter corporations. A more detailed description of the sample (i.e., not compared to the overall population) will be presented and discussed in chapters 3 (at year-end 2018) and chapter 4 (at year-end 2019).

The survey had two main advantages. First, firms registered in Belgium operating with limited liabilities of shareholders are obligated to file their annual accounts. Hence, we were able to link the survey data to the surveyed firms their financial statements, through the Bel-First database of Bureau Van Dijk. Second, as we relied on survey data, we were able to measure in great deal firms' number of strategic changes. We used the strategic change measure of Brunninge et al. (2007), which was designed for measuring strategic change in SMEs, and comprises of no less than 13 items. Measuring 13 different strategic actions allows us to paint a broad picture of firms' strategy change. Studies that try to measure strategic change actions by relying on financial statements data, typically can rely on less variables. Several important strategic decisions are not inferable from the financial statements, such as the firm introduction (or elimination) of new (or existing) products, or internationalization processes.

One disadvantage of the survey, and surveys in general, is that the reported level of strategic change depends on the perception of the respondent, which may differ from the actual situation. One example of such bias are socially desirable responses (Grimm, 2010). It could be, for example, that an executive may be less likely to admit that the firm has fired a large extent of its employees, while the firm's digitization efforts may be overstated.

1.4.4 Study 4: "Financing Diversity as an enabler of Strategic Changes In SMEs"

This study also relies on the data we collected ourselves by surveying a sample of 5,706 Belgian private SMEs during October 2020. However, it made use of different questions – which were asked more at the end of the survey. Hence, only 525 SMEs responded to all the survey questions we used, instead of 654 in the third study.

We relied on 3 different questions, in particular. First, we did not measure strategic changes during 2019, but during 2020 – up to the moment the survey was answered. This

allowed us to get insight in how firms' introduced strategic change actions during the COVID-19 pandemic, which is insightful as crises demand strategic responses (Wenzel et al., 2020). Second, due to the fact that we measured firms' strategic changes during COVID-19, we used a different measure of strategic changes than in the fourth study. Indeed, we relied on the composite index developed by Herrmann & Nadkarni (2014). This index is potentially very insightful, as it can be split up in strategic changes that are undertaken in response to environmental threats (e.g., closing product lines, retreating from international markets), and strategic changes that are undertaken in response to environmental opportunities (e.g., introducing new products, expanding to new markets). This is especially insightful during COVID-19, as this period was characterized by an increase in both environmental opportunities and threats. As such, using a measure of threat-oriented strategic changes and a measure of opportunity-oriented strategic changes, allows us to detect how firms responded to the threats and opportunities posed during COVID-19. Third, we measured the firm's financing diversity during 2019 by asking whether it had attracted certain types of financing.

The same (dis)advantages hold as in the third study. One additional advantage in using our survey data, is that it allowed us to distinguish the firm's actual sources of financing, which few studies are able to document. Indeed, most studies do not go beyond distinguishing equity from (short- and long-term) debt (Cosh et al., 2009).

1.5 Structure of this dissertation

Following this introductory chapter, this dissertation contains five more chapters. Four of which are empirical studies, as described briefly below, while the final chapter contains broader, overall conclusions, practical implications and directions for future research.

1.5.1 Chapter 2: "Financing constraints and SME growth: the suppression effect of cost-saving management innovations"

In this chapter, we study the influence of constrained access to external financing on cost-saving management innovations, which is a strategic change action that is focused on increasing firm efficiency and cost-cutting.

In line with the resource dependence theory, we hypothesize that SMEs who perceive their access to external financing as the most problematic issue in the firm, are significantly more likely to introduce cost-saving management innovations. These cost-saving management

innovations may, then, improve firm growth, mitigating some of the negative effect of the constrained access to external financing on firm growth.

Our results are confirmed through analyses on data from the SAFE, as discussed in section 1.4.1 and in the study itself. In order to test the extent to which the increased tendency to introduce cost-saving management innovations mitigates the negative effect of constrained access to external financing on firm growth, we make use of the recently developed *khb* procedure. This is a mediation procedure that can be used when the mediator is binary (cost-saving management innovation) and the dependent variable binary or ordinal (firm growth was a survey question ranking from 1 to 4).

Our findings provide evidence that firms do respond by introducing strategic changes in response to having financing constraints, and, doing so, can mitigate its negative effects on growth.

1.5.2 Chapter 3: Replication study of "Financing constraints and SME growth: the suppression effect of cost-saving management innovations"

This study is a replication of Study 2 (as discussed in section 1.5.1). It tests the hypotheses of Study 2 on the self-collected data of Belgian SMEs. Doing so, the study can test the effect of cost-saving management innovations on profitability, or the growth of firms' earnings before interests and taxes (EBIT). This is insightful, as Study 2 only tested the effect on revenue growth.

Chapter 3 finds that cost-saving management innovations have a positive effect on the growth of firms' profits. Combined with Chapter 2, this dissertation, thus, has strong evidence that firms respond to their constrained access to external financing by introducing strategic changes that may be beneficial for its performance. This is contrary to prior belief.

1.5.3 Chapter 4: "Bundles of slack and SMEs' strategic changes: the role of family ownership"

In this chapter, we study the role of firms' financial slack resources for firms' ability to introduce strategic changes. We do so by building on the latest insights of firms as bundles of slack, and study the role of financial slack in a bundle with human resource slack. Moreover, as firm goals play an important role in the allocation of slack resources, we take family ownership into consideration as a moderating variable.

Our results synthesize the opposing slack-as-resources-for-change perspective and the slack-as-buffers perspective. We find that non-family-owned firms who bundle high levels of financial slack with low levels of HR slack undertake the greatest number of strategic changes.

However, in family-owned firms, this combination (or bundle) results in the fewest strategic changes. This is in line with the behavioral agency model, which poses that family owners prefer stability over short-term outperformance, hence why family-owned firms use their financial slack resources as a buffer to change.

In non-family-owned firms the fewest strategic changes, are introduced when the firm bundles low levels of financial slack with low levels of HR slack.

The study also performs further robustness analyses in order to study how the effects of the bundles of slack differ among family-owned firms according to their socioemotional wealth preferences. The results show that the effects of the bundles of slack increase or decrease depending on the importance family members attach to socio-emotional wealth dimensions, providing further testimony to the importance of distinguishing family-owned from non-family-owned firms when studying the role of (financial) slack resources for strategic changes.

1.5.4 Chapter 5: "Financing Diversity as an enabler of Strategic Changes In SMEs"

In Chapter 5, we study the ability of firms to introduce strategic changes in response to environmental threats and environmental opportunities, and the role of a firm's relation with its external capital providers therein.

More specifically, we study the extent to which a firm's financing diversity, or the number of different types of external capital providers from which the firm had obtained financing, allowed the firm to introduce its strategy during the COVID-19 pandemic.

The study hypothesizes that greater financing diversity results in greater ability to introduce strategic changes in response to both environmental opportunities and environmental threats. This, as the financing terms and conditions may get less stringent, while the firm may get more environmental insights.

OLS regressions provide support for this hypothesis, although robustness analyses using instrumental variable regressions show that financing diversity only increases firms' ability to respond to environmental opportunities. Moreover, the positive effect of financing diversity is lesser for younger firms, due to their liability of newness.

Chapter 2

This chapter is based on the article : "De Blick T, Paeleman I, & Laveren E (2023). Financing constraints and SME growth: the suppression effect of cost-saving management innovations. Small Business Economics, in print."

Abstract A constrained access to external financing has a negative effect on firm growth. This is even more problematic for SMEs, as smaller firms are more prone to having financing constraints. Drawing on the resource dependence theory, we argue that firms with constrained access to external financing seek to become less dependent on their access to external financing. Firms can introduce cost-saving management innovations, which are innovations in the form of new organizational processes, practices and structures with the goal of reducing the firm's costs and increasing its efficiency. Relying on survey data of 2,973 observations of SMEs among 34 European countries, our results show that SMEs with constrained access to external financing are indeed more likely to introduce such cost-saving management innovations. We also find evidence that cost-saving management innovations positively affect firm growth. Hence, we find a positive indirect effect of constrained access to external financing on SME revenue growth through cost-saving management innovations. This positive indirect effect suppresses the negative direct effect of constrained access to financing on revenue growth, pointing to a potentially important role of cost-saving management innovations as a coping strategy for constrained access to external financing for SMEs.

Plain English Summary Although constrained access to external financing is a well-known barrier to innovation and growth, we find that constrained access to external financing induces cost-saving management innovations that subsequently stimulate SME growth. SMEs seek to reduce their dependence on external capital when they hold no power over external capital providers. Among our sample of 2,973 observations of European SMEs, a quarter of SMEs introduced cost-saving management innovations, which increased to one-third if the firm perceived its access to external financing as its most important problem. These innovations consequently increased revenue growth and suppressed the negative effect of a constrained access to external financing on growth. This is an important insight for managers in SMEs who

seek to stimulate firm growth even when dealing with financing constraints. Policymakers may note that not all SMEs are affected equally negative by financing constraints.

Keywords financing constraints; SMEs; management innovation; firm growth

2.1 Introduction

Constrained access to external financing (CATEF) is an essential impediment to SME growth (Beck and Demirguc-Kunt, 2006; Bottazzi et al., 2014; Coluzzi et al., 2015; Huber, 2018; Moscalu et al., 2020; Rahaman, 2011). Firms with CATEF (i.e., constrained access to both bank financing and alternative sources of financing) must resort to internal financing to fund growth opportunities (Rahaman, 2011). As internal financing is often insufficiently available, SMEs frequently forgo their growth opportunities (Carpenter and Petersen, 2002). Hence, it is common among SMEs that growth is negatively impacted by CATEF (e.g., Moscalu et al., 2020).

Firms' response to financing constraints is crucial for firm growth and survival. Yet only few studies have addressed how firms themselves (i.e., instead of policymakers) can cope with a constrained access to all types of financing sources, so that the negative consequences of those constraints can be suppressed (Williamson and Yang, 2021). Instead, prior literature has uncovered several decisions made by SMEs in response to financing constraints. Such research has uncovered that these decisions, such as cutting R&D spending (Czarnitzki and Hottenrott, 2011) or reducing export initiatives (Pietrovito and Pozzolo, 2021), mainly affect long-term firm growth in a negative way. Therefore, we address the research question whether SMEs can respond to their financing constraints in such a way that firm growth is positively affected.

As depicted by the resource dependence theory developed by Pfeffer and Salancik (1978), firms should seek ways to reduce their dependence on an external party if the relationship with such party is unfavorable to the firm. If access to bank credit is constrained, firms may seek alternative types of financing instead (Casey and O'Toole, 2014; Mol-Gómez-Vázquez et al., 2020). However, if a firm is also unable to obtain financing from any of the available external capital providers (i.e., the firm has CATEF), we argue that the firm could seek to reduce its dependence not just on a particular type of financing source, but on external capital in general.

Reducing dependence on external capital can be accomplished through cost-saving management innovations. These are changes in the firm's organizational processes, practices,

and structures with a focus on reducing organizational costs and increasing organizational efficiency (e.g., just-in-time inventory, lean production) (Edquist et al., 2001). We explore whether SMEs who perceive access to external financing as their most important problem are, indeed, more probable to introduce cost-saving management innovations with the purpose to increase firm growth in spite of the negative effects of financing constraints.

To test our hypotheses, we use survey data of 2,973 observations among European SMEs from 2012 to 2019. Our analyses confirm that SMEs with financing constraints are more inclined to introduce cost-saving management innovations that subsequently increases firm growth.

We make contributions to the literature on CATEF and the innovation literature. First, by drawing on the resource dependence theory, we theorize about the coping mechanisms for financing constraints in SMEs. While an extensive body of research has documented how firms can cope with a constrained access to bank financing, little research has documented coping strategies for constrained access to overall external financing (Williamson and Yang, 2021). We aim to fill this gap by documenting a coping strategy for SMEs with CATEF that supports firm growth and, thus, suppresses the negative effect of CATEF on firm growth.

Second, our study adds to the innovation literature by showing that CATEF can have a positive effect on innovation, specifically cost-saving management innovations. This provides additional nuance to the large body of research that has documented a negative effect of CATEF on several types of innovations. As in most innovation literature (Crossan and Apaydin, 2010; Keupp et al., 2012), innovation scholars investigating CATEF have mainly focused on technical (i.e. product and process) innovations, which carry a more uncertain pay-off and often require large capital investments. This study is the first to document the relation between financing constraints and the less expensive and less risky cost-saving management innovations strategy (Aravind, 2012; Edquist et al., 2001; Vaccaro et al., 2012), which provides further insights on the effect of financing constraints on innovation activity. In doing so, we also address calls to uncover performance outcomes of management innovations (Damanpour, 2014). While the positive performance effects of management innovations, in general, are well-established (Corsi et al., 2019; Morone and Testa, 2008; Sapprasert and Clausen, 2012), the management innovations construct comprises of a wide range of actions (Damanpour, 2014; Hamel, 2006) which may all have distinct effects (Armbruster et al., 2008; Walker et al., 2015). One distinction that results in different outcomes of management innovations, is whether they have the goal of cost-cutting or gaining legitimacy (Wei et al., 2020). Hence, our study advances our understanding of management innovations by specifically documenting the effect

of management innovations with a cost-cutting goal on firm growth and its relation to financing constraints.

2.2 Theory and hypotheses

2.2.1 Constrained access to external financing and firm growth

Many SMEs face difficulties accessing both bank and alternative financing and can be defined as having CATEF (Bańkowska et al., 2020; Kraemer-Eis et al., 2021). Such constrained access is generally the result of information asymmetries (Binks et al., 1992). Compared to larger (listed) firms, privately held SMEs have typically limited historical financial information available (Berger and Udell, 1998), which implies that monitoring the firm or gathering financial information is much more costly for privately held SMEs (Beck and Demirguc-Kunt, 2006). At the same time, private SMEs are less able to employ any of the solutions used by larger firms, such as pledging collateral, securing third-party certification, or conveying their credit quality via signaling (Kraemer-Eis and Passaris, 2015; Mac an Bhaird and Lucey, 2010; Stiglitz and Weiss, 1981). Therefore, adverse selection and moral hazard problems are more prevalent in SMEs (Hyytinen and Väänänen, 2006). Consequently, CATEF is more common among SMEs.

When access to external capital is constrained, firms have problems finding external financial resources to invest in growth opportunities (Campello et al., 2010; Cingano et al., 2016), forcing them to resort to internal finance as a funding mechanism (Rahaman, 2011). This is problematic for SMEs, as they seek to grow the business for a variety of reasons (Delmar & Wiklund, 2008; Wiklund et al., 2003). As internal financing is often insufficiently available in SMEs, they frequently must forgo their growth opportunities as a result (Carpenter and Petersen, 2002). Such passed-up opportunities comprise of, for example, a decrease in investments in research and development (Czarnitzki and Hottenrott, 2011; Hottenrott and Peters, 2012), a decrease in employment (growth) (Bentolila et al., 2018; Siemer, 2019), or a reduction in export activities (Pietrovito and Pozzolo, 2021; Paeleman et al., 2017). By reducing (risky) investments, future growth is impeded. Therefore, CATEF will have a negative effect on growth (Beck and Demirguc-Kunt, 2006; Bongomin et al., 2017; Coluzzi et al., 2015; Huber, 2018; Moscalu et al., 2020; Rahaman, 2011).

Given that our study aims to document a coping mechanism for this negative effect of CATEF on revenue growth, we depart from the following hypothesis:

H1: Constrained access to external financing has a negative impact on revenue growth.

2.2.2 A resource dependency view on constrained access to external financing

2.2.2.1 From credit constraints to financing constraints

We draw on the resource dependence theory to predict SME behavior in response to financing constraints. The resource dependence theory may be particularly suited as it is concerned with the relationship between the firm, the related parties in its environment (i.e., external capital providers), and the firm's need to access resources from these parties in its environment (Pfeffer and Salancik, 1978). It describes how constrained access to such resources (i.e., capital) forces organizations to pursue new innovations and new relationships with stakeholders that reduce the firm's dependence on those resources (Pfeffer and Salancik 1978; Sherer and Lee 2002). A large body of empirical findings with regards to financing constraints supports the resource dependence theory.

Most of the literature is concerned with constrained access to *bank* financing (bank loans, bank overdrafts, credit lines, or credit card overdrafts). In line with the resource dependence theory, it has been found that firms with constrained access to such type of financing seek to become less dependent on their relationship with *banks* by establishing relationships with providers of *alternative financing*. Examples of alternative types of financing that are considered by SMEs in response to having credit constraints are leasing, trade credit, and factoring.

Mol-Gómez-Vázquez et al. (2020) showed that discouraged borrowers, firms that do not apply for a loan anticipating rejection (Kon & Storey, 2003), and SMEs with a deteriorating debt level are more likely to make use of *leasing*. Discouraged borrowers This is in line with a survey conducted by the EBRD Evaluation Department (2011), in which respondents answered that the most important reason to use leasing was its relative speed to obtain compared to bank financing. Moreover, financing asset purchases through leasing seems like a successful coping strategy with respect to growth, as 80% of the respondents agreed that the firm had been able to grow thanks to using leased equipment (EBRD Evaluation Department, 2011). Another source of alternative financing that is tapped by SMEs with constrained access to bank financing, is *trade credit*. Love et al. (2007) argue for a "redistribution view", which states that bank financing is redistributed by firms with unconstrained access to bank financing through the provision of trade credit to firms with constrained access to bank financing. Casey and O'Toole (2014) showed that SMEs with constrained access to bank financing are more likely to make use of, and apply for, trade credit. Ferrando and Mulier (2013) showed that younger and smaller firms, which are more susceptible to having constrained access to bank financing, benefit more from the use of trade credit (both extending and receiving) with respect to the

growth of added value, compared to larger and older firms. Also, obtaining trade credit can help firms to obtain bank financing, as it can signal creditworthiness to the financial institution (Biais and Gollier, 1997). As another alternative to bank financing, Ivanovic et al. (2011) present *factoring*. Mol-Gómez-Vázquez et al. (2018) showed that SMEs are more likely to use factoring in countries where creditor protection rights are weaker, and access to bank financing is thus more constrained.

However, access to alternative financing can be constrained as well for SMEs. Andrieu et al. (2018) found a complementary, rather than substitutive, relation between bank financing and the use of trade credit, implying that SMEs with constrained access to bank financing are also more likely to be constrained from trade credit. Palacín-Sánchez et al. (2019) also found a complementary relation between long-term bank loans and trade credit, as only constrained access to short-term bank loans would be substituted with trade credit. Casey and O'Toole (2014) showed that the likelihood a firm with constrained access to bank financing applies for alternative financing increases with firm size, implying that smaller firms are less likely to seek alternative financing. Hence, some SMEs with a constrained access to bank financing are unable to reduce their dependence on bank financing by establishing relationships with providers of alternative sources of financing. These SMEs have, thus, constrained access to both bank financing and alternative financing and can be defined as having CATEF. These firms are the focus of this study and will have to undertake action which reduces their dependence on external financing altogether.

To summarize, a large body of empirical studies in line with the resource dependence theory shows that SMEs with CATEF can seek to reduce their dependence on a capital provider to which access is constrained, by attracting capital from an alternative provider of financing. However, it might be that access to such alternative providers of capital is also constrained. Therefore, we draw further on the resource dependence theory to establish an alternative solution.

2.2.2.2 From financing constraints to management innovation

Changes in the organization of management are another action that Pfeffer and Salancik (1987) suggested firms could pursue to reduce their dependence on an external party (Hillman et al., 2009). Focusing on large firms, Pfeffer and Salancik (1987) argued this would result in "administrative succession" (i.e., CEO turnover). In SMEs, however, management and ownership often overlap. Hence, we argue that those firms who seek to adapt their management

in order to reduce dependence on external capital providers may do so through changing the *way* the firm is managed (i.e., instead of *by whom* the firm is managed).

Such change that "alters the way the work of management is performed" is defined as a *management innovation* (Hamel, 2006: 75). Management innovations comprise new approaches to devise strategy and structure in the organization, modify the organization's management processes, and motivate and reward its employees (Walker et al., 2015) and should be distinguished from technical innovations such as product or process innovations (Boer and During, 2001; Gopalakrishnan and Damanpour, 1997). Indeed, product and process innovations are postulated to follow R&D activities, where management innovations play a crucial part in firm strategy (Damanpour and Aravind, 2012). Management innovations usually comprise of the introduction of a new or significantly improved way of managing the firm, but may differ in their respective goals. For example, managers may adopt management innovations because it gives them legitimacy, but they may also introduce management innovations in search of efficiency gains (Westphal et al., 1997).

This study focuses on the latter, management innovations with a cost-saving goal. These are innovations in the organization of the management through which the firm aims to reduce the capital requirements of the firm's operations. These innovations (e.g., just-in-time inventory, lean production) seek to increase organizational efficiency by improving the organization of work (Mol and Birkinshaw 2009; Wei et al., 2019).

Prior literature has shown that, in line with resource dependence theory, constrained access to external resources may stimulate management innovations. A well-known example is the study of Sherer and Lee (2002). They showed that law firms that abided to the up-or-out HR practice started to pursue HR-oriented organizational innovations once access to elite law students became constrained.

We believe that this reasoning may also hold for SMEs with CATEF. Following the resource dependence theory, they may seek to introduce management innovations that reduce their dependence on financial resources. The main goal of the management innovations introduced in response to financing constraints would be the reduction of the firm's dependence on the availability of financial resources, or cost-saving management innovations. Hence, we argue that:

H2: SMEs with a constrained access to external financing are more likely to introduce cost-saving management innovations than unconstrained SMEs.

Given that financing constraints reduce firm growth and firms are hypothesized to respond by introducing management innovations, the effect of such innovations on firm growth is of interest. Although prior innovation literature has mostly focused on product and process innovations instead of management innovations (Damanpour et al., 2009), it is argued that management innovations are similar to product and process innovation with regard to their positive effect on firm growth (Sanidas, 2005). Indeed, existing empirical evidence points to a positive effect of management innovations on firm growth, and even more so in SMEs.

Morone and Testa (2008) found that out of the several types of innovations studied (i.e., process innovations, product innovations, management innovations, marketing innovations), management innovations and process innovations had the largest positive effects on firm growth in Italian SMEs. Corsi et al. (2019) also show that management innovations have a positive effect on firm growth, and that this effect is more positive for smaller firms. Both findings are supported by the work of Sapprasert and Clausen (2012), who also show that larger firms adopt more management innovations, although the smaller firms are the ones that benefit most thereof.

However, cost-saving management innovations are in the first place focused on increasing efficiency and reducing (working) capital requirements (Edquist et al., 2001). At the same time, improving organizational efficiency implies that the same amount of output can be produced with less financial input. In the long run, this may lead to SMEs needing fewer financial resources to fulfill their output demands, resulting in a surplus of financial resources (Musso and Schiavo, 2008). These surplus financial resources may, subsequently, be invested in growth opportunities. We argue, therefore, that cost-saving management innovations will benefit firm growth.

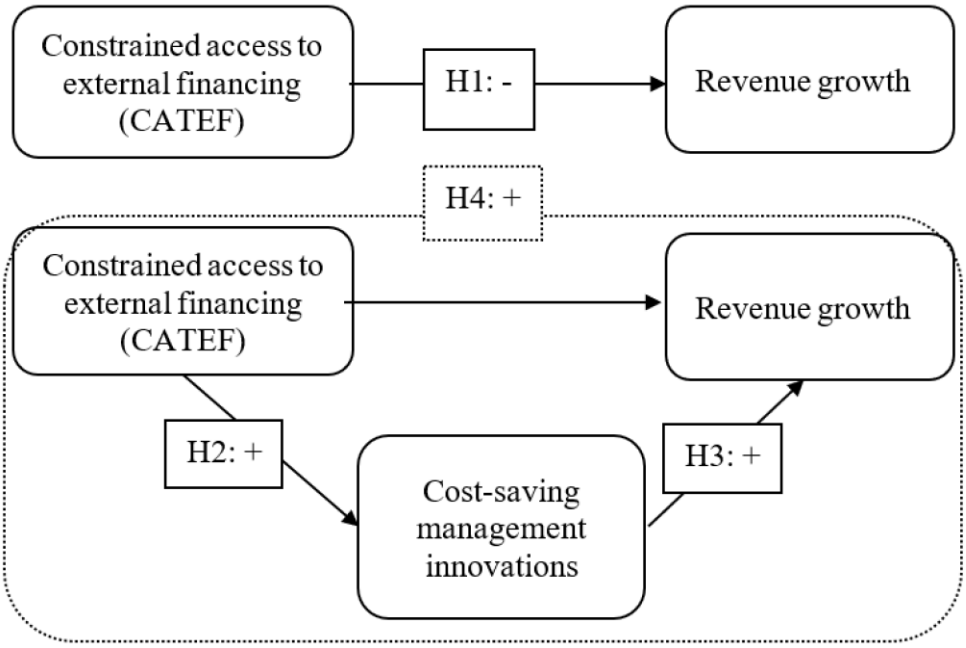
H3: Cost-saving management innovations have a positive impact on revenue growth.

Given that we hypothesize that (i) SMEs with CATEF are more likely to introduce cost-saving management innovations, and that (ii) cost-saving management innovations have a positive effect on revenue growth, it follows that CATEF may have a positive indirect effect on revenue growth. This positive indirect effect could suppress the negative direct effect of CATEF on revenue growth. Therefore, SMEs could cope with their CATEF by improving organizational efficiency by introducing cost-saving management innovations.

H4: The negative relationship between constrained access to external financing and firm growth is mediated by cost-saving management innovations.

The research model for the empirical analyses is graphically represented in Figure 2.1.

Figure 2.1



2.3 Methodology

2.3.1 Data

Our data originates from the "Survey on the Access to Finance of Enterprises" (SAFE) run jointly by the ECB and the European Commission. It is a semi-annual survey on the financial conditions faced by non-financial firms[2] in all euro area countries. The sample is randomly drawn from the Dun & Bradstreet database and stratified by firm-size class, industry, and country. We focus on privately held, for-profit, independent SMEs, defined as firms with less than 250 employees and a maximum revenue of 50 million euros (European Commission, 2020).[3] Firms are categorized in four major economic activities: manufacturing, construction, trade and services. The individual that is surveyed in each firm is a top-level executive, usually a CFO or CEO, or the owner of a smaller enterprise. The response rate is around 10%, and no signs of non-response bias have been found (for more details we refer to Bańkowska et al., 2015). The questionnaire is administered in the local language. See Ferrando et al. (2017) or

[2] The following industries are excluded (NaceRev 2 industry classification): agriculture, forestry and fishing (A), financial and insurance activities (K), public administration and defense, compulsory social security (O), education (P), human health and social work activities (Q), activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), activities of extra-territorial organizations and bodies (U), holding companies (NACE 64.20) and private non-profit institutions.

[3] Our data does not allow to make a distinction based on total assets.

Bongini et al. (2021) for more details on the SAFE data set. The data is available upon request at the SAFE access team of the European Central Bank.[4]

The SAFE has a rotating panel data structure, meaning only a selection of surveyed firms are re-surveyed in a subsequent wave. Moreover, the wave during which a firm is re-surveyed, is not necessarily consecutive to the wave during which the firm was last surveyed (ECB, 2023). There may, therefore, be gaps between firms' "consecutive" responses. Also, while some firms are never re-surveyed, others are re-surveyed in one, two, or more waves. We make use of this rotating panel structure by matching the responses over time of each firm. This matching procedure follows a specific timeline that accounts for the duration that is related to the survey questions of interest (e.g., "over the past 12 months,…", or "in the last 3 years, …"). Table 2.1 describes, next to the variables of interest, the followed timeline.

[4] More detailed information about SAFE, and the possibility to request the data, is available at: https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/index.en.html#dd (Opened on March 23, 2023)

Table 2.1: Summary of variables of interest

Measure	Definition	measured in year (or wave)
Revenue growth	Survey question "over the past three years, how much did your enterprise grow per year in terms of revenue?". Equal to 1 if revenue "got smaller", equal to 2 if there was "no growth", equal to 3 if revenue increased by "less than 20% per year", and equal to 4 if revenue increased by "over 20% per year".	Year t + 3 (or wave W + 6)
Cost-saving management innovations	Equal to 1 if the firm has introduced during the past 12 months "a new organization of management, for example a reorganization of different parts of the enterprise or reporting hierarchy to increase efficiency or reduce costs".	Year t + 1 (or wave W + 2)
Constrained access to external financing (CATEF)	Equal to 1 if the rating attributed to "how important of a problem has access to finance been to the enterprise in the last 6 months" is higher than, or equal to, the ratings attributed to each of the following topics: "finding customers", "dealing with competition", "costs of production or labor", "availability of skilled staff or experienced managers", "regulation".	Year t (or wave W)
Control variables	Internal funds, firm age, firm size, family ownership, VC/BA ownership, past revenue growth, recent revenue evolution, recent interest expenses evolution, export intensity, recent FTE evolution, country dummies, year dummies, industry dummies	Year t (or wave W)

The independent variable, i.e., CATEF, and the control variables are measured in year t. In year t + 1 (or one year (i.e., two waves) later)), we ask whether the firm has introduced cost-saving management innovations during the last year. This time lag helps us to limit reverse causality bias and test the causal effect of CATEF on the propensity that the firm introduces cost-saving management innovations. Revenue growth is measured in year t + 3 (or three years (i.e., 6 waves) later after measuring CATEF in year t). As cost-saving management innovations are measured only one year after measuring CATEF, there remain 2 years during which the innovations can impact revenue growth. Only a subset of the whole SAFE database has answered in waves that align with this timeline, as is shown in Table 2.2.

Table 2.2: Data selection procedure

wave	(a)	(b)	(c)	(d)	(e)	(f)
1	9,063					
2	5,320					
3	5,312					
4	7,532					
5	15,216					
6	7,511	396				
7	7,514	3,708	1,047	326		
8	7,510	7,409				
9	14,859	14,583	2,405	800		
10	7,520	7,442				
11	17,075	16,425	5,161	1,982	1,487	1,255
12	11,720	11,362				
13	17,979	17,321	5,175	1,550	1,206	981
14	11,725	11,439				
15	18,257	17,737	5,228	1,273	931	737
16	11,724	11,376				
17	17,534	16,879	4,773			
18	11,733	11,424				
19	17,848	17,256	4,808			
20	11,722	11,384				
21	18,159	17,548				
Total	252,833	193,689	28,597	5,931	3,624	2,973

Number of firms that… (a) were surveyed in this wave; (b) and have responded to the CATEF question; (c) and have responded 2 waves later to the cost-saving management innovations question; (d) and have responded 6 waves later to the revenue growth question; (e) and have responded to all control variable questions; (f) and were private, independent, and profit-oriented SMEs.

Of the total 252,833 survey responses, only 193,689 responses included an answer to the CATEF question. Only 28,597 of these 193,689 responses can be matched with a response from the same firm two waves (i.e., one year) later that includes a response to the cost-saving

management innovations question. Of these 28,597 matches, 5,931 can then be matched with a response to the revenue growth question, 6 waves after the CATEF question. Finally, of these 5,931, only 2,973 responses were from private, independent, profit-oriented SMEs that have also answered all survey questions related to our control variables. Our final dataset, therefore, consists of 2,973 matched responses of independent, private, profit-oriented SMEs across 34 European countries[5], starting in wave 11 (April-September 2014), and ending in wave 21 (April-September 2019).

2.3.2 Dependent variable: revenue growth

We follow prior scholars who investigated the relation between access to external financing and growth, by studying the firm's *revenue growth* (Coluzzi et al., 2015; Ferrando and Mulier, 2013). We rely on the survey question "by how much has revenue grown over the past 3 years", which is asked 3 years after the wave in which the firm is asked about its access to external financing (CATEF question). Firms' answers can be 1 out of the 4 ordinal answer categories. Following prior scholars (e.g., Idris et al., 2020; Morone and Testa, 2008), we construct an ordinal revenue growth variable. The variable takes the value of 1 if the firm's revenue decreased, 2 if there was "no revenue change", 3 if "growth [was] less than 20% per year" and 4 if "growth [was] more than 20% per year".

2.3.3 Mediating variable: cost-saving management innovations

In general, management innovations are concerned with the firm's structure, administrative systems, and management practices. Given that innovations related to these areas comprise of a wide range of actions, management innovations have been conceptualized in several ways (Damanpour, 2014), which have led to significantly different results even within the same samples (Armbruster et al., 2008; Walker et al., 2015). One solution to tackle this "conceptual ambiguity" (Damanpour, 2014: 1265), is to specify the goal of the management innovations. Westfall et al. (1997) have shown that some firms introduce management innovations in order to increase efficiency, while others adopt management innovations in order to gain legitimacy. Depending on the goal, management innovations may have different effects on firm performance (Wei et al., 2020).

[5] There were no observations of firms in Bosnia & Herzegovina or Kosovo. The distribution of the sample among the different countries is displayed in Table 2.A1 in the Appendix.

We focus on the management innovations that have a goal of increasing efficiency by including a survey-based measure of management innovations which allows us to identify actual innovation actions by asking the respondent the following question: "During the past 12 months, have you introduced a new organization of management" with the following explainer: "for example a reorganization of different parts of the enterprise or reporting hierarchy to increase efficiency or reduce costs". The variable takes the value of 1 when the respondent answers "yes" and 0 when "no". The survey question only mentions the efficiency-increasing or cost-cutting goal of the management innovations as an example. According to the "focusing hypothesis" (Tourangeau et al., 2017), examples in a survey question bias the respondent's response towards answering the example (e.g., Aizpurua et al., 2021). Hence, while the survey question may also have captured management innovations with other goals than cost-saving, we believe many respondents kept the cost-saving focus in mind when responding to the survey question.

2.3.4 Independent variable

The survey attempts to identify *CATEF* by asking the respondent to rate "how important of a problem, on a scale of 1-10, has the firm's access to external financing been in the past six months", while also asking to rate five other crucial topics: finding customers, dealing with competition, costs of production or labor, availability of skilled staff or experienced managers, and regulation. We categorize the firm as having CATEF if its access to finance is rated as the most important problem out of these six different topics (i.e., if the score for access to external financing is as high or higher than the score of each of the five other topics). Prior scholars have used a similar variable, based on the firm rating its access to finance as its most important problem (e.g. Ferrando and Griesshaber, 2011; Ferrando and Mulier, 2015; Siedschlag et al., 2014).

We believe our measure has three advantages. First, we measure the firm's perception of access to external financing, as opposed to inferring it from balance-sheet data. Strategic actions frequently emerge from managers' cognitive processes and reflections (Kahneman, 2011; Markowska et al., 2019), which depend on their perceptions (Edelman and Yli-Renko, 2010). Therefore, managers' perception of access to finance may be a better predictor than the firm's "actual" access to financing when studying managerial actions (Schauer et al., 2019). Moreover, Birkinshaw and Mol (2006) proposed that a negative perception of the current situation is the first step towards management innovations. Second, our variable measures access to *external financing*, which is broader than just bank financing. Measuring the firm's

access to external financing allows us to identify SMEs who are unable to rely on a coping strategy of obtaining alternative financing, as suggested by, among others, Ferrando and Mulier (2013). Third, constrained access to external finance is not for all firms equally *problematic*. Firms shift from using external financial resources towards using internal financial resources when access to external finance becomes more constrained (Rahaman, 2011). Some firms may have sufficient internal funds to finance all growth opportunities. For these firms, CATEF should be less problematic than for firms with equally CATEF but with insufficient internal funds.

2.3.5 Control variables

The selection of the firm-level controls draws on existing research that estimates the determinants of management innovations and growth. Availability of *internal funds* has been shown to positively affect growth among firms with CATEF (Carpenter and Petersen, 2002; Moscalu et al., 2020; Rahaman, 2011). We follow Moscalu et al. (2020) and use the survey question "have you used retained earnings or sold assets in the past six months?" to determine whether the firm has internal funds to draw on. We construct a dummy variable equal to 1 if the firm answers "yes" to the survey question. *Firm age* may influence firms' ability to change and responsiveness (Kelly and Amburgey, 1991; Reed, 2021). The number of years since incorporation are surveyed through an ordinal variable, equal to 1 if the firm is "younger than 2 years", equal to 2 if the firm is "between 2 and 5 years old", equal to 3 if the firm is "between 5 and 10 years old", and equal to 4 if the firm is "older than 10 years". As smaller firms are more flexible (Colombo et al., 2021) and have more often CATEF (e.g. Casey and O'Toole, 2014), we control for *firm size* by including an ordinal variable measuring the firm's revenue. The variable is equal to 1 if revenue was "up to €500,000", equal to 2 if revenue is "more than €500,000 and up to €1 million", equal to 3 if revenue is "more than €1 million and up to €2 million", equal to 4 if revenue is "more than €2 million and up to €10 million", and equal to 5 if revenue is "more than €10 million and up to €50 million". Family firms seek socio-emotional wealth next to economic wealth (Gómez-Mejía et al., 2007), which could impact the propensity of management innovations. We control for *family ownership* by including a dummy variable that takes the value of 1 if the largest number of shares is owned by "family or entrepreneurs" (Casey and O'Toole, 2014). We also control for ownership of Venture Capitalists or Business Angels, as these firms could receive strategic advice (Colombo and Grilli, 2010; Hellmann and Puri, 2002). We include a dummy variable *VC/BA ownership* that is equal to 1 if the largest number of shares is owned by "venture capital enterprises or business angels". We follow

Ferrando and Mulier (2013), who show that past growth is an important control variable when documenting the relation between access to finance and growth, and control for *past revenue growth.* This control variable is also a good predictor of future growth aspirations (Delmar and Wiklund, 2008; Kolvereid, 1992). We construct an ordinal value using the survey question, which is surveyed in the same wave during which CATEF is surveyed, that asks the respondent to indicate by how much revenues have grown over the past three years. The variable is equal to 1 if revenues have "decreased", equal to 2 if revenues "have not changed", equal to 3 if revenues have "grown by less than 20% annually", and equal to 4 if revenues have "grown by more than 20% annually". We also control for the firm's *recent revenue evolution* using the survey question that asks how firm turnover has evolved in the past six months. We construct an ordinal variable that is equal to 1 if revenue "decreased", equal to 2 if revenue "remained unchanged", and equal to 3 if revenue 'increased" in the past six months. We also include a variable which describes the firm's *recent interest expenses evolution,* as it might impact the firm's access to external financing. We use the survey question that asks how interest expenses have evolved in the past six months. We construct an ordinal variable that is equal to 1 if interest expenses "decreased", equal to 2 if interest expenses "remained unchanged", and equal to 3 if interest expenses "increased" in the past six months. We also include a variable that depicts the firm's *recent FTE evolution,* as this may impact future revenue growth. We use the survey question that asks how the number of employees has evolved in the past six months. We construct an ordinal variable that is equal to 1 if the number of employees "decreased", equal to 2 if the number of employees "remained unchanged", and equal to 3 if the number of employees "increased" in the past six months. Finally, firms with strong international ties may have more growth opportunities, and may also get in touch with more potential management innovations. Hence, we include an *export intensity* variable, or the percentage a firm's revenue is accounted for by exports.

Given the panel structure of our data, we would, ideally, use firm-specific fixed effects to eliminate any potential impact of firm-specific unobservable variables. However, as is the case in other studies that rely on a rotating panel survey dataset (e.g., Fossen, 2021), we are limited to including *country, year (wave), and industry dummies*. Indeed, it is very difficult to implement firm-specific fixed effects due to the ordinal nature of the survey questions (e.g., firm size, firm age, revenue growth), combined with the rotating panel structure of the survey. Not many firms change ordinal categories in a limited period of time. For example, when surveyed in two consecutive waves, more than 90% of firms report no revenue change, given that the ordinal revenue categories are broad (e.g., one answer category is "between 10 and 50

million euros"). Moreover, many other variables, among our CATEF and cost-saving management innovations variables, are binary (internal funds, family ownership, VC/BA ownership, country, industry), which results in only few changes in such a relatively short period. Therefore, there would be no sufficient temporal variation in order to include firm-specific fixed effects or for first-differencing our data (Wooldridge, 2010). This issue could be resolved by increasing the number of waves in which firms have responded, as this would introduce greater temporal variation. However, the number of waves in which firms have responded is constrained by the rotating panel structure of the survey, as only a selection of the firms currently included in our sample have been surveyed in additional waves. Therefore, we do not make use of firm-specific fixed effects or first-differencing techniques.

2.3.6 Empirical models

Figure 2.1 describes the hypothesized negative relationship between CATEF and revenue growth, suppressed by cost-saving management innovations. We first measure the direct impact of CATEF on revenue growth (hypothesis 1). Then, we measure the impact of CATEF on cost-saving management innovations (hypothesis 2) and the impact of cost-saving management innovations on revenue growth (hypothesis 3). Last, we test whether the indirect effect of CATEF on revenue growth through cost-saving management innovations is significant (hypothesis 4).

Our dependent variable, i.e., revenue growth, is measured using a 4-point ordinal scale. We initially use a traditional OLS estimation to test hypotheses 1 and 3. However, Daykin and Moffatt (2002) discuss that the use of linear regression techniques for modeling ordinal data is inappropriate, because the differences between the different levels of the observed outcome variable are not equal in size and ordered probit models should be used. We, therefore, also employ a standard ordered probit model, following prior scholars measuring SME growth as an ordinal variable (Idris et al., 2020; Morone and Testa, 2008). The ordinal probit model assumes that the error term is independent of the independent variables and normally distributed across the firms in the sample. As some firms are included more than once, which could lead to correlation in the error term among the observations of such firms, we cluster the robust standard errors at the firm level, as suggested by Cameron and Miller (2015).

To test our hypothesis 2, estimating the firm's propensity to complete cost-saving management innovations, we use a probit approach, given the dichotomous nature of the cost-saving management innovations measure (Hosmer et al., 2013). We report the average marginal effects of the independent variables. Marginal effects indicate the percentage point

change in the probability that the dependent variable is equal to 1, for an instantaneous increase of the predictor while the other variables are held constant. The average marginal effect is the average of the marginal effects of a regressor, that are calculated for each set of the other regressors. It gives an estimation of how much the probability that the firm introduces cost-saving management innovations changes when a firm has CATEF.

Finally, to test our hypothesis 4, we make use of the Karlson–Holm–Breen (KHB) mediation method developed by Karlson et al. (2012) and Kohler et al. (2011).[6] This is in line with recent management scholars who have estimated an indirect effect when the mediating variable is binary (e.g., Buyl et al., 2015; Calic and Mosakowski, 2016; Ingram, 2022; Ingram and Oh, 2022; Rietveld and Hoogendoorn, 2022). The KHB method solves a problem with traditional mediation analyses in non-linear models, such as (ordinal) probit. In non-linear models, the coefficients are not separately identified from the error variance. This means that the extent to which the change in the coefficient of the CATEF-variable is due to the inclusion of cost-saving management innovations in the regression, cannot be calculated in a straight way. The KHB method resolves this variance rescaling issue (Karlson et al., 2012), so that the total effect of CATEF on revenue growth can be attributed to a direct effect and an indirect effect through cost-saving management innovations. The KHB model compares the estimated coefficients of two nested ordered probit models following a Sobel test approach (Sobel, 1982), estimating the extent to which a relationship is mediated by a binary variable and decomposing the total effect of CATEF into its direct and indirect effect (Breen et al., 2021).

Following hypothesis 4, we expect that the indirect effect between CATEF and revenue growth is significantly positive while the direct effect is significantly negative. The indirect effect should, thus, suppress the negative direct effect of CATEF on revenue growth (Agler and De Boeck, 2017; MacKinnon et al., 2000). Hence, when the indirect effect is included in the model, the absolute value of the coefficient of the direct effect increases. Indeed, following previous scholars (e.g., Cheung and Lau, 2008; Vilanova and Vitanova, 2020), a suppressor variable is defined as "a variable which increases the predictive validity of another variable by its inclusion in a regression equation" (Conger, 1974: 36-37). It is the opposite of a partial or full mediator, which decreases the predictive validity of the independent variable when it is included in the model.

[6] We use the STATA *khb* command as developed by Karlson et al. (2012).

2.4 Results

2.4.1 Descriptive statistics

Table 2.3 presents the descriptive statistics of the different variables. The means of the descriptives for the SMEs that did not introduce cost-saving management innovations are compared through a paired t-test to the means of the SMEs that did introduce cost-saving management innovations. A higher proportion of SMEs that introduced cost-saving management innovations (25%) report a growth above 20% per year in the three years after measuring CATEF than SMEs that did not introduce cost-saving management innovations (18%), while a higher proportion of these SMEs (21%) did not experience any revenue change compared to the SME that introduced cost-saving management innovations (15%). 19% of the SMEs indicate that access to financing has been their most important issue, similar to findings of Ferrando and Mulier (2015), which is significantly higher among SMEs that introduce cost-saving management innovations in the following year (25%). A larger proportion of these SMEs (24%) made use of internal funds, as compared to SMEs that did not introduce cost-saving management innovations (19%). While both groups of SMEs do not seem to differ regarding age, the smallest SMEs are less represented among the SMEs that introduce cost-saving management innovations (17% compared to 24%), while the opposite seems to hold for the largest SMEs (21% compared to 18%). While family owners are equally distributed among both groups, there does seem to be a higher proportion of VC/BA ownership among SMEs that introduce cost-saving management innovations (1% compared to 0%). Past revenue growth is also equally distributed among SMEs that did or did not introduce cost-saving management innovations. However, a greater proportion of SMEs that introduced cost-saving management innovations experienced recent revenue increase (53% compared to 44%). Regarding recent interest expenses evolution, a larger share of SMEs that introduce cost-saving management innovations experienced a recent interest expenses decline (24% compared to 16%). Also, more SMEs that introduced cost-saving management innovations experienced a recent FTE increase (38% compared to 27%). Finally, there does not seem to be a significant difference in the average export intensity between SME that did and did not introduce cost-saving management innovations. The variance inflation factors of all variables (except the year & country dummies) were below 2 (not reported), indicating that potential multicollinearity issues should be limited.

Table 2.3: Descriptive statistics

Variable	full sample, n= 2,973		No cost-saving management innovations introduced n=2,158		Cost-saving management innovations introduced n= 815		Difference (Paired t-Test)
	mean	s.d.	mean	s.d.	mean	s.d.	
Revenue growth							
Decline	0.12	0.33	0.12	0.33	0.13	0.33	0.00
No change	0.19	0.39	0.21	0.41	0.15	0.36	0.06***
Increase <20%	0.53	0.50	0.53	0.50	0.53	0.50	0.00
Increase >20%	0.16	0.36	0.14	0.35	0.20	0.40	-0.06***
CATEF	0.19	0.40	0.18	0.38	0.25	0.43	-0.07***
Cost-saving management innovations	0.27	0.45	-	-	1.00	-	-1.00
Internal funds	0.21	0.40	0.19	0.40	0.24	0.43	-0.04*
Firm age							
Less than 2 years	0.01	0.09	0.01	0.09	0.01	0.08	0.00
2-5 years	0.05	0.21	0.05	0.22	0.04	0.21	0.01
5-10 years	0.12	0.33	0.12	0.33	0.13	0.34	-0.01
more than 10 years	0.82	0.38	0.82	0.38	0.81	0.39	0.01
Firm size							
0 - 500k EUR	0.22	0.42	0.24	0.43	0.17	0.38	0.07***
500k - 1M EUR	0.12	0.33	0.13	0.33	0.12	0.32	0.01
1M - 2M EUR	0.14	0.35	0.14	0.35	0.15	0.36	-0.01
2M - 10M EUR	0.32	0.47	0.31	0.46	0.35	0.48	-0.04*
10M - 50M EUR	0.19	0.39	0.18	0.39	0.21	0.41	-0.03
Family ownership	0.50	0.50	0.50	0.50	0.51	0.50	-0.01
VC/BA ownership	0.01	0.08	0.00	0.07	0.01	0.11	-0.01*
Past revenue growth							
Over 20%	0.13	0.33	0.13	0.33	0.12	0.33	0.00
Between 0 and 20%	0.21	0.41	0.21	0.41	0.20	0.40	0.01
No change	0.50	0.50	0.50	0.50	0.49	0.50	0.01
Decline	0.17	0.38	0.17	0.37	0.18	0.39	-0.02
Recent revenue evolution							
Decline	0.20	0.40	0.21	0.41	0.19	0.39	0.02
No change	0.34	0.47	0.35	0.48	0.29	0.45	0.07***
Increase	0.46	0.50	0.44	0.50	0.53	0.50	-0.09***
Recent interest expense evol.							
Decline	0.18	0.39	0.16	0.37	0.24	0.43	-0.08***
No change	0.61	0.49	0.63	0.48	0.56	0.50	0.08***
Increase	0.21	0.40	0.21	0.41	0.20	0.40	0.00
Recent FTE evolution							
Decline	0.12	0.32	0.12	0.32	0.13	0.33	-0.01
No change	0.58	0.49	0.62	0.49	0.49	0.50	0.13***
Increase	0.30	0.46	0.27	0.44	0.38	0.49	-0.12***
Export intensity	0.18	0.29	0.17	0. 29	0.19	0.28	-2.22
Industry							
Manufacturing	0.30	0.46	0.29	0.45	0.33	0.47	-0.05*
Construction	0.13	0.33	0.13	0.34	0.11	0.32	0.02
Trade	0.27	0.45	0.28	0.45	0.26	0.44	0.02
Services	0.30	0.46	0.30	0.46	0.29	0.45	0.01

Table 2.A2 in the Appendix reports the correlations between the variables of interest. Cost-saving management innovations are significantly positively correlated with both CATEF and future revenue growth. CATEF and future revenue growth are, on the other hand, significantly negatively correlated.

2.4.2 The effect of CATEF on revenue growth

Table 2.4 presents the effect of our variables of interest on revenue growth. Using an ordinal probit procedure, Model 1 estimates the effect of the control variables on revenue growth, while Model 2 estimates the total effect of CATEF on revenue growth.

With regards to firm-specific control variables (Model 1), firm age has a negative effect on revenue growth, while past revenue growth, recent revenue evolution and recent FTE evolution have positive effects on revenue growth.

Model 2 increases significantly in power upon the inclusion of CATEF ($\Delta Chi2=8.79$, $p<0.001$). Model 2 provides strong support for *hypothesis 1*, as CATEF has a significant negative effect on revenue growth. This result confirms prior findings on the negative impact of CATEF on growth (Coluzzi et al., 2015; Huber, 2018; Moscalu et al., 2020; Rahaman, 2011). Model 5, reporting the OLS estimation, also documents a significantly negative effect of CATEF on revenue growth.

Table 2.4: Models of constrained access to external financing and cost-saving management innovations on revenue growth (Hypotheses 1 and 3)

	Model 1	Model 2	Model 3	Model 4	Model 5
Estimation method	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	OLS
Dependent variable	Revenue growth	Revenue growth	Revenue growth	Revenue growth	Revenue growth
Cost-saving management innovations			0.144***	0.156***	0.102***
			(0.049)	(0.049)	(0.036)
CATEF		-0.207***		-0.218***	-0.180***
		(0.056)		(0.057)	(0.043)
Internal funds	0.067	0.062	0.062	0.057	0.042
	(0.052)	(0.052)	(0.052)	(0.052)	(0.039)
Firm age	-0.227***	-0.230***	-0.227***	-0.230***	-0.161***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.027)
Firm size	0.018	0.017	0.015	0.014	0.016
	(0.016)	(0.016)	(0.016)	(0.016)	(0.012)
Family ownership	0.025	0.030	0.028	0.034	0.029
	(0.043)	(0.043)	(0.043)	(0.043)	(0.033)
VC/BA ownership	0.064	0.080	0.037	0.051	0.011
	(0.294)	(0.298)	(0.292)	(0.295)	(0.224)
Past revenue growth	0.111***	0.113***	0.111***	0.114***	0.082***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.018)
Recent revenue evolution	0.250***	0.252***	0.246***	0.248***	0.189***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.023)
Recent int. expenses evolution	0.046	0.025	0.054	0.032	0.026
	(0.035)	(0.035)	(0.035)	(0.035)	(0.026)
Recent FTE evolution	0.185***	0.182***	0.179***	0.175***	0.131***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.027)
Export intensity	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Country dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Wald Chi2	320.98	329.77	333.95	343.35	
ΔChi2 (compared to Model 1)		8.79***	12.97***	22.37***	
R^2					0.118
Observations	2,973	2,973	2,973	2,973	2,973

Clustered robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.4.3 The effect of CATEF on cost-saving management innovations

Table 2.5 illustrates the average marginal effect of CATEF on the propensity that the firm completes cost-saving management innovations. Model 1 estimates the effect of the control

variables on cost-saving management innovations, while Model 2 estimates the effect of CATEF on cost-saving management innovations.

With respect to the firm-level control variables (Model 1), larger SMEs in terms of revenue are significantly more likely to introduce cost-saving management innovations, which is in line with the notion that smaller firms already have relatively fewer processes and a less complex structure (Meijaard et al., 2005), making cost-saving management innovations thus less enticing. SMEs with a venture capitalist or business angel as the largest shareholder are also more likely to introduce cost-saving management innovations, just as recently growing SMEs–both in terms of revenue and in terms of FTEs. SMEs where the interest expenses have recently increased, are less likely to introduce cost-saving management innovations.

Model 2 increases significantly in power upon inclusion of CATEF ($\Delta Chi2=11.43$, $p<0.001$). Model 2 provides strong support for *hypothesis 2*, as SMEs with CATEF are 6.7% more likely to introduce cost-saving management innovations ($p<0.001$). An increase of 6.7 percentage points is economically significant given that, on average, 27% of SMEs introduce cost-saving management innovations each year (see Table 2.2).

Table 2.5: Probit estimations of CATEF on the propensity to introduce cost-saving management innovations (Hypothesis 2)

	Model 1 Cost-saving management innovations	Model 2 Cost-saving management innovations
CATEF		0.067***
		(0.022)
Internal funds	0.032	0.034
	(0.021)	(0.021)
Firm age	-0.009	-0.007
	(0.014)	(0.014)
Firm size	0.021***	0.021***
	(0.006)	(0.006)
Family ownership	-0.023	-0.024
	(0.017)	(0.017)
VC/BA ownership	0.200*	0.192*
	(0.111)	(0.110)
Past revenue growth	0.001	0.000
	(0.009)	(0.009)
Recent revenue evolution	0.029***	0.029***
	(0.011)	(0.011)
Recent int. expenses evolution	-0.049***	-0.042***
	(0.013)	(0.013)
Recent FTE evolution	0.040***	0.041***
	(0.014)	(0.014)
Export intensity	0.000	0.000
	(0.000)	(0.000)
Country dummies	Yes	Yes
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Wald Chi2	208.20	219.63
ΔChi2		11.43***
Observations	2,973	2,973

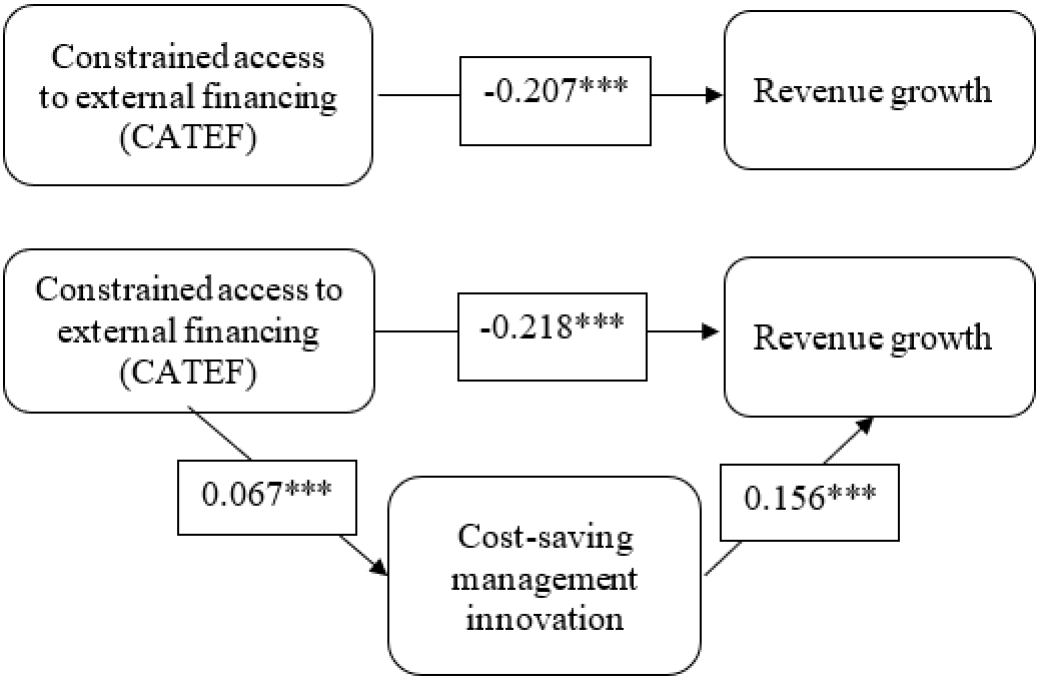
Average marginal effects are reported
Clustered robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.4.4 The effect of cost-saving management innovations on revenue growth

Model 4 in Table 2.4 presents the effect of cost-saving management innovations on revenue growth, using an ordered probit model. The model increases significantly in power compared to Model 1, upon inclusion of the cost-saving management innovations variable (ΔChi2=12.97, p<0.001). We find strong support for *hypothesis 3:* cost-saving management innovations have a significant positive effect on revenue growth. Model 5, reporting the OLS estimation, also documents a significantly positive effect of cost-saving management innovations on revenue

growth. Note that this effect is more than half the size (in absolute terms) of the effect of CATEF on revenue growth. Figure 2.2 presents an overview of our results in support of hypotheses 1, 2, and 3.

Figure 2.2: Summary of findings



2.4.5 The indirect effect of CATEF on revenue growth

Model 4 in Table 2.4 hints at the existence of a suppression effect of cost-saving management innovations on the negative effect of CATEF on revenue growth. Indeed, compared to the effect size the total effect of CATEF on revenue growth (Model 2, Table 2.4), the effect size of CATEF on revenue growth *increases* when cost-saving management innovations is added to the model (Model 4, Table 2.4). This points to the existence of a suppression effect.

Using the KHB method (Kohler et al., 2011), Table 2.6 shows the significance of the suppression effect. This method compares the effect size of the indirect effect of CATEF on revenue growth through cost-saving management innovations to the total effect of CATEF on revenue growth, and tests the significance of this comparison. This is the extent to which the direct negative effect of CATEF on revenue growth is suppressed, because SMEs are more probable to introduce growth-enhancing cost-saving management innovations in response to their CATEF.

Table 2.6: KHB decomposition of total effect into direct and indirect effect (Hypothesis 4)

	Model 1
Dependent Variable	*Revenue growth*
Predictor Variable	*CATEF*
Mediating Variable	*Cost-saving management innovations*
Total effect	-0.211***
	(0.055)
Direct effect	-0.225***
	(0.056)
Indirect effect	0.014**
	(0.006)
Observations	2,973
% Suppression effect	-6.85%

Clustered robust standard errors in parentheses
Model controls for all control variables.
*** p<0.01, ** p<0.05, * p<0.1

As displayed in Table 2.6, the KHB method shows that the indirect effect of CATEF on revenue growth through cost-saving management innovations is significantly positive ($p<0.05$). Moreover, the KHB method shows that the positive indirect effect suppresses 6.85% of the negative direct effect of CATEF on revenue growth. These findings support *hypothesis 4.* In other words, while the average growth rate of SMEs with CATEF remains lower than the average growth rate of SMEs without CATEF, the difference between the average growth rate of SMEs with and without CATEF is reduced by 6.85% because SMEs with CATEF are more likely to introduce cost-saving management innovations.

2.4.6 Two-stage estimation approach using instrumental variables

While we have identified financing constraints as causing management innovations, it may be possible that such observed relation is also subject to reverse causality or unobservable variable bias. As our measure of CATEF compares the perceived importance of CATEF to a range of other firm-problems, it would only be affected by such reverse causality if management innovations would improve (deteriorate) the other issues relatively more (less) than it would improve (deteriorate) the perceived access to external financing. This seems implausible given the specific focus of cost-saving management innovations on reducing the need for financing. Still, we perform additional instrumental variable regressions to test the hypothesized relations. To account for the endogeneity of CATEF and cost-saving management innovations, we employed a two-stage least squares estimation approach using instrumental variables. In the first stage of the model, we estimated the endogenous variable using the same factors used to

predict the dependent variable of interest, but with one additional variable that served as the instrument. For an instrumental variable approach to correct for biases associated with endogeneity, the instrument used in the first stage must be established as both effective and valid (Semadeni et al., 2014). The validity of instruments are based on relevance and exogeneity. We test the three main hypotheses following this two-stage estimation approach using instrumental variables.

First, we estimate the effect of CATEF on cost-saving management innovations. In line with Ayyagari et al. (2008), we use the square of the percentage of firms with CATEF in the same industry, country and wave as an instrument, as causality is likely to run from the average to the individual firm and not vice versa. The use of the group average as an instrument is a common technique and has recently been applied to financial perceptions (Fang et al., 2022a; Fang et al., 2022b). The F test indicates that this instrument is strong (F=259.56), as the F value is significant and above the recommended threshold of 11.59. The results of the endogeneity test (p=.304) support the exogeneity of CATEF, while the Kleibergen-Paap rk LM statistic (123.07) is also significant (<0.001), thus confirming that the instrument is valid.

Second, we estimate the effect of CATEF on revenue growth. We also use the square of the percentage of firms with CATEF in the same industry, country and wave as an instrument.

Third, we estimate the effect of cost-saving management innovations on revenue growth. Given that industry-mimicking behavior is very relevant for management innovations (Westfall, 1997), it may very well be that industry peers mimic the focal firm when it introduces management innovations. We, therefore, use the square of the percentage of firms in a the same country and wave that have undertaken cost-saving management innovations as an instrument. The instrument was significantly related to cost-saving management innovations. The F test indicates that this instrument is strong (F=54.06), as the F value is significant and above the recommended threshold of 11.59. The results of the endogeneity test (p=.0.126) support the exogeneity of cost-saving management innovations, and the Kleibergen-Paap rk LM statistic (46.16) is also significant (<0.001), confirming that the instrument is valid.

Table 7 presents the results of the three instrumental-variable estimations. All three main hypotheses are confirmed.

Table 2.7: Two-stage estimation approach using instrumental variables

Estimation method	Model 1 IV probit	Model 2 IV OLS	Model 3 IV OLS
Dependent variable	Cost-saving management innovations	Revenue growth	Revenue growth
Cost-saving management innovations			0.478*
			(0.260)
CATEF	0.396*	-0.300**	
	(0.210)	(0.129)	
Internal funds	0.112*	0.042	0.035
	(0.066)	(0.039)	(0.041)
Firm age	-0.021	-0.164***	-0.155***
	(0.046)	(0.027)	(0.027)
Firm size	0.070***	0.017	0.010
	(0.021)	(0.012)	(0.013)
Family ownership	-0.082	0.029	0.033
	(0.056)	(0.032)	(0.034)
VC/BA ownership	0.534*	0.043	-0.082
	(0.292)	(0.228)	(0.221)
Past revenue growth	-0.001	0.083***	0.080***
	(0.029)	(0.018)	(0.018)
Recent revenue evolution	0.093***	0.193***	0.177***
	(0.036)	(0.023)	(0.024)
Recent int. expenses evolution	-0.116**	0.009	0.063**
	(0.047)	(0.029)	(0.029)
Recent FTE evolution	0.133***	0.133***	0.118***
	(0.045)	(0.027)	(0.029)
Export intensity	0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)
Country dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Instruments			
Squared country-wave-industry average CATEF	1.274***	1.274***	
	(0.079)	(0.079)	
Squared country-wave average of cost-saving management innovations			1.241***
			(0.169)
First-stage test of excluded instruments			
Weak identification test – Kleibergen-Paap Wald rk F statistic	259.555	259.555	54.057
Underidentification test – Kleibergen-Paap rk LM statistic	123.070	123.070	46.159
Endogeneity test	1.055	1.055	2.337
Weak instrument robust inference – Anderson Rubin Wald test F	3.08	5.19	3.43
Observations	2,973	2,973	2,973

Clustered robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

2.4.7 Robustness test: different measure for CATEF

Our measure of CATEF compares the firm's perception of its access to external financing as a problem to the firm to the 5 other problems listed in the survey. Our measure does, by definition, not identify firms with access to finance as an important, but not the most important, problem. Studying this sample might be insightful as well, hence we construct an alternative measure of CATEF, following prior scholars (Canton et al., 2013; Motta 2020). We classify the firm as having CATEF when it perceives "access to finance" as an important problem, i.e., rates it as an 8 out of 10 or higher.

Using this alternative measure yields nearly identical results. Following the alternative measure, SMEs with CATEF are 5.9% more likely to innovate. Also, 7.03% of the total negative effect of CATEF on revenue growth is suppressed through management innovations. Both numbers are very close to the findings based on our measure used in the main analyses. The results are presented in tables A3 and A4 in Appendix.

2.5 Discussion

2.5.1 Contributions to the literature

Our results show that SMEs who perceive access to external financing as their most important problem are significantly more likely to introduce management innovations focusing on cost-savings. This finding adds to prior studies that document a positive effect of CATEF on efficiency (Graziella et al., 2020) and firms' propensity to focus on efficiency (Sena, 2006). We argue that this behavior can be explained by the resource dependence theory (Pfeffer and Salancik, 1978), as it is in line with the notion that firms seek to become less dependent on external parties if they are not in a position of power (i.e., they are unable to obtain financing from their external capital providers). Doing so, our study sheds new light on the ongoing discussion about the effects of financing constraints on firm growth and innovation.

The negative effect of financing constraints on firm growth is well established in the literature (Campello et al., 2010; Carpenter and Petersen, 2002; Cingano et al., 2016). It can partially be attributed to firms' reduced tendency to invest in opportunities with an uncertain pay-off, such as R&D, leading to lower levels of innovation (Hottenrott and Peters, 2012). However, our results show that financing constraints may not always have a negative effect on innovation. CATEF may act as an external pressure that stimulates firms to reduce the capital requirements of their operations, as they seek to become less dependent on their access to external financing. This goal can be accomplished by introducing cost-saving management

innovations. This finding may have gone unnoted thus far, given that the vast majority of innovation literature has focused on technical (i.e. product or process) innovations rather than management innovations (Crossan and Apaydin, 2010). Investments in these innovation outcomes carry a higher level of uncertainty and up-front investments, making them more difficult to finance with external financing. Our study contrasts the few prior findings on the relation between financing constraints and management innovations (Khan et al., 2021; Madrid-Guijarro et al., 2009). These studies, however, have documented management innovations on an aggregate level. Khan et al. (2021) asked respondents whether the firm had introduced new organizational structures or management practices, while Madrid-Guijarro et al. (2009) asked the respondent whether the firm had introduced management innovations, without further explanation. Instead, we focus on management innovations with a cost-saving goal, which have been shown to be impacted differently from management innovations with different goals (e.g., Westphal et al., 1997).

Moreover, not only do our findings show that financing constraints can have a positive effect on cost-saving management innovations, they also show that, although counter-intuitive, a constrained access to external financing may even indirectly benefit firm growth by increasing firms' propensity to introduce cost-saving management innovations. Some firms with CATEF introduce cost-saving management innovations in response to their financing constraints, which they would not have introduced, if they had not been constrained. However, ultimately, firm growth would still be higher if the firm would not have had CATEF, as the positive effect of cost-saving management innovations on growth seems to be smaller (in absolute terms) than the negative direct effect of CATEF on growth.

Yet, not all firms with financing constraints respond by introducing cost-saving management innovations. Moreover, some firms with CATEF would have introduced cost-saving management innovations if they had not been constrained. Therefore, the positive indirect effect of CATEF on firm growth over our whole sample only suppresses 6.85% of the negative total effect of CATEF on firm growth. This effect would be greater if more firms would respond to their CATEF by introducing cost-saving management innovations.

Further, our study provides evidence for the reasoning of Sawang and Unsworth (2011) that innovation adoption in SMEs is driven more strongly by external pressures, compared to large firms. They argue that adopting innovations is relatively more expensive for SMEs, hence why they need "to be pushed". Our findings may be interpreted along this line, as CATEF may be the "external push" that drives the adoption of cost-saving management innovations.

Last, our findings contribute to our knowledge on the performance effects of management innovations, and in particular cost-saving management innovations. While the performance effects of technical innovations (i.e. product or process innovations) are widely documented, only a handful of studies have documented the effects of management innovations (Walker et al., 2015). Our results are in line with these studies (i.e., Corsi et al., 2019; Morone and Testa, 2008; Sapprasert and Clausen, 2012) as they point to a positive effect of management innovations on firm growth. More, this positive effect on revenue growth appears to be economically very significant, as its seems to be more than half the size of the negative effect (in absolute terms) of CATEF on revenue growth.

2.5.2 Limitations and further research opportunities

Although our study clarified the effect of CATEF on cost-saving management innovations and consequently the suppressing effect of such innovations on the negative effect of CATEF on revenue growth, there are promising avenues for further research. As our study was limited to the use of survey data only, follow-up studies could use accounting data to make three improvements. First, researchers could document several accounting-based effects of cost-saving management innovations, such as return on assets, productivity, the evolution of costs of goods sold, or profit. This would allow the testing of further potential suppression effects of cost-saving management innovations as a response to CATEF. Second, the SAFE survey has a rotating panel component, meaning that only some firms are re-surveyed. Due to our limited sample size, our study was limited to studying the impact up to three years after measuring the firm's access to external financing. Using accounting data could allow for more long-term inference. It could be insightful to document whether the suppression effect of cost-saving management innovations fades out, remains constant or increases over time (i.e., financing constraints may then even have a positive effect on firm growth over time). Third, other measures for (revenue) growth could be documented. Our study used an ordinal measure that indicated the average increase in revenue per year over the prior 3 years, and classified respondents in 1 out of 4 categories. Future studies could be more precise by using actual revenue growth measures, as inferred from accounting data or use other growth measures such as total assets or employment growth.

2.5.3 Implications for practice and policy

We find that cost-saving management innovations have a positive effect on firm growth that is more than half the size of the negative effect of CATEF on firm growth. However, only one-

third of SMEs in our sample introduce cost-saving management innovations when perceiving access to external financing as their most important problem. As such, the total negative effect of CATEF on firm growth is only a fraction (i.e., 6.85%) less negative than the direct negative effect of CATEF on firm growth. Indeed, as a selection of SMEs respond to their CATEF by introducing cost-saving management innovations that increase firm growth, the average negative effect of CATEF on firm growth lowers by 6.85%. If more SMEs would respond to their CATEF by introducing cost-saving management innovations, the average negative effect of CATEF on firm growth would decline even more. Policymakers, therefore, may consider promoting cost-saving management innovations among SMEs with CATEF, as our study also shows that this action is attainable for firms with CATEF, who, otherwise, have difficulties financing different growth opportunities. Such innovations may constitute of, among others, outsourcing, just-in-time practices, process automation, predictive maintenance, using open-source software, or even resource bricolage techniques. If more firms with CATEF would respond by introducing capital-saving management innovations, the need for policy that is focused on easing access to external financing is reduced, which could be relevant in an environment of rising interest rates. However, our study is in line with a long list of evidence that constrained access to external financing severely limits SMEs' growth. It is crucial, therefore, that policy makers seek to increase SMEs' access to external financing. Next to the insights for policymakers, the study carries insights for practitioners as well. Our findings show that cost-saving management innovations have a positive effect for all firms, whether or not it has CATEF. Yet, SMEs seem to need an "external push" in order to introduce such an innovation. Hence, managers in firms with and without CATEF alike, may consider whether they can change the way work is organized in order to increase efficiency or reduce costs.

Appendix

Table 2.A1: Number of observations at time of CATEF surveyed per country and wave

Country	Wave 11	Wave 13	Wave 15	Total
Albania	0	5	7	12
Austria	38	22	11	71
Belgium	29	6	9	44
Bulgaria	36	29	22	87
Cyprus	2	5	3	10
Czechia	28	30	6	64
Germany	110	71	55	236
Denmark	34	28	33	95
Estonia	3	2	2	7
Spain	136	79	48	263
Finland	43	22	13	78
France	123	77	44	244
Greece	42	14	10	66
Croatia	9	14	8	31
Hungary	35	40	38	113
Ireland	35	26	17	78
Iceland	3	7	8	18
Italy	193	67	41	301
Lithuania	10	16	17	43
Luxembourg	6	7	5	18
Latvia	4	7	3	14
Montenegro	10	10	6	26
North Macedonia	0	3	3	6
Malta	5	4	3	12
Netherlands	57	23	16	96
Poland	86	134	125	345
Portugal	28	14	6	48
Romania	27	37	37	101
Serbia	0	0	11	11
Sweden	25	24	16	65
Slovenia	10	11	13	34
Slovakia	28	21	13	62
Turkey	0	24	18	42
United Kingdom	60	102	70	232
Total	1,255	981	737	2,973

Table 2.A2: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Cost-saving management innovations	1.00												
2	CATEF	0.08	1.00											
3	Revenue growth	0.06	-0.08	1.00										
4	Internal funds	0.05	-0.06	0.03	1.00									
5	Firm age	0.00	-0.03	-0.11	0.06	1.00								
6	Firm size	0.08	-0.05	0.04	0.22	0.19	1.00							
7	Family ownership	0.01	0.04	0.00	0.05	0.08	0.14	1.00						
8	VC/BA ownership	0.04	0.01	0.00	0.01	-0.02	0.02	-0.08	1.00					
9	Past revenue growth	0.01	0.01	0.11	0.02	-0.01	0.05	0.02	0.04	1.00				
10	Recent revenue evolution	0.06	0.00	0.23	0.03	-0.05	0.09	0.03	-0.01	0.11	1.00			
11	Recent interest expense evolution	-0.06	-0.17	0.04	0.10	0.03	0.15	-0.02	0.00	0.01	0.04	1.00		
12	Recent FTE evolution	0.08	-0.03	0.18	0.06	-0.04	0.11	0.02	0.00	0.10	0.33	0.04	1.00	
13	Export intensity	0.03	0.00	0.01	0.04	-0.01	0.21	0.07	0.05	0.04	0.04	0.02	0.07	1.00

Correlations >0.036 or <-0.036 are significant at the 95% confidence level

Table 2.A3: Effects of different measure of CATEF

VARIABLES	OLS Revenue growth	Probit Cost-saving management innovations
CATEF	-0.116***	0.0587***
	(0.038)	(0.0185)
Cost-saving management innovations	0.099***	
	(0.037)	
Internal funds	0.044	0.0332
	(0.039)	(0.0211)
Firm age	-0.160***	-0.0076
	(0.027)	(0.0144)
Firm size	0.016	0.0216***
	(0.012)	(0.0065)
Family ownership	0.027	-0.0233
	(0.033)	(0.0172)
VC/BA ownership	0.021	0.1829
	(0.217)	(0.1115)
Past revenue growth	0.079***	0.0013
	(0.018)	(0.0091)
Recent revenue evolution	0.190***	0.0285**
	(0.023)	(0.0111)
Recent int. expenses evolution	0.034	-0.0430***
	(0.026)	(0.0130)
Recent FTE evolution	0.130***	0.0412***
	(0.027)	(0.0140)
Export intensity	-0.001	0.0002
	(0.001)	(0.0003)
Country dummies	Yes	Yes
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
R-squared	0.115	
LR Chi2		205.00
Observations	2,973	2,973

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2.A4: KHB decomposition of total effect into direct and indirect effect using different measure of CATEF

	Model 1
Total effect	-0.129***
	(0.050)
Direct effect	-0.136***
	(0.050)
Indirect effect	0.009**
	(0.004)
Observations	2,973
% Suppression effect	-7.03%

Clustered robust standard errors in parentheses
Model controls for all control variables.
*** p<0.01, ** p<0.05, * p<0.1

Chapter 3

Replication study of the article "Financing constraints and SME growth: the suppression effect of cost-saving management innovations" on Belgian SMEs

Abstract

This study is a replication study of "Financing constraints and SME growth: the suppression effect of capital-saving management innovations" (De Blick, Paeleman & Laveren, 2022). We use our own-collected survey data which we triangulated with accounting data, and address the call in the original study for the use of such data in follow-up studies. Replicating the original hypothesized model by relying on our data of 654 Belgian SMEs, the original results are confirmed: SMEs with constrained access to external financing are more likely to introduce capital-saving management innovations, which subsequently positively affect firm growth. Hence, this replication study confirms the positive indirect effect of constrained access to external financing on SME growth through capital-saving management innovations.

Keywords financing constraints; SMEs; management innovation; firm growth

3.1 Introduction

This is a replication study of De Blick et al. (2023), which relied on data from the European "survey on the access to finance of enterprises", or SAFE. While this dataset has several advantages, such as its European-wide character, it lacks accounting data. Therefore, De Blick et al. (2023) called for "follow-up studies [to] use accounting data to make improvements", in order to "document several accounting-based effects of organizational restructurings, such as return on assets, productivity, the evolution of costs of goods sold, or profit" (De Blick et al., 2023, p. 18). We address this call by adding accounting data to our own survey-collected data. This allows us to document the effect of financing constraints and organizational restructurings on the growth of profits (i.e., EBIT), as a robustness check to the original study's focus on the growth of revenues.

We follow the methodology used in the original paper, i.e. probit regression to estimate the likelihood of an organizational restructuring and a mediation analysis to estimate the indirect effect on growth. However, our data allows to measure our dependent variable, firm

growth, as a continuous variable instead of the ordinal nature as in the original study. Hence, we perform OLS regressions instead of ordinal probit regressions to estimate the effect on growth. It follows that the KHB method used in the original study can no longer be applied, as the mediation model now needs to combine a probit regression with an OLS regression – which the KHB cannot do. Instead, we rely on the stata command *medeff* which is able to perform this estimation (Hicks and Tingley 2011) by using link functions as described by Imai et al. (2010a, b, c), to estimate the indirect effect of financing constraints on growth through capital-saving management innovations.

3.2 Theory and hypotheses

As this is a replication study, we summarize the theory section of the original study and list the hypotheses.

The study draws on the resource dependence theory (Pfeffer & Salancik, 1978) to argue that firms with a constrained access to external financing may seek to become less dependent on their capital providers. This is in line with the theory's notion how a constrained access to external resources (e.g., capital) forces organizations to pursue new innovations and new relationships that reduce the firm's dependence on those resources (Pfeffer & Salancik 1978; Sherer & Lee 2002). Hence, so the authors argue, firms with financing constraints are likely to implement actions that may reduce their need for capital, and thus access to external financing (De Blick et al., 2022).

One specific action firms may undertake to reduce their dependence on an external party, is to introduce changes to the organization of its management (Pfeffer & Salancik, 1978). In large firms, Pfeffer and Salancik (1987) argued this would result in "administrative succession" (i.e., CEO turnover). In SMEs, where management and ownership often overlap, De Blick et al. (2023) argued firms who seek to adapt their management in order to reduce dependence on external capital providers may do so through changing the *way* the firm is managed (i.e., instead of *by whom* the firm is managed).

As such, the authors proposed cost-saving management innovation as a potential strategic change action. Management innovations are changes that "alters the way the work of management is performed" is defined as a *management innovation* (Hamel, 2006: 75), and some may be focused specifically on efficiency gains and cost-cutting (Westphal et al., 1997).

De Blick et al. (2023) argued that this goal may be desired by firms with constrained access to external financing, as it allows them to reduce the firm's dependence on external capital. Hence, it is hypothesized:

H1: SMEs with constrained access to external financing are more likely to introduce cost-saving management innovations than unconstrained SMEs.

Given that financing constraints reduce firm growth and firms are hypothesized to respond by introducing cost-saving management innovations, the effect of such innovations on firm growth is of interest.

Management innovations may have a positive effect on firm growth, even more positive than product or marketing innovations (Morone & Testa, 2008). The effect also seems to be stronger for smaller firms (Corsi et al., 2019; Sapprasert & Clausen, 2012), although larger firms are more likely to adopt one (Sapprasert & Clausen, 2012). The authors argued this may hold as well for cost-saving management innovations, which allow the firm to save capital (Musso & Schiavo, 2008). This surplus in financial resources could, then, be allocated towards funding growth opportunities. Moreover, given the lower costs, profits should increase. Hence,

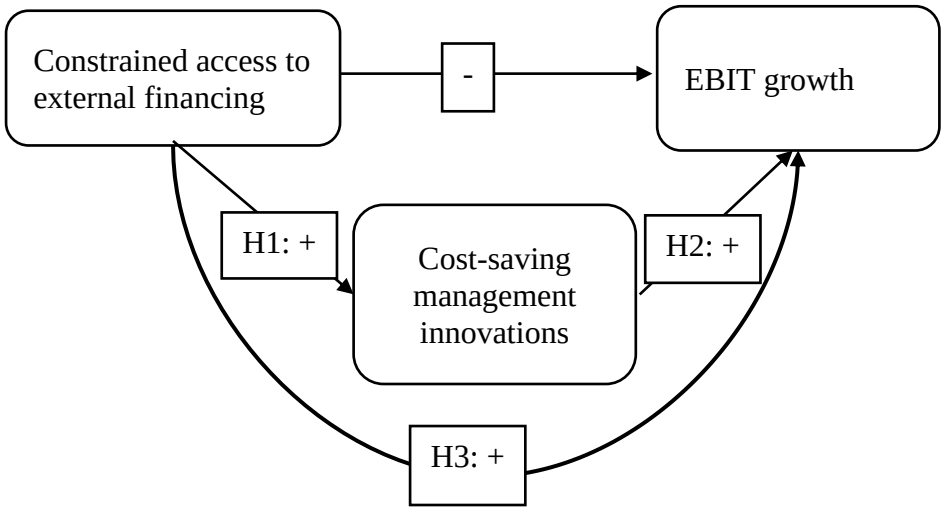
H2: Cost-saving management innovations have a positive impact on EBIT growth.

Given that we hypothesized that (i) SMEs with financing constraints are more likely to introduce a cost-saving management innovation, and that (ii) cost-saving management innovations have a positive effect on EBIT growth, it follows that financing constraints may have a positive indirect effect on EBIT growth. Therefore, SMEs could cope with their financing constraints by improving organizational efficiency by introducing cost-saving management innovations.

H3: Constrained access to external financing has a significant positive indirect effect on EBIT growth through cost-saving management innovations.

The research model for the empirical analyses is graphically represented in Figure 3.1.

Figure 3.1: Direct and indirect effect of constrained access to external financings on EBIT growth



3.3 Data

We collected data by surveying a sample of Belgian private SMEs. The sampling population contained 6,526 SMEs (i.e. firms who employed less than 250 FTE during 2018 and had total assets worth below 43 million euros at the end of 2018). A total of 654 SMEs filled out the questionnaire, resulting in a response rate of 9.9%. We contacted the firms through electronic mail, sending out 2 reminders. T-tests did not reveal any significant differences between early- and late-respondents for the variables of interest, indicating that nonresponse bias should be limited.

Firms registered in Belgium operating with limited liabilities of shareholders are obligated to file their annual accounts. Hence, we combined the survey data with data of the surveyed firms' financial accounts, which is obtained from the Bel-First database of Bureau Van Dijk. Of the 654 SMEs who answered the survey, 493 SMEs reported that they were not a daughter or a subsidiary in a larger group. Of these 493 independent SMEs, all financial data could be matched for 462 SMEs.

Therefore, the model in this replication study includes all control variables from the original study, except time- and country-dummies. Industry-dummies are also not included, as many observations were the only ones in their respective industry category. Moreover, additional control variables, such as resource slack variables, have been added to further improve the model. Table 3.1 gives an overview of the variables used in this replication study.

Table 3.1: summary of variables of interest

Measure	Definition	measured in year
EBIT*	Equal to the relative change in the firm's Earnings Before Interests and Taxes from 2019 to 2020.	2020 compared to 2019
CSMI (cost-saving management innovation)	Equal to 1 if the firm responded "yes" to at least one of the following questions: • "Has the firm *implemented changes in the distribution of titles of leading members of the management team (e.g. changes in function titles, product titles, geographic, or a mixture)* during 2019? • "Has the firm *carried out a considerable change of the company's organization* during 2019?" AND to at least one of the following questions: • "Has the firm introduced *major cost reductions* during 2019?" • "Has the firm *cut down, sold or closed down ineffective businesses* during 2019?"	During 2019
Constrained access to external financing	Equal to 1 if the firm's application was rejected for any of the following financing sources during 2019: informal loan; credit line, credit card or bank overdraft; trade credit; short-term bank loan; long-term bank loan; leasing; factoring; business angel investment; venture capital or private equity investment; government grant.	During 2019
Control variables		
Firm age**	2018 – year of incorporation	2018
Financial slack*	Cash & cash equivalents relative to total assets, industry (NACE 3-digit) median subtracted.	2018
HR slack*	Staff expenses relative to total assets, industry median subtracted	2018
Potential slack*	Equity relative to debt, industry median subtracted	2018
Recoverable slack*	Stock and receivables relative to total assets, industry median subtracted	2018
Employees**	Number of average FTE during the year	2018
Family management	Does the top management team have at least 2 members of the controlling family?	2018
Family ownership	Does one family own more than 50% of the firm's shares?	2018
PE/VC/BA ownership	Does the firm have a private equity firm, a venture capitalist, or a business angel as a shareholder?	2018
Historic EBIT growth*	The total change of the firm's earnings before interests and taxes over the past three years (2015-2018).	2018
EBIT margin*	Earnings before interests and taxes relative to total assets	2018
TMT size**	Number of members in the top management team	2018
BoD	Dummy equal to 1 if the firm has a board of directors	2018

Table 3.2: Descriptive statistics

	full sample, n= 462		No constrained access to ext. fin., n=406		Constrained access to ext. fin., n= 56		Difference (Paired t Test)
	mean	s.d.	mean	s.d.	mean	s.d.	
EBIT growth	0.18	2.44	0.19	2.36	0.09	2.96	0.10
Constrained access to ext. fin.	0.12	0.33	-	-	1.00	-	- 1.00
CSMI	0.12	0.32	0.10	0.30	0.21	0.41	- 0.11*
Firm age	28.31	15.61	28.45	15.46	27.30	16.75	1.14
Financial slack	0.02	0.14	0.02	0.14	0.01	0.11	0.01
HR slack	0.14	0.31	0.15	0.32	0.10	0.22	0.05
Potential slack	0.40	1.45	0.40	1.41	0.40	1.72	0.00
Recoverable slack	0.06	0.21	0.06	0.22	0.02	0.18	0.05
Employees	3.24	0.79	3.26	0.79	3.14	0.80	0.12
Family management	0.44	0.50	0.44	0.50	0.45	0.50	- 0.00
Family ownership	0.66	0.47	0.66	0.48	0.66	0.48	- 0.00
PE/VC/BA ownership	0.11	0.32	0.11	0.31	0.16	0.37	- 0.05
Historic EBIT growth	0.99	4.78	1.02	4.70	0.81	5.40	0.20
TMT size	3.71	1.97	3.70	2.00	3.75	1.73	- 0.05
BoD	0.55	0.50	0.55	0.50	0.57	0.50	- 0.02
EBIT margin	0.08	0.13	0.09	0.13	0.06	0.10	0.03

Descriptives of variables of interest

Table 3.2 describes the mean and standard deviation of the variables included in the models, while also differentiating between constrained and unconstrained SMEs.

The average EBIT growth 2020 to 2019 was 18%, but the standard deviation is very large: 244%. Hence, we winsorize the variable. There does seem to be a strong difference in growth between SMEs without constrained access to external financing (19% average growth) and SMEs with constrained access (9% average growth), although it is insignificant due to the large standard deviation of the measure.

12% of the SMEs in the sample had a constrained access to external financing in 2018, which is smaller than the number in the original study. This could be due to our more selective measure based on actual financing rejections instead of the SME's perception of its access to external financing.

Also 12% of the SMEs in the sample introduced a cost-saving management innovation, which is also less than in the original study. This could also be due to our more selective measure (i.e. firms had to answer "yes" to at least two questions, instead of one such as in the SAFE, to be classified as having completed a CSMI). The paired t-test indicates that this percentage is significantly higher (by 11%) among constrained SMEs.

3.4 Results

Hypothesis 1

Table 3.3 illustrates the average marginal effect of constrained access to external financing on the propensity that the firm completes a cost-saving management innovation.

Table 3.3: Average marginal effect of constrained access to external financing on the propensity to complete a cost-saving management innovation

	Model 1 CSMI	Model 2 CSMI
Constrained access to ext. fin.		0.091**
		(0.037)
Firm age	0.013	0.016
	(0.024)	(0.024)
Financial slack	0.322**	0.326**
	(0.128)	(0.128)
HR slack	0.080*	0.086*
	(0.048)	(0.047)
Potential slack	-0.038**	-0.039**
	(0.018)	(0.017)
Recoverable slack	0.022	0.033
	(0.069)	(0.070)
Employees	-0.021	-0.018
	(0.021)	(0.021)
Family management	-0.026	-0.031
	(0.029)	(0.029)
Family ownership	0.033	0.031
	(0.030)	(0.030)
PE/VC/BA ownership	-0.101	-0.101
	(0.063)	(0.064)
Historic EBIT growth	0.005*	0.005*
	(0.003)	(0.003)
TMT size	0.048*	0.046
	(0.028)	(0.029)
BoD	0.025	0.024
	(0.028)	(0.027)
EBIT margin	-0.406***	-0.395***
	(0.125)	(0.126)
Wald Chi2	29.18	33.86
Observations	462	462

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

SMEs with constrained access to external financing are 9.1% more likely to introduce a cost-saving management innovation (p=0.014), confirming *hypothesis 1*. This is even stronger than

the 6.2% reported in the original study. The results also show that financial slack and HR slack both have a significantly positive effect, while potential slack has a negative effect. At the same time, firms that have showed stronger historic growth and firms with a larger TMT size are more likely to introduce a CSMI, while firms with a better performance (higher EBIT margin) are less likely to do so.

Hypothesis 2

Table 3.4 presents the effect of a cost-saving management innovation on EBIT growth.

We find strong support for *hypothesis 2:* CSMI have a significantly positive effect on EBIT growth. EBIT is expected to increase by 73.3% in the year after the SME completes a cost-saving management innovation. The results also show that constrained access to external financing has a negative total effect on growth of -2.6%, which increases to -10.9% upon inclusion of CSMI in the model – pointing towards a suppression effect. Both effects, however, are not significant. Furthermore, we find that younger SMEs, larger SMEs, and SMEs with family ownership tend to grow faster.

Table 3.4: regression coefficients of constrained access to external financing and capital-saving management innovations on EBIT growth

Estimation method	Model 1 OLS	Model 2 OLS	Model 3 OLS	Model 4 OLS
Dependent variable	EBIT growth	EBIT growth	EBIT growth	EBIT growth
Constrained access to ext. fin.		-0.026		-0.109
		(0.403)		(0.400)
CSMI			0.733**	0.746**
			(0.329)	(0.334)
Firm age	-0.569***	-0.569***	-0.576***	-0.577***
	(0.173)	(0.172)	(0.173)	(0.173)
Financial slack	-0.806	-0.808	-1.018	-1.031
	(1.098)	(1.101)	(1.097)	(1.102)
HR slack	-0.143	-0.144	-0.227	-0.234
	(0.383)	(0.382)	(0.382)	(0.382)
Potential slack	-0.057	-0.057	-0.041	-0.040
	(0.069)	(0.069)	(0.069)	(0.069)
Recoverable slack	0.169	0.166	0.147	0.135
	(0.590)	(0.592)	(0.585)	(0.588)
Employees	0.403**	0.402**	0.421***	0.418***
	(0.156)	(0.156)	(0.157)	(0.157)
Family management	-0.018	-0.018	-0.002	-0.003
	(0.238)	(0.238)	(0.239)	(0.239)
Family ownership	0.410*	0.410*	0.389*	0.389*
	(0.222)	(0.222)	(0.223)	(0.224)
PE/VC/BA ownership	-0.759*	-0.757*	-0.706	-0.699
	(0.458)	(0.457)	(0.456)	(0.455)
Historic EBIT growth	-0.006	-0.006	-0.010	-0.010
	(0.037)	(0.037)	(0.037)	(0.037)
TMT size	-0.145	-0.144	-0.181	-0.179
	(0.198)	(0.200)	(0.200)	(0.202)
BoD	0.299	0.299	0.277	0.278
	(0.235)	(0.235)	(0.236)	(0.236)
EBIT margin	0.711	0.706	0.985	0.969
	(0.780)	(0.773)	(0.794)	(0.788)
R^2	0.048	0.048	0.057	0.057
Observations	462	462	462	462

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Hypothesis 3

Table 3.4 showed that constrained access to external financing has a significantly positive effect on the propensity a firm completes a CSMI. Table 3.4 showed that such CSMI has a significant positive effect on EBIT growth. This indicates that there could be a positive indirect effect of constrained access to external financing on EBIT growth. The significance of this indirect effect is tested using the *medeff* command and displayed in Table 3.5.

Table 3.5: Medeff estimated mediation effect, direct effect, and total effect

Effect	Effect size	90% confidence interval	
Indirect effect	0.0673	0.0004	0.1878
Direct Effect	- 0.1105	- 0.6559	0.4537
Total Effect	- 0.0432	- 0.5953	0.5655
% of Tot Eff mediated	- 0.1192	- 1.6306	1.1829

We find that the indirect positive effect of financing constraints on EBIT growth is significant at a 90% confidence level. In fact, having a constrained access to external financing increases the expected EBIT growth by 6.7% as they increase the propensity a firm implements a CSMI. This positive indirect effect suppresses 11.9% of the total negative effect (i.e. the total negative effect of financing constraints on EBIT growth would be 11.9% larger if firms would not be more likely to introduce a CSMI) of constrained access to external financing on EBIT growth.

3.5 Conclusion

All hypotheses of the original study of De Blick et al. (2023) are confirmed and, thus, hold for EBIT growth next to revenue growth. Constrained access to external financing has a negative effect on SMEs' EBIT growth. However, SMEs become more probable to introduce a CSMI in response to their constrained access to external financing, which has a significant positive effect on EBIT growth. If there would be no positive indirect effect, the total negative effect of constrained access to external financing on growth of current profits before taxes would be 11.9% greater.

Chapter 4

Bundles of slack and SMEs' strategic changes: the role of family ownership

Tristan De Blick, Ine Paeleman, Eddy Laveren

Abstract Do slack resources facilitate or constrain strategic changes? We extend the "bundles of slack" approach and investigate how different bundles of financial slack and human resource (HR) slack relate to strategic changes, and how this relation is influenced by the presence of family majority ownership. We rely on survey responses of 654 private Belgian SMEs to measure 13 different strategic change actions. In line with a synthesis of the slack-as-resources-for-change perspective and the slack-as-buffers perspective, we find that non-family-owned firms who bundle high levels of financial slack with low levels of HR slack undertake the most strategic changes. However, in line with the behavioral agency model, in family-owned firms, this bundle results in the fewest strategic changes. In non-family-owned firms, it is the bundle of low levels of financial slack with low levels of HR slack that results in the fewest strategic changes, having a significantly more negative effect on the number of strategic changes than in family-owned firms. Robustness analyses among family-owned firms show that the effects of the bundles of slack increase or decrease depending on the importance family members attach to socio-emotional wealth dimensions.

Keywords Strategic Change; Slack Resources; Family Firm; SEW

4.1 Introduction

Strategic changes are a fundamental topic in the fields of management and strategy. They can be defined as the changes in the content and scope of a firm's strategy (Herrmann & Nadkarni, 2014), which are generally introduced in response to environmental changes (Kraatz & Zajac, 2001; Zajac & Kraatz, 1993; Zajac & Shortell, 1989). This allows the firm to adopt to either environmental threats or opportunities (Kirtley & O'Mahony, 2020), which may not always improve performance (i.e. Makhija, 2004), but failure to change the strategy may be a guarantee for firm failure (Klammer et al., 2017).

Yet, our understanding of how firm characteristics, as opposed to environmental factors, influence strategic changes is only limited (Müller & Kunisch, 2018). One of the key discussions, even referred to as one of the "fundamental conundrums" in strategic change research (Müller & Kunisch, 2018: 475), is on the role of slack resources, defined as resources present in the firm but not currently used in its operations (Liu et al., 2012; Nohria & Gulati, 1996).

On the one hand, the "slack-as-resources-for-change" (Cheng & Kesner, 1997: 2) perspective suggests that firms with resource slack are more likely to engage in strategic changes given their availability of excess resources for the development of new capabilities (Barker III & Barr, 2002; Barker III & Duhaime, 1997; Cheng & Kesner, 1997), allowing the firm to "take advantage of opportunities afforded by its environment" (Thompson, 1967: 150). On the other hand, the opposing "slack-as-a-buffer" perspective (Cheng & Kesner, 1997: 2) considers slack as a buffer to environmental change (Bourgeois III, 1981; K. Singh, Mahmood, & Natarajan, 2017), as it would reduce the need for firms to respond to such environmental changes (Cyert & March, 1963). Hence, it is argued that higher levels of slack result in lower levels of risk-taking and possibly strategic changes (Kraatz & Zajac, 2001; Latham & Braun, 2008). These contrasting perspectives are the root of a "divergence in views on how slack affects the likelihood that a firm will engage in strategic change" (Bentley & Kehoe, 2020, p. 185). Therefore, we believe that the research question "when do resources constrain strategic change[s], and when do they enable it?" (Müller & Kunisch, 2018, p. 475) is highly relevant, and we seek to provide more clarity on the role of resource slack on strategic changes. To this end, we build on two important insights in the slack literature that have, so far, been overlooked in the strategic change literature.

First, prior strategic change literature has considered the effects of slack resources as a one-dimensional construct. However, considering slack resources as the opposite of resource

constraints may be too simplistic of a view. Indeed, scholars have argued that there exist different types of slack, such as financial and human resource (HR) slack, who differ according to their level of absorptiveness (e.g. Bentley & Kehoe, 2020; Vanacker et al., 2017; Singh, 1986; Voss, Sirdeshmukh, & Voss, 2008). It is important to distinguish between these different types of slack, as they can have different, even opposing, effects (Mishina et al., 2004; Paeleman et al., 2017; Voss et al., 2008).[7] Moreover, one type of slack resource may influence the effect of other types of slack resources (Bentley & Kehoe, 2020; Paeleman & Vanacker, 2015; Voss et al., 2008). Hence, scholars have argued that firms may, instead, be conceived of as "bundles of slack resources, [that] may, for instance, combine constraints in one type of resource with slack in other types of resources" (Paeleman & Vanacker, 2015: 822).

Second, the relevance of either the slack-as-resources-for-change or slack-as-a-buffer perspective depends on organizational goals (George, 2005). It follows that in some firms, slack may function as a buffer, while in others, slack would enable strategic changes. Indeed, Voss et al. (2008) showed that unabsorbed slack resources only lead to more strategic changes when perceived environmental threat is high. Along the same line, Conz et al. (2023) showed that slack resources allowed firms to turn adversity into opportunity in times of crises, but only for firms with an entrepreneurial attitude. As such, only in firms that can "activate slack" (Conz et al., 2023: 1), may slack resources result in strategic changes. This follows the notion that similar resources in similar environments can produce different outcomes, if firms use (i.e., structure, bundle, and leverage) their resources differently (Zott, 2003). Hence, as we aim to untangle the effect of slack resources on strategic changes, we also have to account for how the firm is predisposed to use its slack resources. For long, the debate did not account for the firm's use of slack resources. Instead, it implicitly assumed "that all the firms have the same ownership structure or that different types of shareholders have the same preferences in allocating organizational slack" (Kim et al., 2008: 404). Since, scholars have shown that different types of owners do, indeed, allocate slack resources differently. This has resulted in different effects of slack resources, depending on the firm's ownership, on strategic actions such as investing in R&D (Kim et al., 2008), or responding to environmental demands (Bradley et al., 2011), or even on performance (Vanacker et al., 2013).

[7] We focus on HR and financial slack, as they are the opposing ends of the 'absorptiveness spectrum'. We also control for potential slack (i.e., the extent to which the firm's leverage rate is lower than its industry standard) and recoverable slack (i.e., the extent to which the firm has more receivables and stock to total assets than its industry standard), as both are important types of slack, but lie between HR and financial slack on the absorptiveness spectrum.

Therefore, we study the role of family ownership on the effect of bundles of slack on strategic changes. Family owners follow a peculiar strategic logic, different from non-family owners, in which they attach importance to socio-emotional wealth (SEW) (Gómez-Mejía et al., 2007), next to financial wealth. SEW can be understood as the sum of the family's stock of social, emotional, and affective endowments vested in the firm, such as the opportunity to pass the firm on to future family generations (Zellweger et al., 2012), reputational advantages for the family from being associated with the firm (Deephouse & Jaskiewicz, 2013), and the preservation of family harmony through operating the firm (Cruz, Gomez-Mejia, & Becerra, 2010). As a result of, and depending on, these goals, slack resources are used significantly differently in family-owned firms (Alessandri et al., 2018; De Massis et al., 2018). Moreover, family-owned firms are also a particularly insightful group of firms to test the relevance of the slack-as-a-buffer perspective, as, in order to protect their socio-emotional wealth, family owners care more about firm survival than outperformance (Gómez-Mejía et al., 2018; Xu et al., 2020a). Hence, if the slack-as-a-buffer perspective would be relevant to strategic changes, it should be most pronounced in family-owned firms. Hence, we study the effect of bundles of slack on strategic changes moderated by family ownership, in order to answer the aforementioned research question "when do resources constrain strategic changes, and when do they enable it?" (Müller & Kunisch, 2018, p. 475). Besides, family ownership is not only a potentially insightful group to test the effects of slack resources, but also a very relevant one as it is the most prevalent form of ownership all over the world. Or, as Villalonga & Amit (2020: 241) formulated in their recent review: "family firms matter very much, and to very many people".

In order to test our hypotheses, we collected survey data of 654 Belgian private SMEs during 2020, surveying the firm about the number of strategic changes it had undertaken during 2019. Private SMEs are an interesting population to gain insight in the effects of slack resources on strategic changes for at least two reasons. First, SMEs have less power to influence their environment, and depend increasingly more critically on their ability to adapt to it (Liñan et al., 2020). Second, small firms are characterized by a more limited set of resources, and thus also depend more critically on their ability to leverage their more constrained pool of slack resources. Through the survey, we were able to distinguish whether firms were majority-owned by one family, comprising of 62% of the firms in our sample, and the number of different strategic changes firms had undertaken during 2019. Moreover, the survey data could be linked to the firms' financial statements, which allowed us to calculate firm's bundles of slack in great detail.

This article makes two contributions. First, as argued above, we aim to untangle the fundamental conundrum on the relation between resources and strategic changes. While prior scholars have generally focused on one type of resource slack (i.e. financial slack or HR slack), we aim to extend our knowledge by adhering to the more recently developed "bundles of slack" framework (Paeleman & Vanacker, 2015). Second, we aim to gain insight into the effect of family ownership within this framework, which should extend our knowledge on family-owned firms' use of slack resources. Family involvement can have an important influence on strategic changes (De Massis et al., 2019; Kotlar & Chrisman, 2019), while family-owned firms may also rely on unique resources created through the interactions between family members and the firm (Sirmon & Hitt, 2003). Yet, our understanding of the channels through which family-owned firms differ in their use of non-family specific resources is still limited, hence scholars have argued that "future research examining how family involvement, along with family-owned firms' goals, governance, and resources, drives organizational change is needed" (Kotlar & Chrisman, 2019, p. 30).

4.2 Theoretical background

4.2.1 Slack resources

Slack resources are defined as the "pool of resources in an organisation in excess of the minimum necessary to produce a given level of organisational output" (Nohria and Gulati, 1996: 1246), or "currently unused resources above those necessary to meet immediate business requirements, fund ongoing tasks, or meet explicit goals" (Liu et al., 2014: 49). They, thus, form a cushion of excess resources that can be used in a discretionary way (Bourgeois, 1981), and can be extracted when needed (Daniel et al., 2004).

The literature on slack resources has considered slack resources along several continua. The most fundamental continuum describes possible resource dispositions within the firm, and considers slack resources as the opposite extreme of resource constraints (Dolmans et al., 2014; George, 2005). As such, empirically, this continuum has largely been approached as one-dimensional in nature (i.e. firms are either resource-constrained or have slack resources). Adhering to this one-dimensional view of slack resources, the findings on the role of slack resources for strategic changes have been conflicting.

Scholars have also considered slack resources along a second continuum, which differentiates a multitude of types of slack resources and ranks these different types of slack resources according to their level of absorptiveness (Singh, 1986; Voss et al., 2008).

Unabsorbed types of slack consist of those resources that are most readily available for redeployment within the firm as they are not currently committed (i.e. cash resources or financial slack) (Bourgeois III & Singh, 1983). On the other hand, absorbed types of slack consist of those types of resources that are least readily available for redeployment, as they are currently committed to ongoing operations (i.e. personnel or HR slack). Financial slack and HR slack are the types of slack most frequently studied in this continuum (e.g., Vanacker, Collewaert & Zahra 2017; Bentley & Kehoe, 2020) given that they are opposing ends of this continuum, while they are also both critical to any firm. They each have implications for strategic changes.

4.2.1.1 (Financial and HR) Slack and strategic changes

Financial slack has been argued to limit firms' level of strategic changes by buffering the firm's perceived need for changes. Indeed, a large amount of financial slack provides the firm financial room to bear underperformance for a while when firms would, otherwise, be forced to introduce changes to their strategy (Nohria & Gulati, 1996). Financial slack may also inhibit strategic changes by managers' willingness to change in the absence of environmental pressure. Under the presence of high financial slack, managers may perceive the firm's current situation as more *comfortable* and over-estimate the firm's ability to withstand future environmental threats (Debruyne et al., 2010). Moreover, managers may become more creative when they face resource constraints (Cummiskey & Baer, 2018), for example by relying on bricolage techniques (Garud and Karnoe, 2003), as they have to leverage their existing resources more efficiently (Baker & Nelson, 2005). This may lead them to discover opportunities, that could lead to lucrative strategic changes.

However, at the same time, financial slack may also positively influence strategic changes for several reasons. First, it can be argued that financial slack allows the financing of expenditures and investments related to strategic changes. Financial slack is by definition very unabsorbed, and firms should be able to allocate it towards strategic change-related expenditures or resources without many restrictions. Second, financial slack should allow the firm to induce its employees to stick with the firm during a change in strategy by allowing "payments to members of the coalition in excess of what is required to maintain the organization" (Cyert and March, 1963: 36). Strategic changes may be accompanied by increased uncertainty (Bordia et al., 2004) during which financial slack may provide leeway to, for instance, provide key employees perquisites (e.g., extra financial incentives) to keep them tied to the organization.

Human resources are the pool of knowledge, skills, and abilities available among the employees of an organization (Wright, McMahan, & McWilliams, 1994). HR slack is the amount of human resources in excess of what is required by the firm's ongoing operations (Mishina et al., 2004). HR slack differs from financial slack, among others, because it is largely path-dependent and context-embedded and is tightly tied up with the current organizational operations (Love & Nohria, 2005; Voss et al., 2008). The effect of HR slack–when studied in isolation–on strategic changes has also resulted in conflicting results.

On the one hand, it is argued that as HR slack increases, more employees are locked-in into the current strategy and depend on the current operational conditions continuing, which may constrain the firm's ability to change its strategy (Mishina et al., 2004). Moreover, when there is a higher level of HR slack, an individual employee may be less vital to supporting the firm's ongoing operations, and, therefore, face greater risk of being dismissed (Hallock, 1998). This reduces the incentive for employees to invest their time and effort into increasing their firm-specific knowledge and skills (Wang et al., 2016), which could, otherwise, have led to the creation of strategic change opportunities. Last, HR slack can also be a form of operational inefficiency, resulting in higher costs and lower margins (Paeleman & Vanacker, 2015). This reduces the firm's leeway to hire new employees, for example those who are more familiar with particular strategic changes. Hence, introducing strategic changes driven by the acquisition of new talent, may be constrained by the presence of high levels of HR slack.

On the other hand, HR slack may also increase the level of strategic changes. High levels of HR slack allow employees to not only focus on the firm's ongoing operations, but also to scan the firm's environment (Haveman, 1992), which may lead to the discovery of strategic opportunities or threats. Moreover, HR slack may also be delegated to the development and enactment of new capabilities needed to exploit these strategic opportunities (Mishina et al., 2004; Welbourne, Neck, & Meyer, 1999).

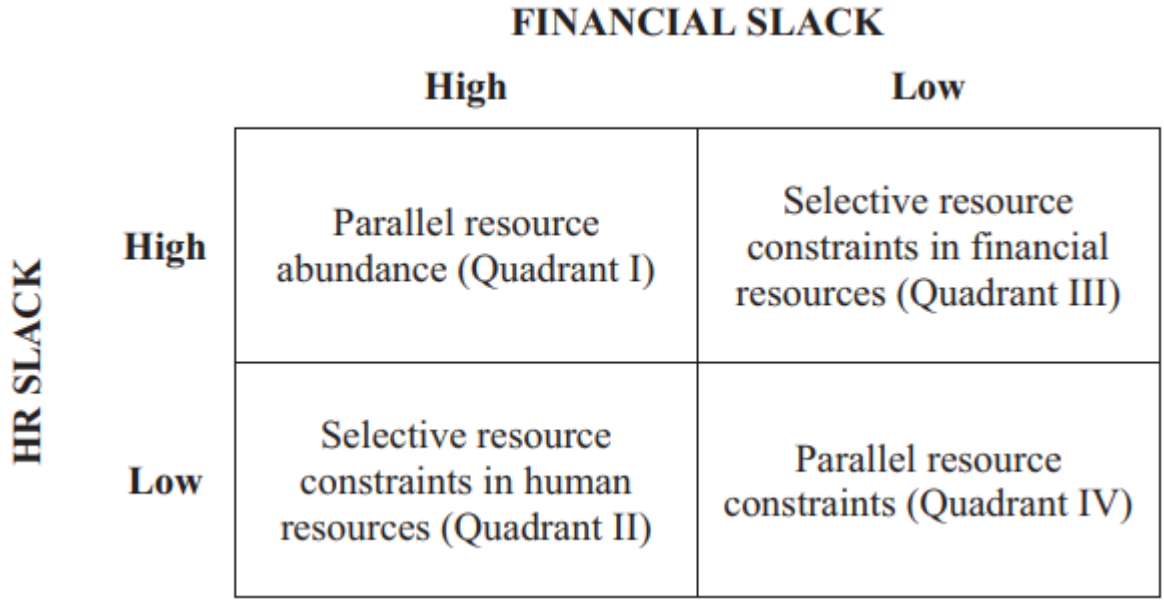
4.2.1.2 Bundles of slack

More recently, scholars have found that one type of slack resource can influence the effect of another type of slack resource (Bentley & Kehoe, 2020; Paeleman & Vanacker, 2015; Voss et al., 2008). Evaluating the effect of slack resources as isolated resources, may be insufficient, as their effect may depend on the combinations with another type of slack resource. As such, in line with the resource based view of firms as heterogeneous bundles of resources (Barney, 1991; Wernerfelt, 1984), it is argued that firms should be conceived of as "bundles of slack

resources, [that] may, for instance, combine constraints in one type of resource with slack in other types of resources" (Paeleman & Vanacker, 2015: 822).

As such, one group of firms may dispose of parallel resource abundance, having high levels of both financial and HR slack (quadrant I). Another group of firms may, on the contrary, deal with parallel resource constraints, having both low levels of financial and low levels of HR slack (quadrant IV). However, even other firms may have more selective resource constraints, as they have low levels of slack in one resource but high levels of slack in another. These selective constraints extend the prior perspective of "an intermediate level of slack" (Nohria and Gulati, 1997, p. 603). The presence of selective resource constraints can be explained by the finding that correlations among different types of slack tend to be low (Mishina et al., 2004; Voss et al., 2008). They are an extension on the prior perspective of "intermediate level[s] of slack" (Nohria and Gulati, 1997, p. 603). Firms with such selective resource constraints can, then, be subdivided into a group of firms with low levels of financial slack combined with high levels of HR slack (quadrant II) and a group of firms with high levels of financial slack and low levels of HR slack (quadrant III). The different combinations (i.e., quadrants) are graphically visualized in Figure 4.1 (adopted from Paeleman & Vanacker, 2015: 822).

Figure 4.1 (adopted from Paeleman & Vanacker, 2015: 822): bundles of slack



4.2.2 Importance of organizational goals in understanding the effect of slack resources

Studying slack resources as isolated resources instead of bundles, may not be the only reason why prior findings on slack resources have been conflicting. Indeed, it has long been argued that "researchers' lack of attention to the environment in which managers allocate and use slack resources" is an important source of conflicting results (Vanacker et al., 2017: 1306). More specifically, a firm's goals is a crucial factor that influences the eventual use of slack resources, and increasingly so (Gavetti et al., 2012).

This also appears to be the case in the context of linking slack resources to strategic changes. Prior studies on the relation between slack resources and strategic changes have considered a broad range of organizations, such as universities (Kraatz & Zajac, 2001), publicly traded firms (Barker III & Duhaime, 1997), or new ventures (Brinckmann et al., 2019). Obviously, these organizations have different organizational goals, which may be one reason why these studies have produced conflicting results. Indeed, George (2005: 661) even defined slack as "potentially utilizable resources that can be diverted or redeployed for the achievement of organizational goals". Hence, in response, we integrate organizational goals in our study. We do so by distinguishing family-owned from non-family-owned firms.

4.2.2.1 Family ownership and slack resources

Family ownership is a dominant form of firm ownership all over the world (Astrachan & Shanker, 2003). While there is strong heterogeneity among family firms (De Massis et al., 2019), on average, family-owned firms tend to exhibit substantial differences with regards to strategic changes compared to non-family owned firms (Kotlar & Chrisman, 2019). Importantly, this particular family-oriented behavior is, at least in part, due to the difference in organizational goals as family business owners attach importance to SEW next to financial goals (Gómez-Mejía et al., 2007).

SEW represents the unique nonfinancial benefits that family owners derive from their businesses. It is described as the emotional investment a family owner has in their company (Gomez-Mejia et al., 2011). This concept includes aspects like maintaining control across generations, upholding the family's reputation, fostering benevolent family relationships, and having a profound emotional connection to the business (Berrone et al., 2012). This is different from the nonfinancial aspirations of managers in nonfamily firms, which might involve ambitions like expanding their domain, fulfilling personal ego needs, and exerting power (Chatterjee & Hambrick, 2007; Finkelstein, 1992). While managers in nonfamily businesses might appreciate nonmonetary benefits (Chatterjee & Hambrick, 2007), their contractual ties

to the company can be terminated, making them less attached to any specific firm. On the other hand, the SEW objectives of family owners are deeply rooted in the family business. These owners often think long-term, considering the next generations (Zellweger et al., 2012). Unlike nonfamily managers who primarily aim to enhance their own reputation and influence, family owners prioritize the collective well-being of the family unit (Deephouse & Jaskiewicz, 2013). In essence, the nonfinancial objectives of family firm owners differ from nonfamily firm owners due to their unique connection to the firm, long-term perspective, and family group focus (for a review, see Gomez-Mejia et al., 2011). Note that while majority family ownership does not imply that the owning family is seeking SEW goals, majority ownership means that they do have ability to pursue these goals if they would indeed seek them (Chrisman et al., 2012).

What makes family ownership as insightful to study the role of slack resources, is their strategic decision making process which considers gains and losses to their SEW. This consideration results in a particular form of loss-aversion, described by the behavioural agency model (Wiseman & Gomez-Mejia, 1998). The model departs from the insight that decision makers use their current situation as the reference point to determine the potential effects (i.e., gains or losses) of possible strategic actions (Kahneman and Tversky, 1979). Moreover, decision makers are loss-averse, meaning that they prefer to avoid a potential loss, even if by doing so they miss the opportunity for a potentially greater gain. Applying this insight to family firms, the behavioural agency argues that the family owners' reference point is the accumulated level of SEW. As such, "family principals are loss averse with respect to socioemotional wealth, which is reflected in the strategic choices they make" (Gomez-Mejia et al., 2011: 666). This makes family-owned firms a potentially very insightful control group to test the effect of slack resources on strategic change, as it allows to test the extent to which the "slack-as-a-buffer" perspective holds: in loss-averse firms, such as family-owned firms, this function of slack should be significantly more effective and influential for strategic decision making.

Indeed, prior studies do show that family-owned firms differ in their use of slack resources. More specifically, in line with the behavioural agency model, "higher levels of slack appear to promote conservative behaviors that preserve the status quo" (Alessandri et al., 2017: 55). For example, Gomez-Mejia et al. (2018) show that in family-controlled firms, an increase in financial slack generates performance satisfaction, which discourages the firm's decision-makers to pursue growth opportunities through acquisitions. This effect, however, did not hold for absorbed slack resources. Along the same line, Alessandri et al. (2017) showed that both the presence of available and recoverable slack, reduced the extent to which family-owned

firms internationalized, while Xu et al. (2020) showed that financial slack reduces both the breadth and depth of family-owned firms' internationalization efforts. Moreover, slack resources seem to have a buffering effect in family-owned firms for other strategic actions besides acquisitions and internationalization efforts. For example, Allison et al. (2014: 31) conclude that "when slack becomes excessive, rather than investing in poor innovation projects, family firms may employ some of these resources in the pursuit of noneconomic goals".

4.3 Hypotheses

It has been posited that the nexus between a singular form of slack and firm behavior exhibits an inverted U-shaped trajectory (Nohria & Gulati, 1997). This is premised on the notion that minimal slack can stymie strategic decision-making, while an excess can engender inefficiencies, as elucidated by Tan and Peng (2003). Advancing this discourse, the conceptual framework of "firms as bundles of slack" posits that optimal performance is achieved when firms judiciously amalgamate resource slack in one domain with stringent constraints in another (Paeleman & Vanacker, 2015).

4.3.1 Bundles of slack and strategic changes in non-family-owned firms

Between the two bundles of selective resource constraints, Paeleman & Vanacker (2015) showed that the combination of high levels of financial slack with low levels of HR slack results in the highest performance. We believe this should also hold for strategic changes. A constrained level of HR slack prevents the firm from having too many employees who are locked-in into the current strategy and depend on the current operational conditions continuing (Mishina et al., 2004). Besides, given that there are fewer employees, each employee should feel more vital to the firm and perceive less dismissal risk (Hallock, 1998). This increases the incentive for employees to invest their time and effort into the firm and acquire new skills and competencies (Wang et al., 2016). In essence, not only is there no constraining factor of having too many employees depending on the current strategy, the firm's employees should also be motivated to invest their time and effort into strategic changes. This should be stimulated by the presence of financial slack. For example, Bentley & Kehoe (2020) showed that financial slack is used during a period of strategic changes to invest in human capital development, so as to make the firm's employees fit for the new strategy. Also, if this would not be possible, given the unabsorbed nature of financial slack, it allows the firm to acquire potentially missing

assets or employees needed for the enactment of the new strategy. Moreover, it also allows the current firm members to undertake slack search, allocating financial resources towards experimental projects that would otherwise not have been approved (Cyert and March, 1963; Greve, 2003; Nohria and Gulati, 1996). Therefore, we hypothesize:

Hypothesis 1: In non-family-owned firms, the level of strategic changes will be higher when the firm bundles high levels of financial slack with low levels of HR slack (i.e., Quadrant II) than in any other bundle.

Among both parallel-bundles, we argue that the parallel resource constraints (Quadrant IV; i.e. low levels of financial slack and low levels of HR slack) will result in the lowest levels of strategic changes.

When the amount of resources in the firm gets too limited, such as with parallel resource constraints, not all firm members may obtain sufficient resources to fulfill their interests. Such a situation may leave the firm in an "unresolved conflict" in which each firm member is occupied with the allocation of scarce resources towards their interests (Cyert & March, 1963, p. 215). Not only is the firm's management pre-occupied with this unresolved conflict, it also has difficulties responding to internal and external shocks as it does not have any slack resources to allocate towards potential disruptions. Ultimately, parallel resource constraints can, then, result in a "resource constraints trap" (Paeleman & Vanacker, 2015, p. 824). Here, firm members become so focused on making do with their constrained resources that they no longer focus on identifying new opportunities or strategic-decision making (Patzelt & Shepherd, 2009). Hence, we argue that:

Hypothesis 2: In non-family-owned firms, the level of strategic changes will be lower when the firm bundles low levels of financial slack with low levels of HR slack (i.e., Quadrant IV) than in any other bundle.

4.3.2 Bundles of slack and strategic changes in family-owned firms

As discussed above, the role that slack resources play in a firm depends to an important extent on the firm's goals (George, 2005). Goals that differ significantly in family-owned firms from non-family-owned firms. We believe this has several implications for the role of slack resources for strategic changes in family-owned firms.

For family-owned firms, we don't expect parallel resource constraints to have as a negative effect on strategic changes as it has for non-family-owned firms. If family-owned firms experience parallel resource constraints, they should be more willing to undertake

strategic changes, as the firm is vulnerable to internal and external disruptions. At the same time, family-owned firms should also be less likely to get caught in a "resource constraints trap" that would make it unable to find the resources necessary to allocate to strategic change activities. Family-owned firms have a more intimate relation with their stakeholders as this helps them preserve and enhance socio-emotional wealth (Cennamo et al., 2012), even when no economic interests are served in doing so (Cennamo et al., 2009). For example, family owners behave more often than non-family owners as stewards of the firm, focusing on the continuity of the business and nurturing a community of employees (Miller, Le Breton-Miller, & Scholnick, 2008). Non-family employees are often more strongly embedded within the family-owned firm as they not only develop a link to the firm itself, but also to the family (Milton, 2008). Non-family members may even consider themselves to be members of a "pseudo-family" (Duran et al., 2016). A stronger embeddedness can result in stronger affection and loyalty towards the firm (Pittino et al., 2016). This should make non-family employees more willing to put aside their own interests in times of parallel resource constraints and sacrifice labor in favor of the good of the company. At the same time, family members themselves are also more willing to deny personal interests and sacrifice their labor when needed (Ward, 2006). Another example is the higher willingness of family owners to sacrifice their own economic interests, and inject capital (i.e. family fortunes) back into the business when needed (Miller & Le Breton-Miller, 2005). Or, along the same line, trade partners of family-owned firms may be more willing to extend credit to the family-owned firm (Amoako et al., 2021). Hence, we hypothesize:

Hypothesis 3: The level of strategic changes will be less negatively impacted by parallel resource constraints (i.e., Quadrant IV) in family-owned firms than in non-family-firms.

At the same time, in family-owned firms, high performance is often not the main goal. Instead, it is the protection of the family owners' SEW, next to meeting financial goals, that is also an important goal. Family owners are willing to forego the opportunity of short-term financial outperformance, if it means that they would have to accept a greater risk to their current level of SEW (Gomez-Mejia et al., 2011).

As a result, family owners seek to use their slack resources to increase the firm's survival chances, instead of boosting performance. This is reflected, among others, in strategic actions such as M&A behavior (e.g., Gomez-Mejia et al., 2018), internationalization efforts (e.g., Alessandri et al., 2017; Xu et al., 2020), or innovation investments (e.g., Allison et al., 2014). As such, given the high-risk nature of strategic change, it should follow that family-

owned-firms use their slack resources in such a way as to *prevent* the firm from *having to* change its strategy. As long as performance is sufficient, family firms do not seek extra risks to their SEW in exchange for a potential benefit in the firm's financial performance. Therefore, in contrast to non-family-owned firms, we believe that selective resource constraints lead to the *lowest* levels of strategic changes in family-owned firms. Having constraints in one type of resource means that the firm is still able to detect organizational changes, and potential threats. Having slack in another type of resource, on the other hand, buffers the firm – at least temporarily – from these threats.

This should be most distinct for the bundle of high levels of financial slack with low levels of HR slack (Quadrant II), for at least two reasons. First, financial slack is a better buffer for firm survival than HR slack. Financial slack can be used to cover a temporary negative cashflow, contrary to HR slack, which even results in higher employee expenses. Second, building on the previous argument, HR slack is costly. It can even be seen as a form of labor inefficiency (Mishina et al., 2004). Having low levels of HR slack may increase the firm's profit margins, and, thus, reduce its vulnerability to external shocks. Third, with low levels of HR slack, no strategic opportunities are discovered by employees who scan the environment. Hence, we hypothesize:

Hypothesis 4: In family-owned firms, the level of strategic changes will be lower when the firm bundles high levels of financial slack with low levels of HR slack (i.e., Quadrant II) than in any other bundle.

4.4 Methodology

4.4.1 Data

We collected data by surveying a sample of 5,706 Belgian private SMEs, according to the definition of the European Commission (2021) (i.e. firms who employed between 9 and 250 FTE during 2018 and had total assets worth below 43 million euros at the end of 2018). A total of 654 SMEs filled out the questionnaire by October 2020, resulting in a response rate of 11.5%. We contacted members of the top-management team at each firm through electronic mail, sending out 2 reminders over a 3-week span. Given that we surveyed small firms, members of the top-management team should all be aware of the strategic decisions made in the firm. T-tests did not reveal any significant differences between early- and late-respondents for the variables of interest, indicating that nonresponse bias should be limited.

Firms registered in Belgium operating with limited liabilities of shareholders are obligated to file their annual accounts. This allowed us to combine the survey data with data of the surveyed firms' financial accounts, which is obtained from the Bel-First database of Bureau Van Dijk[8]. Moreover, in order to measure firms' levels of slack, we also obtained data on the financial statements of all private Belgian SMEs at the end of 2018. This allowed us to calculated the industry (NACE 3-digits) medians for a range of financial ratios, which function as benchmarks for the calculation of our slack measures.

As such, we surveyed the respondent during 2020 about the strategic changes introduced by the firm during 2019, to which we added data on the firm's financial accounts at the end of 2018 (end of financial year). This gives us the opportunity to estimate the effects of firms' bundles of slack at the beginning of 2019, on the number of strategic changes introduced during 2019.

4.4.1.1 Dependent variable

We follow prior scholars and adhere to an agnostic measure of strategic changes (Brunninge, Nordqvist, & Wiklund, 2007; Herrmann & Nadkarni, 2014; Karaevli & Zajac, 2013). Given our focus on SMEs, we follow the measure developed for measuring strategic changes in SMEs by Brunninge et al. (2007). This is a composite index of 13 different strategic changes, so that the score is equal to the number of introduced changes during 2019. In order for the index to be agnostic to any one type of strategic change, the 13 items cover a wide range of activities: (a) conscious staff reductions; (b) major cost reductions; (c) cutting down, selling or closing down ineffective businesses; (d) introducing more sophisticated cost control systems; (e) starting doing business with a country the company had previously not done business with; (f) starting business in a new place within Belgium; (g) starting marketing oneself in a new way; (h) carrying out a considerable change of the company's organization; (i) carrying out a considerable change in the company's internal operations; (j) introducing an important new product or service or in any other way substantially changing offerings to customers; (k) commencing the development of a new important product, service or similar, which has not yet been introduced; (l) carrying out measures in advance that the company otherwise would

[8] Bureau van Dijk (BvD) is one of Europe's leading electronic publishers of business information, including financial information for all Belgian firms. Belgian disclosure requirements require private firms to publish annual accounting information. BvD collects this information from a variety of sources, such as official registers and regulatory bodies (e.g., National Bank in Belgium), and harmonizes the financial accounts to allow accurate comparisons.

have been forced to do sooner or later; and (m) carrying out changes particularly in order to get ahead of competitors. The Cronbach's Alpha of the scale was 0.70 - close to the 0.75 originally reported by Brunninge et al. (2007) and sufficiently high for the 13 items to be summed to an index (Peterson, 1994) – which indicates that firms do indeed change along several dimensions simultaneously.

4.4.1.2 Independent variables

We follow the "bundles of slack" framework developed by Paeleman and Vanacker (2015). We measure financial and HR slack in 2018. Then, we categorize firms in our sample along the 4 quadrants based on their levels of financial and HR slack. *Financial slack* is measured in two steps. First, we calculate the amount of cash and cash equivalents available within a firm scaled by total assets. We also calculate this ratio for each Belgian SME in the same industry (NACE 3-digit) using the Belfirst database of Bureau Van Dijk. Second, the amount of financial slack is measured as the firm's cash ratio minus the industry median cash ratio. This two-step approach is consistent with prior research which has defined financial slack as excess cash resources, relative to industry norms (e.g. Bentley & Kehoe, 2020; Bromiley, 1991; George, 2005.

We follow a similar two-step approach to measure *HR slack* . First, we calculate the ratio employment costs relative to total assets. We also calculate this ratio for each Belgian SME in the same industry (NACE 3-digit) using the Belfirst data. Second, the amount of HR slack is measures as the firm's employment cost ratio minus the industry median employment cost ratio (NACE 3-digit). The use of employment costs capture better the quantity and quality of human resources, compared to the number of employees (Vanacker, Collewaert, & Paeleman, 2013). Moreover, as Mishina et al. (2004) argue, HR slack can be seen as the inverse of productivity or 'generated' slack, which is often measured as sales/total employees (e.g., Chakravarthy, 1986; Greenley and Oktemgil, 1998).

Finally, we assign firms to quadrants based on their levels of financial and HR slack. Firms are categorized as having a 'low level' ('high level') of a type of slack if its level of slack is below (above) the industry median. As such, firms are categorized in 4 quadrants.

4.4.1.3 Moderating variable

While there is no widely accepted common operationalization of what constitutes a family firm, ownership is not only a common feature in most measurement approaches, it is also most

related to both the long-term view and family-centered focus that are characteristic of family firms (Daspit et al., 2021). In line with prior scholars, we define a family-owned firm as a firm in which members of the family hold more than 50% of shares (Gallo & Sveen, 1991; Gottschalck, Guenther, & Kellermanns, 2020). Therefore, we applied a dichotomous variable coded 0 for "non-family-owned firm" and 1 for "family-owned firm."

4.4.1.4 Control variables

We include several control variables, all measured in 2018, which have been shown to affect strategic change, or the use of slack resources. We follow prior slack scholars (i.e. Vanacker et al., 2017; Paeleman et al., 2023) and control for *potential slack* and *recoverable slack*, two types of slack which are less absorbed than HR slack, but more absorbed than financial slack. Potential slack is measured as the equity-to-debt ratio, adjusted by subtracting the median ratio of all firms in the same industry (NACE 3-digit) as the focal firm (Bromiley, 1991; George, 2005; Vanacker et al., 2017). Recoverable slack is measured as the ratio of inventories and account receivables to total assets, from which the industry median (NACE 3-digit) is subtracted (Paeleman & Vanacker, 2015; Vanacker et al., 2017).

Larger and older firms have a more strongly entrenched strategy and face more adversity when seeking a change in strategy (Boeker, 1997). We control for *firm age*, as the natural logarithm of the number of years since incorporation, and *firm size*, as the natural logarithm of total assets. Firms with more growth ambition, initiate more strategic changes (Wang et al., 2021). Therefore, we include the *intangible assets ratio*, defined as the ratio of intangible assets to total assets, as it is used as a measure of firms growth potential[9] (Villalonga, 2004). Strong past performance reinforces the conviction in the current strategy, while weak performance creates a motivation to change (Barker III & Barr, 2002; Barker III & Duhaime, 1997; Greve, 1998). We include *EBITDA/total assets* as a measure of performance (Paeleman & Vanacker, 2015). Firms that are part of a group (and are not the mother), may not fully be responsible for their strategic decisions and may also possibly rely on funds or employees supplied by the group. Hence, we include the variable *daughter*, which is a binary variable equal to 1 if there is a single operating company which owns more than 50% of the firm's shares. Note that it is possible that a firm is both a daughter company and has majority family

[9] Note that American GAAP accounting (based on which the original study of Villalonga proposed the measure) differs from Belgian accounting, which has implications for the activation of intangibles on the balance sheet. The measure, however, remains relevant in a Belgian context given that Belgian companies can also activate costs as intangible assets.

ownership, as it may be that the mother company is majority owned by one single family. Further, since there may be geographic or cultural differences in strategic decision making, we include two dummy variables that indicate whether the firm's headquarters are located in either *Brussels* or in *Wallonia*, as opposed to *Flanders*, which are the 3 regions in Belgium. In Belgium, limited liability firms can choose among several legal forms but BVBAs are by far the most common legal form. They face lower equity requirements than NV limited liability firms, can only issue registered sharers, which can also not be publicly issued and can only be transferred after approval of the other shareholders. We include a dummy variable *bvba* that equals one when a firm is founded as a BVBA limited liability firm, and zero otherwise. Our final control variable are *industry dummies*, based on the 2-digit NACE codes. [10]

4.4.2 Estimation method

As the dependent variable is continuous, we estimate our results using OLS regression models. To reduce endogeneity issues, there is a one-year time lag between the measurement of our dependent variable, strategic change, and the measurement of our independent variables in all models. Using a time lag and running OLS regression models are in line with prior scholars did (i.e. Brunninge et al., 2007; Herrmann & Nadkarni, 2014; Karaevli & Zajac, 2013).

4.5 Results

4.5.1 Descriptive statistics

Table I provides an overview of the descriptives and correlations of the (winsorized) variables used in our models. We winsorize variables that are calculated as a ratio, to reduce the potential impact of outliers. Ratios can result in very large extremes, when the denominator happens to be very small. During 2019, firms undertook on average 2.28 different strategic changes. The firms in our sample have, on average, a higher cash ratio and a higher employment costs to total assets ratio than their respective industry medians, as the average levels of financial slack and HR slack are both positive. The same holds for potential slack and recoverable slack, indicating that the firms in our sample have, on average, a lower debt ratio than their respective industry median and higher inventory levels.

[10] Results are robust to 3-digit NACE codes. Some observations are the only observation in their respective industry following the 3-digit NACE subdivision. Hence, to prevent overfitting, we categorize the observations along the more broad 2-digit NACE industries.

The average firm age is 29 years, while firms have on average 8.7 million euros in assets. The largest firm has total assets of 41.3 million euros, the smallest firm only 159 thousand euros. The average intangible assets ratio is 0.02, and the average EBITDA to total assets ratio is 14%, ranging from -20% to 61%. 57% of firms are majority-owned by another company and are, thus, daughter firms. 4% of the firms in the sample have their headquarters located in Brussels, compared to 14% in Wallonia. Three quarters of the firms in our sample are, thus, located in Flanders. 34% of the firms in our sample are a limited liability company. Finally, 62% of the firms in our sample are family-owned firms.

Table 4.1 also presents the correlations between the different measures. Strategic changes are significantly negatively correlated to financial slack and potential slack, but significantly positively correlated to HR slack. Larger firms conduct more strategic changes, as size is significantly positively correlated with the number of strategic changes. This holds as well for the intangible assets ratio, indicating that firms with more growth potential introduce more strategic changes. On the other hand, firms with better performance (i.e., higher EBITDA/total assets ratio) and operating under limited liability, perform less strategic changes.

Table 4.1: descriptive statistics and correlations

	Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Strategic change	2.28	2.29	0.00	12.00	1.00												
2	Financial slack[a]	0.03	0.13	-0.23	0.58	**-0.09**	1.00											
3	HR slack[a]	0.04	0.32	-0.61	1.48	**0.08**	-0.04	1.00										
4	Potential slack[a]	0.01	0.22	-0.52	0.56	**-0.12**	**0.39**	**-0.20**	1.00									
5	Recoverable slack[a]	0.03	0.20	-0.44	0.47	0.04	**-0.39**	**0.21**	**-0.11**	1.00								
6	Firm age[a]	29.1	16.1	0	93	0.03	0.05	**-0.12**	**0.22**	-0.04	1.00							
7	Total assets (thousandths)[a]	8702	8868	159	4128 7	**0.08**	-0.04	**-0.31**	0.07	**-0.13**	**0.23**	1.00						
8	Intangible as. ratio[a]	0.02	0.05	0.00	0.37	**0.12**	**-0.14**	-0.02	**-0.12**	**-0.12**	**-0.14**	-0.05	1.00					
9	EBITDA/total assets[a]	0.14	0.13	-0.20	0.61	**-0.14**	**0.23**	0.04	**0.26**	**-0.09**	**-0.09**	**-0.16**	0.00	1.00				
10	Daughter	0.57	0.50	0.00	1.00	0.01	0.02	-0.01	0.03	**0.09**	**0.13**	**0.18**	**0.08**	-0.05	1.00			
11	Brussels HQ	0.04	0.20	0.00	1.00	0.03	0.00	0.05	-0.05	-0.02	0.07	-0.04	0.02	-0.05	0.02	1.00		
12	Wallonia HQ	0.14	0.35	0.00	1.00	-0.05	-0.01	-0.02	-0.03	0.01	-0.01	0.03	**0.09**	0.00	-0.06	**-0.09**	1.00	
13	Limited liability	0.34	0.47	0.00	1.00	**-0.12**	0.00	0.13	**-0.10**	0.01	**-0.30**	**-0.37**	**-0.09**	**0.14**	**-0.25**	-0.04	-0.06	1.00
14	Family-owned	0.62	0.49	0	1	0.02	0.01	-0.04	0.03	-0.04	**0.12**	0.03	**-0.10**	**-0.06**	**-0.09**	-0.04	-0.05	0.03

Number of observations= 654. Correlations above |0.077| are significant at $p<0.05$; [a]Winsorized at 1%.

Table 4.2 provides greater insight into the makeup of the four different quadrants, and their distribution among family-owned and non-family-owned firms.

132 firms are categorized in Quadrant I (high financial and HR slack), 170 in Quadrant II (high financial slack and low HR slack), 170 in Quadrant III (low financial slack, high HR slack) and, finally, 172 firms in Quadrant IV (low financial slack and low HR slack). As such, our sample is spread-out quite evenly over the 4 quadrants. This shows the relevance of treating firms as bundles of slack.

Further, we find that the oldest firms are the family-owned firms in Quadrant II, while the largest firms are the family-owned firms in Quadrant IV. The firms with the highest intangible assets ratio are the non-family-owned firms in Quadrant III, while the non-family-owned firms in Quadrant I have the highest EBITDA/total assets ratio. Finally, the highest proportion of firms operating as a limited liability company are found among the family-owned firms in Quadrant I. In family-owned firms, the quadrant in which firms introduce the highest number of strategic changes, is Quadrant III (2.65), while Quadrant II results in the lowest average number of strategic changes (1.85). For non-family-owned firms, however, Quadrant II results in the highest number of strategic changes introduced (2.76) and Quadrant IV the fewest (1.68).

Table 4.2: Descriptive statistics of the different bundles of slack resources

		Financial slack: High				Financial slack: Low				
		Quadrant I				Quadrant III				
		Family owned (N=82)		Non-family owned (N=50)			Family owned (N=101)		Non-family owned (N=69)	
		Mean	SD	Mean	SD		Mean	SD	Mean	SD
HR slack: High	Strategic change	2.38	2.40	2.04	2.06	Strategic change	2.65	2.66	2.43	2.39
	Financial slack[a]	0.10	0.10	0.14	0.14	Financial slack[a]	-0.06	0.05	-0.06	0.04
	HR slack[a]	0.30	0.38	0.28	0.36	HR slack[a]	0.21	0.28	0.27	0.31
	Potential slack[a]	0.01	0.22	0.02	0.21	Potential slack[a]	-0.09	0.19	-0.07	0.19
	Recoverable slack[a]	0.02	0.19	-0.01	0.17	Recoverable slack[a]	0.10	0.19	0.12	0.17
	Firm age[a]	28.67	14.04	26.88	17.31	Firm age[a]	30.13	16.96	25.83	18.03
	Total assets[a]	5221	6210	5285	7084	Total assets[a]	6961	8043	6500	6323
	Intangible assets ratio[a]	0.01	0.03	0.01	0.04	Intangible assets ratio[a]	0.02	0.05	0.04	0.08
	EBITDA/total assets[a]	0.15	0.15	0.22	0.15	EBITDA/total assets[a]	0.11	0.13	0.13	0.14
	Daughter	0.59	0.50	0.58	0.50	Daughter	0.56	0.50	0.64	0.48
	Brussels HQ	0.02	0.16	0.06	0.24	Brussels HQ	0.03	0.17	0.09	0.28
	Wallonia HQ	0.12	0.33	0.20	0.40	Wallonia HQ	0.14	0.35	0.16	0.37
	Limited liability	0.41	0.50	0.40	0.49	Limited liability	0.36	0.48	0.36	0.48
		Quadrant II				Quadrant IV				
		Family owned (N=111)		Non-family owned (N=59)			Family owned (N=113)		Non-family owned (N=69)	
		Mean	SD	Mean	SD		Mean	SD	Mean	SD
HR slack: Low	Strategic change	1.85	2.00	2.76	2.53	Strategic change	2.42	2.33	1.68	1.48
	Financial slack[a]	0.13	0.13	0.15	0.14	Financial slack[a]	-0.06	0.04	-0.08	0.05
	HR slack[a]	-0.14	0.12	-0.13	0.11	HR slack[a]	-0.15	0.12	-0.16	0.14
	Potential slack[a]	0.16	0.22	0.08	0.25	Potential slack[a]	-0.02	0.17	0.00	0.19
	Recoverable slack[a]	-0.04	0.18	-0.04	0.20	Recoverable slack[a]	0.03	0.22	0.06	0.23
	Firm age[a]	32.05	15.36	24.88	12.44	Firm age[a]	31.00	16.86	29.03	15.86
	Total assets[a]	10142	8928	10539	8950	Total assets[a]	12031	10009	10730	10683
	Intangible assets ratio[a]	0.01	0.04	0.01	0.03	Intangible assets ratio[a]	0.02	0.05	0.04	0.09
	EBITDA/total assets[a]	0.16	0.10	0.15	0.12	EBITDA/total assets[a]	0.11	0.09	0.11	0.12
	Daughter	0.49	0.50	0.75	0.44	Daughter	0.52	0.50	0.55	0.50
	Brussels HQ	0.05	0.23	0.03	0.18	Brussels HQ	0.04	0.19	0.03	0.17
	Wallonia HQ	0.11	0.31	0.12	0.33	Wallonia HQ	0.14	0.35	0.17	0.38
	Limited liability	0.29	0.46	0.31	0.46	Limited liability	0.36	0.48	0.23	0.43

[a]Winsorized at 1%.

4.5.2 Estimations

The effects of the different bundles of slack on strategic changes in *non-family-owned firms* are displayed in Table 4.3. Model 1 displays the effects of the control variables, while Models 2 to 5 present the effects of the different bundles of slack resources, compared to the other bundles. In each of these models, another bundle is taken as reference category. Note that this does not change the equation, and hence the R-squared is the same for each of these models. Also note that all non-binary control variables are standardized, so that the coefficient size is equal to the change in the number of strategic actions undertaken if the variable would increase by 1 standard deviation.

As displayed in Model 1, while potential slack seemingly has no effect, a one standard deviation increase in recoverable slack, increases the number of strategic change actions by 0.391. No other control variables seem to have any effect.

Hypothesis 1 postulated that Quadrant II (high financial slack, low HR slack) leads to the highest number of strategic changes in non-family-owned firms. This is investigated in Model 2, in which the effect of Quadrant II is taken as a reference category compared to the other three quadrants. In line with the hypothesis, we find that each of the three other quadrants leads to significantly lower levels of strategic changes that Quadrant II. In other words, Quadrant II (high financial slack combined with a low level of HR slack) results in the greatest number of strategic changes in non-family-owned firms. Besides, the results now also show that a higher intangible assets ratio results in a higher number of strategic changes.

Hypothesis 2 postulated that Quadrant IV (low financial slack combined with low HR slack) resulted in the lowest levels of strategic changes in non-family-owned firms. The effect of Quadrant IV is compared to each of the other three quadrants in Model 3. As is displayed in the model, each of the other 3 quadrants result in significantly higher levels of strategic changes than Quadrant IV. Hence, hypothesis 2 is also supported.

Models 4 and 5 show the effects of, respectively, Quadrants I and III as a baseline. Both models show that, relative to both these baselines, Quadrant II results in higher levels of strategic changes and Quadrant IV in lower.

Table 4.4 displays the effects of the different bundles of slack on strategic changes in *family-owned firms*, again displaying the effects of the control variables in model 1, and the effects of the bundles in models 2 to 5. In each of these models, a different bundle is taken as the reference category. All non-binary control variables are standardized. Interestingly, while positive in non-family owned firms, potential slack has a significantly negative effect on the number of strategic changes among family-owned firms. Furthermore, Table 4.4 also shows

that firm size and the intangible asset ratio significantly positively affect the number of strategic changes in family-owned firms.

Hypothesis 3 postulated that the effect of Quadrant IV is less negative for the number of strategic changes in family-owned firms than it is in non-family-owned firms. In order to compare the effects of Quadrant IV between family-owned and non-family-owned firms, we run two (unreported) models in which only Quadrant IV (i.e., instead of all bundles) are included in the model, once for family-owned firms and once for non-family-owned firms, to estimate the effect of Quadrant IV relative to the other 3 quadrants together. Thereafter, we use the stata command *suest* to compare the effect sizes of Quadrant IV for family-owned firms with non-family-owned firms. This showed that the effect of Quadrant IV on the number of strategic changes is significantly more negative ($p=0.017$) in non-family-owned firms than it is in family-owned firms, confirming hypothesis 3.

Hypothesis 4 postulated that the number of strategic changes will be the lowest in family-owned firms when the firm combines high financial slack with low HR slack (Quadrant II). This is tested in Model 2, which compares the effect of Quadrant II to the other three quadrants. We find that both Quadrant I and Quadrant III lead to significantly higher levels of strategic changes than Quadrant II in family-owned firms, while Quadrant IV also seems to result in a higher number of strategic changes, albeit not significantly. Hypothesis 4 is, thus, partially confirmed: Quadrant II leads to the lowest levels of strategic changes in family-owned firms, albeit similar to Quadrant IV.

Table 4.3: Strategic Changes in non-family-owned firms

VARIABLES	(1) Str. Change	(2) Str. Change	(3) Str. Change	(5) Str. Change	(4) Str. Change
High FS – High HRS		-1.086**	0.830*		-0.068
(Quadrant I)		(0.525)	(0.465)		(0.462)
High FS – Low HRS			1.916***	1.086**	1.018**
(Quadrant II)			(0.463)	(0.525)	(0.500)
Low FS – High HRS		-1.018**	0.898**	0.068	
(Quadrant III)		(0.500)	(0.430)	(0.462)	
Low FS – Low HRS		-1.916***		-0.830*	-0.898**
(Quadrant IV)		(0.463)		(0.465)	(0.430)
Potential Slack[a]	0.025	-0.054	-0.054	-0.054	-0.054
	(0.163)	(0.163)	(0.163)	(0.163)	(0.163)
Recoverable Slack[a]	0.391**	0.553***	0.553***	0.553***	0.553***
	(0.172)	(0.171)	(0.171)	(0.171)	(0.171)
Firm age[a]	0.094	0.195	0.195	0.195	0.195
	(0.194)	(0.195)	(0.195)	(0.195)	(0.195)
Total assets[a]	0.136	0.203	0.203	0.203	0.203
	(0.210)	(0.212)	(0.212)	(0.212)	(0.212)
Intangible ratio[a]	0.155	0.264*	0.264*	0.264*	0.264*
	(0.145)	(0.142)	(0.142)	(0.142)	(0.142)
EBITDA/Total assets[a]	-0.117	-0.149	-0.149	-0.149	-0.149
	(0.138)	(0.145)	(0.145)	(0.145)	(0.145)
Daughter	-0.328	-0.535	-0.535	-0.535	-0.535
	(0.384)	(0.366)	(0.366)	(0.366)	(0.366)
Brussels HQ	0.932	0.722	0.722	0.722	0.722
	(0.861)	(0.893)	(0.893)	(0.893)	(0.893)
Wallonia HQ	-0.374	-0.247	-0.247	-0.247	-0.247
	(0.412)	(0.425)	(0.425)	(0.425)	(0.425)
Limited liability	-0.270	-0.355	-0.355	-0.355	-0.355
	(0.447)	(0.439)	(0.439)	(0.439)	(0.439)
Industry dummies	YES	YES	YES	YES	YES
Observations	247	247	247	247	247
R-squared	0.313	0.373	0.373	0.373	0.373

[a]Standardized variable.
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4.4: Strategic Changes in family-owned firms

VARIABLES	(1) Str. Change	(2) Str. Change	(3) Str. Change	(4) Str. Change	(5) Str. Change
High FS – High HRS		0.631*		-0.149	0.270
(Quadrant I)		(0.378)		(0.415)	(0.395)
High FS – Low HRS			-0.631*	-0.780**	-0.361
(Quadrant II)			(0.378)	(0.395)	(0.336)
Low FS – High HRS		0.780**	0.149		0.419
(Quadrant III)		(0.395)	(0.415)		(0.373)
Low FS – Low HRS		0.361	-0.270	-0.419	
(Quadrant IV)		(0.336)	(0.395)	(0.373)	
Potential Slack[a]	-0.279*	-0.171	-0.171	-0.171	-0.171
	(0.143)	(0.155)	(0.155)	(0.155)	(0.155)
Recoverable Slack[a]	0.040	-0.001	-0.001	-0.001	-0.001
	(0.135)	(0.140)	(0.140)	(0.140)	(0.140)
Firm age[a]	-0.074	-0.080	-0.080	-0.080	-0.080
	(0.135)	(0.132)	(0.132)	(0.132)	(0.132)
Total assets[a]	0.328**	0.420**	0.420**	0.420**	0.420**
	(0.165)	(0.181)	(0.181)	(0.181)	(0.181)
Intangible ratio[a]	0.513***	0.517***	0.517***	0.517***	0.517***
	(0.185)	(0.190)	(0.190)	(0.190)	(0.190)
EBITDA/Total assets[a]	-0.216	-0.208	-0.208	-0.208	-0.208
	(0.174)	(0.177)	(0.177)	(0.177)	(0.177)
Daughter	-0.062	-0.113	-0.113	-0.113	-0.113
	(0.268)	(0.270)	(0.270)	(0.270)	(0.270)
Brussels HQ	-0.650	-0.555	-0.555	-0.555	-0.555
	(0.853)	(0.847)	(0.847)	(0.847)	(0.847)
Wallonia HQ	-0.327	-0.338	-0.338	-0.338	-0.338
	(0.388)	(0.386)	(0.386)	(0.386)	(0.386)
Limited liability	-0.132	-0.099	-0.099	-0.099	-0.099
	(0.306)	(0.302)	(0.302)	(0.302)	(0.302)
Industry dummies	YES	YES	YES	YES	YES
Observations	407	407	407	407	407
R-squared	0.247	0.257	0.257	0.257	0.257

[a]Standardized variable.
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

4.6 Robustness tests

4.6.1 Heterogeneity among family-owned firms

Family-owned firms tend to exhibit substantial differences with regards to organizational changes compared to non-family owned firms (Kotlar & Chrisman, 2019). Yet, among family-owned firms, there remains strong heterogeneity with regards to firm goals, objectives, and resources (De Massis et al., 2019), which may result in great variation in strategic changes among family-owned firms. Therefore, in their dialogue on organizational changes in family firms, (De Massis et al., 2019: 41) called for the study of "how heterogeneity among family firms influences organizational change", as an extension to the call of (Kotlar & Chrisman, 2019: 32) to study of "the influence of family involvement on change". In line with this dialogue, we extend our main analyses by focusing specifically on the family-owned firms, and how the heterogeneity with respect to their goals influences the relation between slack resources and strategic changes.

Given the importance of firms' goals in determining the role of slack resources (George, 2005), we argued that the presence of non-economic goals in family-owned firms would result in a different relation between slack resources and strategic changes to the one in non-family-owned firms. As a way to identify and explain the unique bundle of these non-economic goals that may influence strategic changes in family-owned firms, the concept of SEW has been used (Gómez-Mejía et al., 2007). It represents the stock of primarily family-oriented affective endowments that family owners derive from, and pursue through, operating the firm (Chrisman et al., 2012; Gomez-Mejia et al., 2011). Therefore, in this robustness test, we delve into the heterogeneity of family-owned firms' SEW, and its effect on the relation between bundles of slack and strategic changes.

4.6.1.1 Socio-emotional wealth importance

Ongoing theoretical development has recognized SEW as a multi-dimensional construct (Berrone et al., 2012; Debicki et al., 2016) and has, in consequence, developed several models that hold theoretical value and consider different dimensions of SEW. The most widely-used model is the FIBER model, which defines SEW as a multidimensional construct consisting of five facets, developed by Berrone et al. (2012). More recently, Debicki et al. (2016) developed the SEW importance model, which can be measured through an empirically derived and validated scale and considers three primary dimensions of SEW (Debicki et al., 2017). The advantage of this model is that it does not treat SEW as an endowment, and, thus, does not aim

to measure the level of SEW (such as, for example, the FIBER model of Berrone et al., 2012). Instead, in line with the notion that it firm behavior appears to be determined by the importance that family members attach to particular dimensions of the SEW construct, rather than the level the SEW stock (Miller & Breton-Miller, 2014), the model seeks to measure the importance family members attach to the non-financial benefits generated through operating the family firm (Debicki et al., 2016).

The resulting socioemotional wealth importance (SEWi) scale distinguishes three different dimensions. We discuss the three dimensions briefly, see Debicki et al. (2016) or Debicki et al. (2017) for a review. The first dimension, *family continuity*, represents the non-economic benefit family members obtain from preserving the family in the business. Family members who attach a high level of importance to this dimension are likely to consider the unity of the family important and care about the preservation of the family dynasty and convey family values to younger generations (Jones et al., 2008). The second dimension, *family enrichment*, reflects the desire of the firm owners to behave altruistically towards the family at large, as opposed to only members directly involved in the firm. They value, among others, the ability to provide employment for family members highly (Jones et al., 2008). The third dimension, *family prominence*, refers to the importance of the perception by external stakeholders about the family. Family firm owners who attach great importance to this dimension, care strongly about the family's general reputation and social support within the community (Debicki et al., 2016). We have surveyed the family firms in our survey about these three SEWi dimensions. Of the 407 family-owned firms in our sample, 380 filled out the SEWi questions. Hence, we were able to perform a robustness analysis by including SEWi and its interaction with slack in our models.

Our robustness analysis allows us to test three potential issues. First, we test whether the number of strategic changes is significantly influenced by the variation among family-owned firms' SEWi heterogeneity. If the different dimensions would, indeed, significantly influence the level of strategic changes among family-owned firms, it may confirm the notion that there is "greater variation among family firms than that between family firms and non-family firms" (De Massis et al., 2019:37). This would imply that a distinction between family-owned and non-family-owned firms may not be sufficient, and that a further distinction among family-owned firms would be needed. In response, in our second test, we study whether bundles of slack remain to have any significant influence, after controlling for SEWi. how the effects of the different bundles of slack would be affected through SEWi. This would allow us

to distinguish in which family-owned firms the bundles of slack framework is more, or less, relevant.

The results are presented in Table 4.A1 in the Appendix. Model 1 portrays the original model testing the effects of the different bundles of slack, with Quadrant II (i.e., high levels of financial slack combined with low levels of HR slack) as the baseline. In Model 2, the different dimensions of SEWi are added. Importantly, they are not significant. They remain insignificant when different bundles of slack are excluded from the model (unreported). Moreover, when including the different SEWi dimensions, the bundles of slack remain a significant explanatory variable in explaining firms' number of strategic changes. Model 3 displays the interaction effects of each bundle of slack (relative to the baseline, being Quadrant II) with each SEWi dimension. Interestingly, the continuity dimension reduces the difference between the two extreme bundles (i.e., Quadrants I and IV) and Quadrant II, while the enrichment dimension increases their differences. Family-owned firms who attach great importance to continuity, or the long-term survival of the firm and passing down of the reigns to the next generation, seemingly are less likely to let a buffer of financial slack with constraints in HR slack prevent them from changing the firm's strategy. On the other hand, family-owned firms who attach great importance to enrichment, or being able to behave altruistically towards the family, introduce even fewer strategic changes in possessing this bundle of slack. The difference between Quadrants II and III does not vary with any of the three SEWi dimensions.

Hence, we can conclude that our distinction between family-owned and non-family-owned firms has already explained a great level of variation, and further variation among family-owned firms cannot be explained by sub-dividing the sample of family-owned firms according to their SEWi. When including SEWi in the model, the distinct bundles of slack remain to have comparable effects as in the original models, while its effects can be more or less pronounced according to the family owners' SEWi characteristics.

4.6.2 Full sample

In a second set of robustness analyses, we investigate the effects of bundles of slack on strategic changes in the full sample. In order to distinguish the moderating effect of family ownership, we rely on interaction variables, rather than using split samples. This allows us to test whether the effects of the different bundles differ significantly between family-owned and non-family-owned firms. It also allows us to study the effect of family ownership itself on the number of strategic changes.

The results are displayed in Table 4.A2 in the Appendix to this study. Model 1 includes the dummy family ownership, showing that family ownership as such does not have any effect on the number of strategic changes. Models 2 to 5 include the different bundles of slack, and their interaction effects with the family ownership dummy. The models of most interest to us, are Model 3 and Model 5. In Model 3, it is shown that Quadrant II (high level of financial slack combined with low levels of HR slack) results in significantly higher levels of strategic changes in non-family-owned firms than in family-owned firms, while in Model 5, it is shown that Quadrant IV results in significantly lower levels of strategic changes in non-family-owned firms than in family-owned firms.

4.7 Discussion

The results of this study add to the ongoing debate on the effect of resources on strategic changes by providing a better understanding of how and when slack resources constrain or enable strategic changes (Müller & Kunisch, 2018). Following the suggestion of Geiger & Cashen (2002) that different forms of slack may result in different strategic actions, we introduce the recently developed concept of "bundles of slack" (Paeleman et al., 2015) to the debate. This allowed us to test the relevance of both the slack-as-resources-for-change" and the opposing "slack-as-a-buffer" perspectives (Cheng & Kesner, 1997, p. 2) and decipher the "fundamental conundrum" of the effect of slack resources on strategic changes (Müller & Kunisch, 2018, p. 475). Moreover, as the effect of slack resources are, to some extent, dictated by the firm's goals, we also investigated how a particular set of goals (i.e. family ownership) influenced the relation between slack resources and the number of strategic changes.

Our results contribute to the strategic change literature by showing that an integrated view of slack-as-resources-for-change and slack-as-a-buffer for change is the most suitable perspective to describe the relation between slack resources and strategic changes. More specifically, our results show that non-family-owned firms who combine high levels of financial slack with low levels of HR slack, undertake the greatest number of strategic changes. In line with the slack-as-resources-for-change perspective, the financial slack resources allow the firm to invest in potential strategic opportunities. These opportunities are more easily discovered if, in line with the slack-as-a-buffer perspective, the firm's level of HR slack is low.

The opposite holds when the firm's goals include preserving the family owners' stock of socio-emotional wealth (SEW), such as in family-owned firms, and firm survival becomes the firm's priority. According to the Behavioral Agency Model (BAM), family-owned firms

are loss-averse with regards to their SEW, and only undertake risky action once their stock of SEW is threatened. As long as the firm performs satisfactory, family-owned firms are likely to refrain from taking many strategic changes. This is confirmed by our results, which showed that family-owned firms who bundle high financial slack with low HR slack, undertake the lowest number of strategic changes. In other words, family-owned firms use this bundle of slack as a buffer to potential threats. Along the same line, we also found that potential slack has a negative effect on the number of strategic changes in family-owned firms. Family-owned firms with a lower leverage rate than their industry median, undertake fewer strategic changes. This is in line with the BAM, as family-owned firms who are in no particular financial risk (i.e., have a low leverage rate), should be unwilling to take any (financial) risk that may, ultimately, harm their SEW.

Finally, our results also provided support for the "resource constraints trap" (Paeleman & Vanacker, 2015: 824). In this situation, in which firms have parallel resource constraints, the firm's management becomes so occupied on making do with the resources at hand, that it can no longer focus on strategic decision-making. In non-family-owned firms, this bundle, therefore, results in the fewest number of strategic changes. Family-owned firms are less prone to this resource constraints trap, and the bundle of parallel resource constraints has, consequently, a less detrimental effect on the number of strategic changes than it has in non-family-owned firms.

We extend the slack literature in at least two ways. First, our study is the first to extend the "bundles of slack" framework developed by Paeleman & Vanacker (2015), to any strategic decision that precedes firm performance. Our results provide weight to the argument of Paeleman et al. (2015) that slack resources should not be evaluated on the level of isolated slack resources, but rather as bundles with other types of slack resources. The authors showed that firms with parallel resource constraints had the shortest expected survival rates (Paeleman & Vanacker, 2015). This finding is very much reconcilable with our finding that firms with parallel resource constraints undertake the fewest strategic changes. As strategic changes are an important determinant of long-term survival (Klammer et al., 2017), we believe our findings confirm and provide additional color to the findings of Paeleman & Vanacker (2015). Second, our study provides further insight into the findings of Bentley & Kehoe (2020), who found that the interaction between financial and HR slack is positive for firm performance during strategic change, while both financial and HR slack negatively affect firm performance when the firm is not changing its strategy. Our findings that firms with parallel resource constraints undertake the fewest strategic changes, shines new light on the finding that such resource constraints

would be detrimental for firm performance during strategic change (Bentley & Kehoe, 2020). Indeed, it may implicate that managers in firms with parallel resource constraints realize that their firm's performance may deteriorate if the firm were to initiate strategic change, consequently refraining from undertaking strategic changes, hence also why parallel resource constraints result in lower levels of strategic changes.

Finally, our findings increase our understanding of the role of family ownership on the relative importance of the buffer-effect of slack resources on strategic changes. We believe that the slack-as-a-buffer perspective, while it may not apply universally, holds relevance for firms who are risk-averse and who actively seek to buffer firm survival from potential threats. Such characteristics are common among family-owned firms, as these firms strongly desire to maintain financial security for future generations of the family (Arregle et al., 2007; Gómez-Mejía et al., 2007). Indeed, while parallel resource constraints lead to the fewest number of strategic changes in non-family-owned firms, this is not the case in family-owned firms. Instead, family-owned firms undertake the fewest strategic changes when the firm bundles a high level of financial slack with a low level of HR slack. Seemingly, if family-owned firms have low levels of HR slack, they use their financial slack to exploit their current strategy at the expense of exploring new strategies, as Hu et al. (2011) proposed. This is in line with prior studies that showed that family firms initiate less risky strategic changes as financial slack increases (Xu & Hitt, 2020). On the other hand, if the level of financial slack decreases so that the firm has parallel resource constraints, family-owned firms seemingly realize that the firm may be financially vulnerable, causing them to pursue greater risks (Gómez-Mejía et al., 2014), ultimately leading to a greater extent of strategic changes. This is opposite to the effect in non-family-owned firms, who become less likely to undertake strategic changes once the firm has parallel resource constraints. These findings confirm the notion that the "mixed gamble" (i.e., taking more risk when SEW is threatened) calculus in family firms is influenced by the firm's resource slack profile (Alessandri et al., 2018), and provide support for the slack-as-a-buffer perspective with regards to strategic changes in family-owned firms. While one could question why only selective constraints in financial resources, and not also selective constraints in human resources, leads to fewer strategic changes in family-owned firms, we believe this answer lays in the preference of family-owned firms for financial slack over HR slack (Gentry et al., 2016). First, financial slack a relatively more easily redeployable and less expensive buffer (Tan & Peng, 2003), certainly in family-owned firms where HR slack may be more costly given family firms tend to be better employers and invest more in their employees (Neckebrouck et al., 2018). Second, family owners are less willing to give up control, resulting

in a lower willingness to attract external financing (Michiels & Molly, 2017; Molly et al., 2019; Schulze et al., 2001). Therefore, family firms are characterized by strong parsimony in managing their financial slack resources (Chrisman et al., 2012), in order to preserve financial slack as to not having to raise it through external financing when needed. Hence, family-owned firms prefer financial slack over HR slack for a number of reasons, while it is also better suited as a buffer against threats to firm survival.

4.7.1 Limitations and further research opportunities

As with all studies, our study is not without its limitations. As we adopted the bundles of slack perspective proposed by Paeleman & Vanacker (2015), we focused on the two types of slack proposed by these scholars. However, it may very well be that other types of slack also influence strategic changes. Our results, for example, showed that potential slack played an important role in family-owned firms, while it had no effect in non-family-owned firms – while the opposite was true for recoverable slack. Future research may further untangle the effect of these two different types of slack, but may also focus on types of slack not discussed in this work, such as transient slack. Transient slack, a concept introduced by George (2005), emphasizes the demand for resources and separates it from the availability of resources. This should allow to better paint a picture of the "temporal patterns of an organization's resource generation and deployment profiles" (George, 2005: 664). Unlike "structural slack", which is built into the organization's long-term strategy, transient slack is often unplanned and arises due to fluctuations in business activities, seasonal variations, or unexpected changes in external conditions. For example, a company might experience transient slack during a slow sales month, resulting in idle employees and unused inventory. In our studies, we measured slack at the end of firms' fiscal book years. It might be insightful to measure slack at different points in time, to get a view on firms' level of transient slack, and how fluctuations therein relate to strategic changes.

Family firms are a heterogeneous group of firms, which may limit the extent to which our findings of family-owned firms may be generalized to family firms in general. Future studies may investigate whether our results hold for other family firm-characteristics that are less linked to long-term view and family-centered focus than family ownership (Daspit et al., 2021). Furthermore, family ownership may not be the only type of ownership that influences firms' goals, and, thus, the relation between slack resources and strategic changes. It could be that other (external) capital providers may also influence this relation. On the one hand, firms' use of slack resources could be limited through control mechanisms installed by such external

capital providers (Chaganti et al., 1996), while, on the other hand, external capital providers may also directly influence strategic change, for example through providing managerial advice. Hence, consistent with Müller & Kunisch (2018), we emphasize the necessity for future research to examine the effect of external capital providers on strategic changes.

4.7.2 Implications for practice and policy

We see a few implications for practitioners. First, actors in family-owned firms should be aware that the firm's owners are loss-averse with respect to their socio-emotional wealth, which influences strategic decision-making. Managers should be careful not to hold great levels of financial slack resources, since they will induce the firm's owners to stop taking economic risks, such as strategic changes, although these may be beneficial for firm performance.

If the family-owned firm would, however, possess a high level of financial slack, one remedy could be to increase the firm's level of HR slack. A greater number of (non-family) employees may surveil the environment, discover strategic opportunities, and experiment to some extent with the financial slack resources to respond to such opportunities. This may prevent the family-owned firm from becoming completely buffered from its environment, and, consequently, getting into strategic decline.

Second, on the other hand, non-family-owned firms should be careful not to get caught in a resource constraints trap, which may happen when the firm bundles low levels of financial slack with low levels of HR slack. In this position, the firm's actors may get too preoccupied with making do with (or "stretching") the few resources at hand, at the expense of strategic decision making. As such, this bundle significantly reduces non-family-owned firms' ability to undertake strategic changes and respond to environmental opportunities. This is far less problematic for family-owned firms, who can, when necessary, inject personal capital or sacrifice their own labor to respond to environmental opportunities or threats.

Third, non-family-owned firms should, instead, focus on keeping a high level of financial slack resources. These financial slack resources allow the firm to invest in experimental projects with an uncertain pay-off, which may spark new strategic initiatives and changes. If possible, the firm should combine the high level of financial slack resources with a low level of HR slack. This assures that the firm continues to work efficiently, and all employees have a greater sense of belonging, which induces them to think more about the firm's strategic opportunities – helped by the presence of financial resource slack.

Policymakers should note the importance of a high level of financial resource slack in non-family-owned firms and may stimulate the accumulation of such financial slack resources.

This may be accomplished by increasing the attractiveness of saving financial resources in the firm, as opposed to withdrawing these financial resources through, for example, dividends. As such, in Belgium, the scope of the current legislation concerning the 'liquidatiereserve' ('liquidation reserve') could be increased. This legislation allows firms to "reserve" profits, by keeping them on the books for at least 5 years instead, and after paying an additional corporation tax of 9.1%. Doing so, after 5 years, shareholders may distribute these reserved profits at withholding tax of 5% instead of the current rate of 30%. We see a few ways in which this legislation could be adapted so that it could be beneficial to strategic changes in (more) SMEs. First, the current legislation prohibits firms to make use of the reserved profits, in line with the "intangibility condition". This results in the cash sitting idle on a separate bank account for 5 years, while it could otherwise function as financial slack and stimulate strategic changes in non-family-owned firms and buffer SEW in family-owned firms. Second, avenues through which the scope of this legislation could be increased. Currently, only small and micro firms are eligible to create a liquidation reserve. Our study, however, shows that all non-family-owned SMEs should benefit from such a reserve. Hence, we believe that it may be beneficial for Belgian's economy if medium-sized firms were also to be allowed to create such a reserve. Also, a period of 5 years is, in an increasingly more dynamic economic environment, a long time, which may prevent many firms from using the liquidation reserve. Therefore, we argue that the period should be shortened to, for example, 3 years. This should still leave the firm with a sufficiently high level of slack resources to experiment with strategic opportunities. Third, the 9.1% additional corporation tax to be paid when reserving the profits, is cumbersome and is keeping SMEs from making use of the program (House of Finance, 2023). We believe it may be beneficial if the additional corporation tax were to be summed with the 5% withholding tax at the end of the 5-year period, resulting in a larger amount of financial slack that would be available to the firm. It would also halve the number of instances a tax would have to be paid, reducing administrative burden.

4.8 Conclusion

Our findings show that, as prescribed by the slack-as-resources-for-change perspective, non-family-owned firms who have high levels of at least one type of slack resource, introduce greater levels of strategic changes. However, in line with the slack-as-a-buffer perspective, non-family-owned firms introduce the greatest number of strategic changes when they hold low levels of HR slack, bundled with high levels of financial slack. The low levels of HR slack

result in less buffers to environmental changes, while the firm is also less constrained by a great number of employees who depend on the current strategy not changing.

On the other hand, family-owned firms undertake the fewest strategic changes when they bundle high levels of financial slack with constrained levels of human resources. Seemingly, family-owned firms treat financial slack as a buffer to external threats, which follows the slack-as-a-buffer perspective.

4.9 Appendix

Table 4.A1: Effect of SEW importance on relation between bundles of slack and strategic changes

VARIABLES	(1) Strategic changes	(2) Strategic changes	(3) Strategic changes
High FS – High HRS	0.631*	0.660*	0.611
(Quadrant I)	(0.378)	(0.386)	(0.402)
Low FS – High HRS	0.780**	0.793*	0.797*
(Quadrant III)	(0.395)	(0.420)	(0.412)
Low FS – Low HRS	0.361	0.418	0.501
(Quadrant IV)	(0.336)	(0.360)	(0.357)
SEWi Continuity[a]		-0.057	0.851*
		(0.220)	(0.483)
SEWi Enrichment[a]		-0.051	-0.621
		(0.187)	(0.448)
SEWi Prominence[a]		0.106	-0.173
		(0.160)	(0.294)
Quadrant I x Continuity[a]			-1.105*
			(0.663)
Quadrant I x Enrichment[a]			1.072*
			(0.602)
Quadrant I x Prominence[a]			0.592
			(0.429)
Quadrant III x Continuity[a]			-0.909
			(0.666)
Quadrant III x Enrichment[a]			0.136
			(0.623)
Quadrant III x Prominence[a]			0.284
			(0.434)
Quadrant IV x Continuity[a]			-1.299**
			(0.554)
Quadrant IV x Enrichment[a]			1.030*
			(0.536)
Quadrant IV x Prominence[a]			0.280
			(0.424)
Potential Slack[a]	-0.171	-0.198	-0.240
	(0.155)	(0.167)	(0.167)
Recoverable Slack[a]	-0.001	-0.032	-0.000
	(0.140)	(0.142)	(0.144)
Firm age[a]	-0.080	-0.125	-0.119
	(0.132)	(0.139)	(0.135)
Total assets[a]	0.420**	0.370*	0.380**
	(0.181)	(0.192)	(0.190)
Intangible ratio[a]	0.517***	0.518***	0.502**
	(0.190)	(0.194)	(0.197)
EBITDA/Total assets[a]	-0.208	-0.174	-0.111
	(0.177)	(0.185)	(0.188)
Daughter	-0.113	-0.167	-0.157
	(0.270)	(0.280)	(0.285)
Brussels HQ	-0.555	-0.032	-0.214
	(0.847)	(0.966)	(1.013)
Wallonia HQ	-0.338	-0.408	-0.465
	(0.386)	(0.418)	(0.429)
Limited liability	-0.099	-0.131	-0.170
	(0.302)	(0.315)	(0.314)
Industry dummies	1.652	1.887	1.581
	(1.161)	(1.209)	(1.186)
Observations	407	380	380
R-squared	0.257	0.274	0.302

[a]Standardized variable. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4.A2: Full sample effects

VARIABLES	(1) Strategic changes	(2) Strategic changes	(3) Strategic changes	(4) Strategic changes	(5) Strategic changes	(6) Strategic changes
Family-owned	0.118	0.116	-0.386	3.487***	-0.105	-2.643***
	(0.192)	(0.192)	(1.027)	(1.019)	(1.001)	(0.943)
High FS – High HRS (Quadrant I)				-0.648	-0.063	1.008**
				(0.487)	(0.434)	(0.412)
High FS – Low HRS (Quadrant II)		-0.197	0.648		0.585	1.657***
		(0.304)	(0.487)		(0.467)	(0.416)
Low FS – High HRS (Quadrant III)		0.009	0.063	-0.585		1.071***
		(0.302)	(0.434)	(0.467)		(0.371)
Low FS – Low HRS (Quadrant IV)		-0.518*	-1.008**	-1.657***	-1.071***	
		(0.298)	(0.412)	(0.416)	(0.371)	
Quadrant I x Fam.-owned				-1.291**	-0.094	0.752
				(0.565)	(0.559)	(0.518)
Quadrant II x Fam.-owned			1.291**		1.197**	2.043***
			(0.565)		(0.553)	(0.505)
Quadrant III x Fam.-owned			0.094	-1.197**		0.846*
			(0.559)	(0.553)		(0.495)
Quadrant IV x Fam.-owned			-0.752	-2.043***	-0.846*	
			(0.518)	(0.505)	(0.495)	
Potential Slack[a]	-0.184*	-0.175	-0.146	-0.146	-0.146	-0.146
	(0.103)	(0.107)	(0.107)	(0.107)	(0.107)	(0.107)
Recoverable Slack[a]	0.098	0.099	0.123	0.123	0.123	0.123
	(0.100)	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Firm age[a]	-0.030	-0.022	-0.004	-0.004	-0.004	-0.004
	(0.114)	(0.114)	(0.115)	(0.115)	(0.115)	(0.115)
Total assets[a]	0.175	0.260**	0.250*	0.250*	0.250*	0.250*
	(0.119)	(0.129)	(0.129)	(0.129)	(0.129)	(0.129)
Intangible ratio[a]	0.235**	0.243**	0.283**	0.283**	0.283**	0.283**
	(0.109)	(0.111)	(0.110)	(0.110)	(0.110)	(0.110)
EBITDA/Total assets[a]	-0.250**	-0.267**	-0.267**	-0.267**	-0.267**	-0.267**
	(0.105)	(0.105)	(0.106)	(0.106)	(0.106)	(0.106)
Daughter	-0.152	-0.197	-0.280	-0.280	-0.280	-0.280
	(0.205)	(0.205)	(0.203)	(0.203)	(0.203)	(0.203)
Brussels HQ	0.095	0.024	0.015	0.015	0.015	0.015
	(0.525)	(0.537)	(0.519)	(0.519)	(0.519)	(0.519)
Wallonia HQ	-0.310	-0.308	-0.297	-0.297	-0.297	-0.297
	(0.272)	(0.272)	(0.272)	(0.272)	(0.272)	(0.272)
Limited liability	-0.338	-0.308	-0.367	-0.367	-0.367	-0.367
	(0.234)	(0.233)	(0.231)	(0.231)	(0.231)	(0.231)
Industry dummies	YES	YES	YES	YES	YES	YES
Observations	654	654	654	654	654	654
R-squared	0.159	0.167	0.188	0.188	0.188	0.188

[a]Standardized variable. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Chapter 5

Financing Diversity as an Enabler of Strategic Changes in SMEs

Tristan De Blick, Ine Paeleman, Eddy Laveren

Abstract It is crucial for long-term firm survival and performance that SMEs are able to introduce strategic changes in response to environmental threats and opportunities. Better understanding the effects on SMEs' ability to introduce strategic changes is, therefore, important. Thus far, however, the effect of financial resources on strategic changes has been contested. This paper aims to untangle this relation by investigating the source of the firm's financial resources, instead of the quantity of those resources available in the firm. We hypothesize that greater financing diversity, i.e., the number of financing types from which a firm obtains financing, results in greater ability to introduce strategic changes. This, as financing diversity may result in more favorable financing terms and conditions, while it may also lead to a greater discovery of strategic threats and opportunities. Both factors result in so-called coordination flexibility, which is an important enabler of strategic changes. Self-collected survey data of 525 Belgian SMEs their strategic changes during the first COVID-19 lockdown supports this hypothesis. SMEs with greater financing diversity introduced more strategic changes in response to both environmental opportunities and environmental threats. Moreover, the positive effect of financing diversity is lesser for younger firms, due to their liability of newness.

Keywords Strategic Changes; Financing; Financing Diversity; SMEs

5.1 Introduction

As a key response to environmental changes (Kraatz & Zajac, 2001; Zajac & Kraatz, 1993; Zajac & Shortell, 1989), strategic changes are emphasized as a major contributor to the survival and success of firms (Boeker, 1989), facilitating firm adaption to environmental threats or environmental opportunities (Kirtley & O'Mahony, 2020). Given the importance of strategic changes for firm performance and survival, it is important to enhance our understanding of how firms may increase their ability to introduce strategic changes (Müller & Kunisch, 2018).

One important determinant of firms' ability to introduce strategic changes, are their resources (Franken et al., 2009). Among the different types of resources present in firms, financial resources may be the most fundamental ones, as they not only allow the financing of strategic changes, but also allow the acquisition or development of other resources and capabilities needed for such changes (Barker III & Barr, 2002; Barker III & Duhaime, 1997; Cheng & Kesner, 1997). Yet, high levels of financial resources have also been linked to lower levels of strategic changes as they may lower managers' level of risk-taking and willingness to change (Kraatz & Zajac, 2001; Latham & Braun, 2008). Given these conflicting findings, the relation between financial resources and strategic changes is exemplary for the "fundamental conundrum" that exists in the relation between firm resources and strategic changes (Müller & Kunisch, 2018, p. 475). Therefore, as prior scholars have called for a better understanding of the role of resources in enabling or constraining strategic changes (Bentley & Kehoe, 2020; Müller & Kunisch, 2018), we study the role of financial resources on strategic changes.

However, unlike prior studies on the relation between financial resources and strategic changes (e.g., Kraatz & Zajac, 2001), we do not focus on the quantity of the firm's financial resources. Instead, we address this conundrum by drawing on the seminal work of Sanchez (1995; 1997). Sanchez argues that a decisive factor for firms' ability to introduce strategic changes is the extent to which a firm is able to re-allocate its resources, so that it can "maximize the flexibilities inherent in the resources available to the firm" (Sanchez, 1995: 138). This follows the perception of Edith Penrose that "it is never resources themselves that are the inputs in the production process, but only the services that the resources can render" (1959: 25). In other words, a firm's possible strategic changes are determined by the different ways the firm is able to use its resources (Sanchez, 1995; Sanchez, 1997). Recent empirical work in start-ups from Brinckmann et al. (2019) confirms this notion, showing that it is not the level of resources that determines firms' strategic changes, but rather how easily a firm's management can find and re-allocate financial resources once a strategic opportunity arises. Therefore, we build on

these insights, and focus on firms' ability to allocate their financial resources, rather than their quantity, when facing environmental opportunities or threats.

With this aim, we examine the source of the firm's financial resources: the firm's external capital providers. External capital providers constitute, among others, of banks, venture capitalists, private individuals, leasing, factoring, suppliers/customers, partners/working shareholders, or governmental bodies (Cosh et al., 2009). As the term suggests, external capital providers provide the firm with financial resources, through debt- , equity-, or other instruments such as grants. In return, the external capital provider often has a claim on the firm's future financial resources, which it seeks to secure by installing control mechanisms upon extending financing to the firm. Each external capital provider has a distinct number of such control mechanisms. Banks may introduce debt covenants (Niskanen and Niskanen, 2004) or collateral requirements (Steijvers and Voordeckers, 2009). Venture capitalists may demand board seats, while trade credit suppliers may include late payment penalties in the contracts (Klapper et al., 2012; Paul & Boden, 2011). Upon extending grants, governmental agencies may, too, install control mechanisms, such as reporting requirements or clawback provisions (e.g., Jentsch, 2021). As such, external capital providers can have an extensive impact on the extent to which the firm is free to allocate its financial resources and, as such, undertake strategic changes.

We propose, therefore, a novel way to estimate the influence of external capital providers on firms' ability to introduce strategic changes. More specifically, in line with prior studies (e.g., Castellani et al., 2022, Lawless et al., 2015; Nofsinger & Wang, 2011), we study the level of financing diversity, or the number of distinct types of financing the firm has obtained. The greater the number of financing types a firm obtained, the greater its level of financing diversity. We argue that a greater financing diversity results in a greater ability of firms to introduce strategic changes, for at least four reasons. First, it can reduce a firm's dependence on one particular financing type. Second, it can have a positive signaling effect. Third, it may improve the firm's access to external capital. Fourth, the firm may obtain more diverse strategic input. As such, a firm with greater financing diversity should be better able to introduce strategic changes in response to environmental opportunities or environmental threats.

We test our hypotheses on self-collected data, by surveying 525 Belgian SMEs during September of 2020, after the first wave of COVID-19 had struck the Belgian economy. This arguably resulted in unexpected environmental opportunities and threats, which allowed us to survey firms about the number of strategic changes they had introduced during the first nine

months of 2020. Furthermore, in the same survey, we asked the SMEs about which of 4 different types of financing (e.g., bank-debt, non-bank debt, quasi-equity, and equity financing) they had attracted during 2019. This sudden, unexpected, and dramatic increase in environmental opportunities and threats during 2020 reduces potential endogeneity concerns between financing behavior and strategic changes. Indeed, it is impossible that firms were already adapting their financing diversity in 2019 in order to respond to the COVID-19 pandemic the following year. We based our measures of strategic changes on the composite measure of Hermann et al. (2014), which we divided in growth-oriented strategic changes (in response to environmental opportunities) and decline-oriented strategic changes (in response to environmental threats). This allows us to estimate the effect of financing diversity on a firm's ability to introduce strategic changes.

We opted for studying this relation in SMEs, for two reasons. First, it takes less time and effort for smaller firms to introduce strategic changes than it takes in large firms (Ebben & Johnson, 2005), as small firms are generally less bureaucratic, structured, and diversified (Forbes and Milliken, 1999). This makes small firms more insightful to study firms' immediate response to environmental opportunities and threats, such as the ones posed by COVID-19. Second, SMEs have a more constrained access to bank financing, and, thus, have to make use of a greater diversity of alternative financing providers than large firms (Casey & O'Toole, 2014). This makes SMEs a more insightful group of firms to study financing diversity.

This article aims to make three contributions. First, as argued above, we aim to untangle the fundamental conundrum on the relation between financial resources and strategic changes. While prior scholars have generally focused on the quantity of financial resources (e.g., Kraatz & Zajac, 2001), we follow the recent insight that, rather than the quantity, it is the extent to which the financial resources can be allocated towards a change in strategy that determines the ability of small firms to change their strategy (Brinckmann et al., 2019). Second, we answer the call for more research into the effect of external actors on strategic changes (Müller & Kunisch, 2018: 474). While we have detailed knowledge of the influence of firms' top-management teams, CEO, and board of directors on strategic change, we know far less about the effect of actors external to the firm on strategic changes. Our focus on financing diversity underscores that it is, indeed, important to consider external actors, as external capital providers seem to influence firms' ability to engage in strategic changes. Third, we contribute to the promising avenue of research about financing diversity. As SMEs have been shown to adhere to specific financing patterns (e.g., Moritz et al., 2016), it is important to increase our understanding of how these patterns affect firm behavior. We surveyed the usage of a broad

range of financing instruments, extending the traditional "debt versus equity" categorization (Cosh et al., 2009). We believe that our proposition that financing diversity increases firms' ability to introduce strategic changes, provides a potential insightful direction for further research into the effects of financing patterns on SME behavior.

5.2 Literature & hypotheses

In an increasingly dynamic environment, it is crucial for firms to be capable to introduce strategic changes in response to environmental changes. Often, strategic changes are introduced in response to environmental opportunities or threats, as firms seek to align their operations and strategy with the firm's environment (for a review, see Brozovic, 2018). As such, both environmental threats and opportunities can induce firms to introduce strategic changes (Kirtley & Mahoney, 2020).

Yet, not all firms are well-equipped to respond to such changes and introduce the necessary strategic changes. An important determining factor of a firm's ability to change, is its resource profile. According to the seminal work of Sanchez (1995; 1997), two characteristics of a firm's resources, in particular, determine its ability to introduce strategic changes.

The first, the flexibility of its resources. Sanchez (1995; 1997) argued that it are mostly those resources that could be re-allocated towards the activities needed for the introduction of a strategic change, that would help in introducing such strategic changes. The greater the number of alternative uses for a particular resource, the more strategic change actions it could help undertake (Sanchez, 1995; 1997). As such, scholars have studied the role of slack resources on strategic changes. Slack resources are defined as the "pool of resources in an organisation in excess of the minimum necessary to produce a given level of organisational output" (Nohria and Gulati, 1996: 1246), or "currently unused resources above those necessary to meet immediate business requirements, fund ongoing tasks, or meet explicit goals" (Liu et al., 2014: 49). They, thus, are excess resources that can be used when (Daniel et al., 2004) and how (Bourgeois, 1981) the firm's management wishes. However, the literature on the influences of slack resources on strategic changes, has yielded conflicting findings (for a review, see Chapter 4). This has led scholars to refer to the second characteristic of a firm's resource profile that, according to Sanchez (1995, 1997), determines its ability to introduce strategic changes: the extent to which the firm itself is able to flexibly allocate its resources, so-called "coordination flexibility" (Sanchez, 1995: 139).

Coordination flexibility refers to the ability of an organization to efficiently and effectively reorganize its resources and processes. It involves the internal flexibility to reconfigure its resources (e.g., employees, workflows, machinery, …) to respond to new challenges or opportunities. Having greater coordination flexibility means that a firm can "increase the range of feasible resource uses that an organization can imagine" Sanchez (1997: 75). Put differently, a firm with greater coordination flexibility can use its resources for more potential strategic changes than another firm with the same resources but less coordination flexibility. Note that many different kinds of coordination flexibility exist (Sanchez, 2004). For example, in human resource management, coordination flexibility has been associated "with the firm's ability to adapt the number of employees or the number of hours worked to changing external conditions" (Koch et al., 2013: 737), and has been shown to result in a greater ability to respond to environmental changes (Chang et al., 2013). More recently, the construct has also been found to hold predictive value in the relation between financial resources and strategic changes. Indeed, Brinckmann et al. (2019) show that the ability of start-ups to find and re-allocate financial resources is an important determinant of the firm's ability to introduce strategic changes when needed. This, while the quantity of a firm's financial slack resources did not have any effect (Brinckmann et al., 2019), showing the potentially insightful avenue for investigating a firm's coordination flexibility with respect to its financial resources in explaining the firm's ability to introduce strategic changes. It is in this avenue that we seek to further our knowledge on the relation between a firm's financial resources and its ability to undertake strategic changes in response to environmental opportunities and threats. We do so by introducing the concept of financing diversity to the strategy literature.

Financing diversity is to be understood as the number of distinct types of financing sources a firm has obtained (Castellani et al., 2022, Lawless et al., 2015; Nofsinger & Wang, 2011). The greater the number of different financing types, the greater the firm's financing diversity.

We believe that an increase in financing diversity may improve firms' ability to introduce strategic changes for at least two reasons. First, it may improve the terms and conditions of firms' financing agreements. Second, it may result in the firm receiving strategic advice and environmental information.

5.2.1 Financing diversity and financing terms and conditions

The financial resources SMEs are able to obtain are often coupled to control mechanisms that seek to minimize problems of adverse selection and moral hazard (Fu, Yang,

and An, 2019). Especially in small firms, capital providers are likely to demand a strict control over the terms of the financing agreements, restricting the managerial discretion over the use of the received financial capital through control mechanisms (Chaganti, De Carolis, & Deeds, 1996). These mechanisms aim to prevent the firm to use its financial resources for purposes other than initially agreed upon with the external financing provider, such as strategic changes. Banks may introduce debt covenants (Niskanen and Niskanen, 2004) or collateral requirements (Steijvers and Voordeckers, 2009), venture capitalists may demand board seats (Wynant, Manigart & Collewaert, 2023), trade credit suppliers may include late payment penalties in the contracts (Klapper et al., 2012; Paul & Boden, 2011), and governmental agencies may, as part of the grant agreement, install control mechanisms such as reporting requirements or clawback provisions (e.g., Jentsch, 2021). External financing providers may, then, hold such great influence over the firm that they will be able to control the firm's investment decisions (Rajan, 1992). Hence, when the firm is confronted with environmental changes that may require a strategic change, strict control mechanisms may constrain the management's ability in doing so. For example, as explained by Brinckmann et al. (2019), a firm may have obtained financing from a business angel or a venture capitalist, who may have invested because they believe in the "story" the firm owners were pitching to them. If later the founders seek to change the strategy, they would need the support from these external financing providers to avoid conflict that could threaten the existence of the firm. However, to obtain this support, the entrepreneurs may face objections, may have to spend time convincing, or may not even get consent. Even more, just the expectation of having to overcome potential friction or conflict, may sway entrepreneurs to stick to their predetermined strategy rather to respond to the environmental change in a flexible way (Wiltbank et al., 2009).

However, not all financing agreements include such control mechanisms, and not all control mechanisms are equally restrictive towards managerial discretion over the firm's resources and strategy. We see at least three reasons why greater financing diversity may result in better terms and conditions of its financing agreement.

First, a firm with multiple existing relationships with different types of financing sources, has a greater number of potential financing providers from which it can seek financing when needed. Hence, a firm with greater financing diversity is less susceptible to be adversely affected by a drop in supply form any one type of financing (Lawless et al., 2015). If one type of financing provider would offer financing at too restrictive terms, the firm has the option to obtain financing from an alternative type of financing. Greater supply in financing options results in lower prices and better terms and conditions for the demand-side (i.e., the firm)

(Drakos, 2013). For example, Ioannidou & Ongena (2010) show that firms who switch banks receive better loan rates upon switching. On the other hand, Menkhoff et al. (2006) show that firms who get locked-in into a long-term relationship with one single 'housebank', end up paying higher rates and receive worse financing terms. Hence, having a more diverse network of financing providers, should allow the firm to get better financing terms.

Second, as the firm spreads out its financing over multiple sources, the size of the financing extended by each source decreases. This lowers the incentive for each source to monitor the firm and its investments, as well as to include stringent control mechanisms (Aristei & Gallo, 2017; Tirri, 2007) such as covenants or (personal) guarantees.

Third, obtaining financing can also have a signaling effect (for a review, see Connelly et al., 2011). Signaling theory is fundamentally concerned with reducing information asymmetry between two parties (Spence, 2002). Asymmetry is particularly important in two broad types of information, information about quality and information about intent (Stiglitz, 2000). In the first type, information asymmetry is important when the external capital provider is not fully aware of the characteristics of the firm and its members. In the second case, information asymmetry occurs when the external capital provider is concerned about the firm's behavior or behavioral intentions (Elitzur & Gavious, 2003). A firm may send signals to its (potential) external capital providers, in an attempt to reduce any of the two types of information asymmetry. A firm can signal firm quality to external capital providers by, for example, obtaining debt financing (Flannery, 1986; Ross, 1973), obtaining private capital financing (Janney & Folta, 2006), or obtaining government grants (Islam et al., 2018). In other words, obtaining financing from one type of capital provider may improve how other types of capital providers perceive the firm's quality. And, as higher quality firms are charged less restrictive terms and conditions and lower prices in their financing agreements (Holton et al., 2013; Menkhoff et al., 2006), higher financing diversity should lead to less restrictive monitoring and control mechanisms associated with new financing agreements.

5.2.2 Financing diversity and environmental insights

An important determinant of strategic changes, are environmental changes. However, such environmental changes only result in strategic changes, if the firm does notice the environmental changes. Indeed, only after noticing the environmental threat or opportunity, the firm can respond to it. We argue that greater financing diversity may also help the firm discover more, and sooner, environmental threats and opportunities to which it can respond.

Financing providers may not only install control and monitoring mechanisms to protect their interests, they may also provide the firm with strategic advice, although this is mostly limited to providers of equity financing, such as business angels (Politis, 2008) or venture capitalists (Bacon-Gerasymenko, 2019). Relations with other types of financing may, however, also lead to a greater discovery of environmental opportunities and threats, as through contact with these financing providers, the firm may gather information about, for example, its environment.

To conclude, given that financing diversity may result in less stringent financing terms and conditions and more coordination flexibility, while it may also lead to the discovery of more environmental opportunities and threats, we hypothesize:

H1: Financing diversity has a positive effect on the extent to which SMEs introduce opportunity- or threat-oriented strategic changes.

On the other hand, we believe that having too much financing diversity could also be negative for firms' ability to introduce strategic changes. Managing relationships with too many different types of financing providers may become complex and cumbersome. Also, each financing provider is likely to install at least a minimum of control and monitoring mechanisms, irrespective of the firm's existing financing diversity. From this point on, having additional capital providers is likely to increase the total burden of control and monitoring mechanisms. Hence, we hypothesize:

H2: The positive effect of financing diversity on the extent to which SMEs introduce strategic diminishes in strength as the level of financing diversity increases

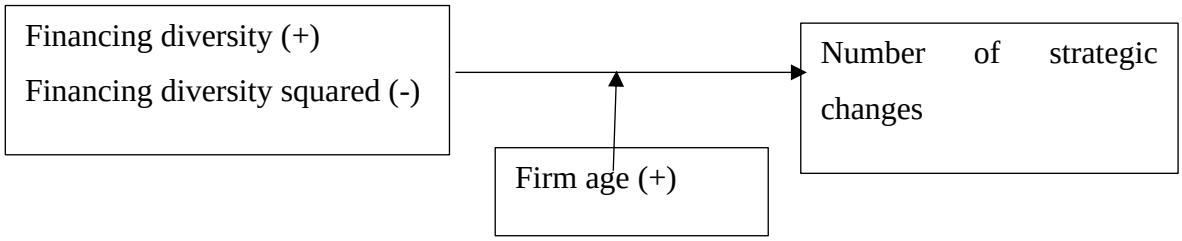
Important to note is that we implicitly assumed that firms *choose* to increase their number of financing providers, and are in the possibility to spread out their financing demand over as many financing providers as they want. However, not all firms can chose from how many and from which financing providers they obtain financing. Indeed, some firms face financing obstacles and have difficulties attracting external financing. These firms *have* to approach multiple financing providers in order to fulfill their financing demands. As such, for these firms, it is unlikely that a higher level of financing diversity results in less control mechanisms. Among SMEs, it are generally the younger firms who most often face financing obstacles (Beck et al., 2006), in line with the liabilities of newness and the accompanied lack of creditworthiness (Stitchcombe, 1965; Wiklund et al., 2010). Hence, we argue that younger firms might seek multiple financing providers because they *have to*, rather than because they

want to. For younger firms, financing diversity may, hence, not have the same positive effect on the firm's ability to introduce strategic changes:

H3: Firm age positively moderates the effect of financing diversity on the extent to which SMEs introduce strategic changes

Figure 5.1 provides a graphical representation of the hypotheses.

Figure 5.1: Hypothesized relations



5.3 Methodology

5.3.1 Data

We collected data by surveying a sample of 5,706 Belgian private SMEs, according to the definition of the European Commission (2021) (i.e. firms who employed less than 250 FTE during 2018 and had total assets worth below 43 million euros at the end of 2018). A total of 654 SMEs filled out the questionnaire by October 2020, resulting in a response rate of 11.7%. We contacted members of the top-management team at each firm through electronic mail, sending out 2 reminders over a 3-week span. Of the 654 SMEs who responded to the survey, 525 answered all relevant questions and formed the sample used in our analyses. Given that we surveyed small firms, members of the top-management team should all be aware of the strategic decisions made in the firm. T-tests did not reveal any significant differences between early- and late-respondents for the variables of interest, indicating that nonresponse bias should be limited.

Firms registered in Belgium operating with limited liabilities of shareholders are obligated to file their annual accounts. Hence, we combined the survey data with data of the surveyed firms' financial accounts, which is obtained from the Bel-First database of Bureau Van Dijk.

5.3.2 Variables

5.3.2.1 Dependent variable

We are interested to measure the ability of SMEs to introduce strategic changes in response to environmental opportunities and threats. Strategic changes can be defined as departures from the status quo with respect to the content or the scope of the firm's strategy (Herrmann & Nadkarni, 2014), and constitute of changes in the firm's resource allocation over its different strategic domains, potentially multiple concurrently (Mintzberg, 1973). Therefore, as a firms may introduce one or multiple strategic changes at the same time, we follow prior scholars and adhere to a composite measure of strategic changes, counting the total number of strategic changes a firm has introduced (Brunninge, Nordqvist, & Wiklund, 2007; Herrmann & Nadkarni, 2014; Karaevli & Zajac, 2013). We do so by relying on the composite index developed by Herrmann & Nadkarni (2014). Moreover, as we are interested in firms' ability to introduce strategic changes in response to environmental threats or opportunities, we distinguish *opportunity-oriented strategic changes* from *threat-oriented strategic changes*. The extent to which a firm can introduce both types of strategic changes, is dependent on the firm's ability to introduce strategic changes in general. Our hypotheses, thus, hold for both measures, although distinguishing opportunity-oriented from threat-oriented strategic changes may yield additional insights.

We depart from the measure of Herrmann & Nadkarni (2014)[11]. As such, our measure of opportunity-oriented strategic changes counts how many of the following 5 strategic changes the firm has introduced during 2020: (i) started exporting to one or more new international markets, (ii) added new product lines or segments, (iii) completed new mergers and acquisitions, (iv) bought new properties, plants, and equipment, (v) increased R&D expenditures. At the same time, our measure of threat-oriented strategic changes counts how many of the following 4 strategic changes the firm has introduced during 2020: (i) exited from one or more international markets, (ii) eliminated product lines or segments, (iii) sold properties, plants, and equipment, (iv) decreased R&D expenditures.

5.3.2.2 Independent variable

We measure *financing diversity* in line with prior scholars (e.g., Castellani et al., 2022; Lawless et al., 2015; Nofsinger & Wang, 2011) by building a financing diversity index (FDI) that is

[11] Herrmann & Nadkarni (2014) bundled the 9 strategic changes into 1 measure. This, as they studied firms' level of strategic change. Strategic change is the departure from the status quo in a firm's current strategy. Hence, why threat-oriented and opportunity-oriented changes can be bundled into one measure. On the other hand, we are interested in firms' ability to introduce strategic changes, which may or may not be part of a strategic change. We deem it, therefore, more insightful to make the distinction between threat- and opportunity-oriented strategic changes.

equal to the total number of types of external sources of financing the firm obtained during 2019. We distinguish four different types of financing sources: (i) bank debt, (ii) non-bank debt, (iii) quasi-equity, (iv) equity financing. As such, the financing diversity score ranges from 0 to 4.

Each of these four types of financing consists of several financing sources[12], 10 in total. We surveyed the respondent about the firm's use of all 10 of these sources. If a firm attracted financing from any source that can be categorized as a particular financing type, we mark the firm as having obtained financing from that particular financing type. For example, if a firm obtained trade credit financing, we mark the firm as having obtained 'non-bank debt'. This allows us to better reflect the actual diversity than summing how many of the 10 different financing sources a firm has obtained, as financing sources belonging to the same financing type may be similar to one another, and, therefore, not contribute to actual financing diversity.

Table 5.1 displays how many firms made use of each of the four different types of financing. As could be expected among SMEs, bank debt is the most-used type of financing, while equity-based financing was the least used. At the same time, equity-based financing results in the highest average number of both opportunity-oriented strategic changes and threat-oriented strategic changes, although the averages do not differ significantly among the different types of financing.

Table 5.1: components of financing diversity

Financing type	Number of firms who obtained this type of financing (N = 525)	Average number of opportunity-oriented strategic changes	Average number of threat-oriented strategic changes
Bank debt	304	1.49	0.30
Non-bank debt	254	1.43	0.26
Quasi-equity	131	1.69	0.29
Equity	8	1.75	0.38

5.3.2.3 Moderating variable

We control for *firm age*, as the natural logarithm of the number of years since incorporation.

[12] Bank debt consists of credit lines or credit cards, short-term bank loans, long-term bank loans; non-bank debt consists of trade credit, leasing, factoring; quasi-equity consists of informal loans, government grants; equity financing consists of business angels, venture capital or private equity financing.

5.3.2.4 Control variables

We include several control variables, all measured in 2019, which have been shown to affect strategic change, or firms' financing behavior. Larger firms may have more complex processes for *firm size* as the natural logarithm of total assets.First, we control for the firm's available resources, by including several measures of resource slack. We measure potential slack as the equity-to-debt ratio, adjusted by subtracting the median ratio of all Belgian SMEs in the same industry (NACE 3-digit) as the focal firm (Bromiley, 1991; George, 2005; Vanacker et al., 2017). The higher the equity-to-debt rate relative to the industry median, the more the firm has room to attract additional debt (George, 2005; Paeleman & Vanacker, 2015). Recoverable slack is measured as the ratio of inventories and account receivables to total assets, from which the industry median (NACE 3-digit) is subtracted (Paeleman & Vanacker, 2015; Vanacker et al., 2017). Financial slack is measured in similar fashion. We calculate the firm's cash ratio by comparing the level of cash and cash equivalents available within the firm scaled by its total assets. Then, again following prior scholars (e.g., Paeleman et al., 2017; Vanacker et al., 2017), we subtract the median cash ratio of all SMEs in the firm's industry (NACE 3-digit) from the firm's cash ratio. The last measure of slack we include is HR slack, which is equal to the ratio of employment costs to total assets, relative to the industry median. The use of employee costs is argued to better capture the quantity and quality of human resources, compared to the number of employees (Vanacker, Collewaert, & Paeleman, 2013).

Top-management team size has a positive effect on the number of strategic changes SMEs undertake (Brunninge et al., 2007). Hence, we control for the number of member that are part of the top-management team. Also, firms with more growth ambition, initiate more strategic changes (Wang et al., 2021). We include the *intangible assets ratio*, defined as the ratio of intangible assets to total assets, as it is used as a measure of firms growth potential (Villalonga, 2004). Firms with digital activities or processes were less (negatively) affected by the COVID-19 lockdowns. Hence, we asked the respondent whether the firm was already significantly focusing on digitalization in 2019. We include a dummy *digitally active* equal to 1 if the respondent answers yes. Strong past performance reinforces the conviction in the current strategy, while weak performance creates a motivation to change (Barker III & Barr, 2002; Barker III & Duhaime, 1997; Greve, 1998). We include *EBITDA/total assets* as a measure of performance (Paeleman & Vanacker, 2015). Firms that are part of a group (and are not the mother), may not fully be responsible for their strategic decisions and may also possibly rely on funds or employees supplied by the group. Hence, we include the variable *daughter*, which is a binary variable equal to 1 if there is a single operating company which owns more

than 50% of the firm's shares. Family firms may pursue non-economic socio-emotional wealth, which may result in a different response to environmental change, as family-owned firms are characterized by a long-term and family-centered focus (Daspit, Chrisman, Ashton, & Evangelopoulos, 2021). Hence, we include a dummy variable *family firm* that is equal to 1 if the ownership of the firm is, for at least 50%, in hands of members of one family (Gallo & Sveen, 1991; Gottschalck et al., 2020). In Belgium, limited liability firms can choose among several legal forms but BVBAs are by far the most common legal form. They face lower equity requirements than NV limited liability firms, can only issue registered sharers, which can also not be publicly issued and can only be transferred after approval of the other shareholders. We include a dummy variable *BVBA* that equals one when a firm is founded as a BVBA limited liability firm, and zero otherwise. Further, since there may be geographic or cultural differences in strategic decision making, we include two dummy variables that indicate whether the firm's headquarters are located in either *Brussels* or in *Wallonia*, as opposed to *Flanders*, which are the 3 regions in Belgium. Our final control variable are *industry dummies*, based on the NACE sections.

5.3.3 Method

In order to prevent reverse causality, we time-lag all independent variables by one year. Moreover, we rely on COVID-19 as an exogenous shock that increased firms' need for strategic changes significantly. At the same time, COVID-19 posed both opportunities and threats for firms (e.g., Kuckertz et al., 2020; Laverty et al., 2020) – as is the case in any natural disasters (e.g., Torres et al., 2019). Hence, it is impossible that firms structured their financing diversity during 2019 in anticipation of the opportunities and threats imposed by the COVID-19 lockdowns in 2020. Hence why relying on COVID-19 as an exogeneous shock significantly reduces reverse causality concerns.

5.4 Results

5.4.1 Descriptives

Table 5.2 describes the mean, standard deviation, and distribution of the different variables of interest. On average, the SMEs in our sample undertook 1.31 different opportunity-oriented strategic changes and 0.25 threat-oriented strategic changes during the first 9 months of 2020. They obtained financing from, on average, 1.30 different financing types, and the median firm

obtained financing from just 1 type of financing. Firms are on average 29 years old and hold 8.5 Million euros in assets.

As could be expected, the median of the four different resource slack variables is close to 0, given that each measure is a comparison of the firm's ratio to its respective industry median. Furthermore, firms have on average little over 4 top-management team members, and an intangible ratio close to zero (0.02). This, as most firms do not hold any intangible assets. 37.1% of firms focused on digitization during 2019. The EBITDA-margin is on average 13.2%, which is driven to some extent by a few firms with very high margins (maximum is 89.3% and median 11.3%). Hence why we winsorize all variables (except financing diversity, the strategic changes measures, and dummy variables). Finally, 57.7% of firms are daughter companies, 61.8% of the SMEs in our sample are family-owned, 34% operate as a BVBA and 4% have their headquarters located in Brussels, while 14% have theirs in Wallonia.

Table 5.2: Descriptive statistics

	Average	sd	Min	p(25)	Median	p(75)	Max
Opportunity-oriented strategic changes	1.306	1.210	0.000	0.000	1.000	2.000	5.000
Threat-oriented strategic changes	0.248	0.499	0.000	0.000	0.000	0.000	3.000
Financing diversity	1.296	0.966	0.000	0.000	1.000	2.000	4.000
Firm age	29.31	16.10	0.00	17.50	28.00	39.00	93.00
Firm size (thousands)	8582	8893	159	2349	5251	11666	41287
Financial slack	0.041	0.145	-0.224	-0.054	-0.009	0.107	0.549
Potential slack	0.018	0.243	-0.869	-0.142	-0.002	0.164	0.590
HR slack	0.041	0.304	-0.458	-0.135	-0.010	0.129	1.516
Recoverable slack	0.039	0.202	-0.458	-0.104	0.038	0.195	0.434
TMT size	4.037	2.208	1.000	2.000	4.000	5.000	15.000
Intangible asset ratio	0.020	0.062	0.000	0.000	0.001	0.012	0.693
Focus on digitization	0.371	0.484	0.000	0.000	0.000	1.000	1.000
EBITDA/total assets	0.132	0.149	-1.054	0.057	0.113	0.203	0.893
Daughter	0.577	0.495	0.000	0.000	1.000	1.000	1.000
Family owned	0.618	0.486	0.000	0.000	1.000	1.000	1.000
BVBA	0.340	0.474	0.000	0.000	0.000	1.000	1.000
Brussels	0.040	0.197	0.000	0.000	0.000	0.000	1.000
Wallonia	0.140	0.348	0.000	0.000	0.000	0.000	1.000

Table 5.3 describes the correlation among the variables of interest. The correlations with an absolute value greater than 0.086 are significant at the 95% confidence interval.

The correlation among our two strategic changes variables is 0.22. This indicates that firms responded, to some extent, to both opportunities and threats simultaneously. Also note that the financing diversity is significantly positively correlated with opportunity-oriented strategic changes (0.22), but not with threat-oriented strategic changes (0.05). Furthermore,

firm size (0.15) TMT size (0.24), and a focus on digitalization (0.20) are also significantly positively correlated with opportunity-oriented strategic changes. Firm age (0.11) and focus on digitalization (0.10) are significantly positively correlated with threat-oriented strategic changes), while potential slack (-0.10) is significantly negatively correlated.

Financing diversity is significantly negatively correlated with both financial slack and potential slack, and also with EBITDA/total assets margin. The negative correlation with financial slack could be because larger financing diversity leads to better access to external financing, which, in turn, allows firms to reduce their "financial buffer" that is financial slack. Financing diversity is positively correlated with firms' intangible asset ratio, indicating that firms with more growth opportunities seemingly use more types of financing.

5.4.2 OLS regression

Table 5.5 displays the results of our OLS regression models. Models 1 to 4 present the effects of our independent variables on the number of opportunity-oriented strategic changes, and Models 5 to 8 present the results for threat-oriented strategic changes.

Model 1 includes only the control variables. It shows that an increase in TMT size, firm size and a focus on digitalization all significantly positively influenced the number of opportunity-oriented strategic changes firms undertook during 2020. Model 2 adds the linear effect of financing diversity, showing that financing diversity significantly positively influences opportunity-oriented strategic changes: attracting financing from 1 additional financing type, increases the expected number of opportunity-oriented strategic changes by 0.25 ($p<0.001$). The effect is linear, as Model 3 does not show any effect of the squared term of financing diversity. Finally, Model 4 shows that financing diversity has a more positive effect on the number of opportunity-oriented strategic changes in older firms, although its effect becomes curvilinear in older firms as well. With respect to opportunity-oriented strategic changes, we, thus, find support for hypothesis 1 (financing diversity positively affects firms' ability to introduce strategic changes) and hypothesis 2 (firm age positively moderates this relationship).

Table 5.3: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Opportunity-oriented strategic changes	1.00																	
2	Threat-oriented strategic changes	**0.22**	1.00																
3	Financing diversity	**0.22**	0.05	1.00															
4	Firm age	-0.04	**0.11**	-0.05	1.00														
5	Firm size (thousands)	**0.15**	0.05	-0.01	**0.21**	1.00													
6	Financial slack	-0.04	-0.06	**-0.23**	0.02	-0.06	1.00												
7	Potential slack	-0.02	**-0.10**	**-0.20**	0.20	**0.10**	**0.38**	1.00											
8	HR slack	0.00	0.06	0.00	-0.11	**-0.31**	-0.02	**-0.27**	1.00										
9	Recoverable slack	-0.02	0.00	0.04	-0.04	**-0.11**	**-0.34**	**-0.14**	**0.19**	1.00									
10	TMT size	**0.24**	**0.09**	0.06	0.05	**0.30**	-0.04	0.05	-0.01	**0.10**	1.00								
11	Intangible asset ratio	0.08	0.00	**0.12**	**-0.16**	-0.02	**-0.15**	**-0.15**	-0.05	**-0.14**	0.07	1.00							
12	Focus on digitization	**0.20**	**0.10**	0.08	-0.03	0.08	-0.08	-0.06	0.00	0.03	**0.15**	0.06	1.00						
13	EBITDA/total assets	0.04	-0.03	-0.10	-0.04	-0.08	**0.28**	**0.29**	-0.04	**-0.09**	0.00	**-0.11**	0.08	1.00					
14	Daughter	0.08	-0.03	0.01	**0.12**	**0.18**	-0.04	0.01	0.00	0.10	**0.18**	0.05	0.03	-0.06	1.00				
15	Family owned	0.01	0.06	0.05	**0.12**	0.03	0.00	-0.01	-0.06	-0.02	0.00	**-0.14**	-0.02	**-0.10**	**-0.11**	1.00			
16	BVBA	-0.07	-0.06	0.04	**-0.29**	**-0.38**	0.00	**-0.13**	**0.10**	0.01	**-0.25**	-0.07	-0.07	0.07	**-0.23**	0.04	1.00		
17	Brussels	-0.02	0.06	-0.08	0.02	-0.06	-0.04	**-0.09**	0.00	-0.03	0.05	0.01	0.03	-0.01	0.00	0.00	-0.04	1.00	
18	Wallonia	0.00	-0.04	0.02	0.00	0.01	-0.04	-0.06	0.00	0.00	0.02	**0.11**	-0.04	-0.01	-0.07	-0.03	-0.06	-0.08	1.00

Correlations (in absolute terms) greater than 0.086 at $p < 0.05$, greater than 0.112 at $p < 0.01$, greater than 0.144 at $p < 0.001$

Model 5 includes only the control variables in estimating the number of threat-oriented strategic changes. Interestingly, different control variables have different effects than they have for opportunity-oriented strategic changes. This shows that both types of strategic changes are influenced differently, pointing towards their relevance in helping to estimate a firm's *ability to introduce* strategic changes. Model 5 shows that potential slack negatively affected the number of threat-oriented strategic changes, while HR slack positively influenced this number. Interestingly, firms that focused on digitalization in 2019 were also more likely to introduce threat-oriented strategic changes. In Model 6, the linear effect of financing diversity is added to the model. Unlike for opportunity-oriented strategic changes, we do not find any significant effect. However, as shown in Model 7, we do find a significant inverse U-shaped effect. Moreover, as show in Model 8, this inverse U-shaped effect of financing diversity becomes even more pronounced as firms age.

Table 5.4: Regression results

VARIABLES	(1) Opportunity-oriented strat. changes	(2) Opportunity-oriented strat. changes	(3) Opportunity-oriented strat. changes	(4) Opportunity-oriented strat. changes	(5) Threat-oriented strategic changes	(6) Threat-oriented strategic changes	(7) Threat-oriented strategic changes	(8) Threat-oriented strategic changes
Fin. diversity		0.247***	0.186	0.159		0.013	0.134*	0.124*
		(0.059)	(0.151)	(0.152)		(0.026)	(0.073)	(0.073)
Fin. div.^{2}			0.023	0.037			-0.045*	-0.039
			(0.055)	(0.056)			(0.025)	(0.025)
Fin. diversity x Firm age[a]				0.327*				0.187***
				(0.178)				(0.067)
Fin. div.^{2} x Firm age[a]				-0.144**				-0.071***
				(0.071)				(0.027)
Financial slack[a]	-0.063	-0.016	-0.017	-0.013	-0.018	-0.015	-0.014	-0.010
	(0.059)	(0.059)	(0.059)	(0.059)	(0.026)	(0.026)	(0.026)	(0.026)
Potential slack[a]	-0.014	0.019	0.019	0.027	-0.063**	-0.061**	-0.061**	-0.055*
	(0.056)	(0.057)	(0.057)	(0.057)	(0.029)	(0.030)	(0.030)	(0.030)
HR slack[a]	0.109	0.108	0.110	0.117	0.052*	0.051*	0.048	0.052*
	(0.078)	(0.079)	(0.079)	(0.077)	(0.030)	(0.030)	(0.030)	(0.030)
Recov. slack[a]	-0.058	-0.049	-0.049	-0.052	-0.027	-0.026	-0.026	-0.026
	(0.056)	(0.054)	(0.054)	(0.054)	(0.026)	(0.026)	(0.026)	(0.026)
TMT size	0.074**	0.069**	0.068**	0.071**	0.009	0.009	0.010	0.009
	(0.029)	(0.029)	(0.029)	(0.029)	(0.012)	(0.012)	(0.012)	(0.012)
Firm age[a]	-0.057	-0.063	-0.063	-0.111	0.031	0.030	0.031	-0.021
	(0.058)	(0.056)	(0.056)	(0.093)	(0.026)	(0.026)	(0.027)	(0.033)
Firm size[a]	0.194***	0.185**	0.185**	0.172**	0.041	0.041	0.042	0.035
	(0.074)	(0.075)	(0.075)	(0.074)	(0.032)	(0.032)	(0.032)	(0.032)
Intangible ratio[a]	0.090	0.055	0.053	0.053	-0.009	-0.011	-0.009	-0.007
	(0.058)	(0.059)	(0.059)	(0.060)	(0.028)	(0.028)	(0.028)	(0.028)
EBITDA/total assets[a]	0.084	0.087	0.087	0.083	0.010	0.011	0.012	0.009
	(0.058)	(0.056)	(0.056)	(0.056)	(0.025)	(0.025)	(0.025)	(0.025)
Daughter	0.079	0.084	0.084	0.099	-0.059	-0.059	-0.057	-0.050

	(0.113)	(0.111)	(0.111)	(0.111)	(0.049)	(0.049)	(0.049)	(0.048)
Family owned	0.069	0.037	0.034	0.025	0.043	0.041	0.048	0.041
	(0.111)	(0.109)	(0.109)	(0.109)	(0.047)	(0.047)	(0.047)	(0.047)
BVBA	0.084	0.060	0.060	0.069	-0.057	-0.058	-0.060	-0.051
	(0.127)	(0.124)	(0.124)	(0.122)	(0.055)	(0.055)	(0.055)	(0.054)
Brussels	-0.229	-0.099	-0.093	-0.104	0.122	0.129	0.119	0.117
	(0.294)	(0.286)	(0.286)	(0.281)	(0.131)	(0.132)	(0.131)	(0.128)
Wallonia	-0.137	-0.136	-0.143	-0.155	-0.079	-0.079	-0.063	-0.062
	(0.154)	(0.147)	(0.149)	(0.147)	(0.073)	(0.073)	(0.075)	(0.075)
Digitalization focus	0.557***	0.536***	0.533***	0.547***	0.142*	0.141*	0.146*	0.150*
	(0.162)	(0.163)	(0.163)	(0.160)	(0.083)	(0.082)	(0.082)	(0.082)
Industry dummies		YES	YES	YES		YES	YES	YES
Observations	525	525	525	525	525	525	525	525
R-squared	0.165	0.198	0.198	0.206	0.103	0.104	0.110	0.120

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; [a] standardized variable

5.5 Robustness analysis: Instrumental-variable regression

While our OLS estimation should be robust to reverse causality bias, the estimation of the effect of financing diversity on strategic changes may possibly still be affected by unobserved variable bias. Therefore, we perform an instrumental-variable regression to re-estimate the effect of financing diversity on both measures of strategic changes.

In the first stage of the model, we estimated the endogenous variable using the same factors used to predict the dependent variable of interest, but with one additional variable that served as the instrument. We follow prior scholars studying the effect of financing behavior (e.g., Fang et al., 2022a; Fang et al., 2022b) and rely on the industry-average of our independent variable (financing diversity) as the instrument. This, as causality is likely to run from the industry to the firm, and not vice versa (i.e., firms follow their financing diversity-industry standard). For an instrumental variable approach to correct for biases associated with endogeneity, the instrument used in the first stage must be established as both effective and valid (Semadeni et al., 2014). The validity of instruments are based on relevance and exogeneity.

As shown in Table 5.5, the instrument is quite strong, as the Kleibergen-Paap test F statistic is around the critical value of 10 (9.11) (Stock & Yogo, 2005). An increase of 1 type of financing diversity in the industry-average, results in a predicted increase of 0.433 types of financing diversity. Also, the Kleibergen-Paap rk LM test support the exogeneity (χ2=5.743; p=0.017) of our industry-average instrumental variable.

The second-stage estimation, using the instrumented values of financing diversity, also indicates that financing diversity has a significantly positive effect on opportunity-oriented strategic changes (p=0.07), but not on threat-oriented strategic changes (p=0.85). Given that our instrument is only quite strong (i.e., 9.11), we also perform a weak instrument robust inference test. The Anderson-Rubin robust inference test is a method designed to provide valid hypothesis tests even when the instrument would be weak. The test provides further support for our first hypothesis: financing diversity significantly positively affects the number of opportunity-oriented strategic changes (χ2=4.01; p=0.045), although this effect is not found for threat-oriented strategic changes. (χ2=0.04; p=0.848).

Table 5.5: Two-stage estimation approach using instrumental variables

Dependent variable	(1) Opportunity-oriented strategic changes	(2) Threat-oriented strategic changes
Financing diversity	0.867*	0.028
	(0.480)	(0.145)
Financial slack[a]	0.104	-0.010
	(0.940)	(0.032)
Potential slack[a]	0.089	-0.061*
	(0.094)	(0.034)
HR slack[a]	0.136*	0.047*
	(0.081)	(0.028)
Recov. slack[a]	-0.015	-0.016
	(0.061)	(0.025)
TMT size	0.064*	0.012
	(0.033)	(0.012)
Firm age[a]	-0.062	0.038
	(0.061)	(0.027)
Firm size[a]	0.190**	0.042
	(0.084)	(0.030)
Intangible ratio[a]	0.008	-0.015
	(0.094)	(0.035)
EBITDA/total assets[a]	0.109*	0.050
	(0.056)	(0.023)
Daughter	0.081	-0.080
	(0.120)	(0.050)
Family owned	-0.012	0.043
	(0.130)	(0.047)
BVBA	-0.012	-0.052
	(0.150)	(0.059)
Brussels	0.293	0.133
	(0.388)	(0.145)
Wallonia	-0.110	-0.091
	(0.156)	(0.071)
Digitalization focus	0.485***	0.174**
	(0.180)	(0.081)
First-stage test of excluded instruments		
Instrument		
Industry-averaged financing diversity	0.433*** (0.143)	0.433*** (0.143)
Weak identification test – Kleibergen-Paap Wald rk F statistic	9.11	9.11
Weak instrument robust inference – Anderson Rubin Wald test F	4.01**	0.04
Observations	525	525

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; [a] standardized variable

5.6 Discussion

Our results show that firms with greater financing diversity were able to introduce a greater number of strategic changes during COVID-19, both in response to environmental threats and opportunities. This holds when controlling for the firm's (financial) slack resources, indicating that the effect of financing diversity goes beyond the provision of resources or access to financing, an effect suggested by Castellani et al. (2022). Instead, we believe that greater financing diversity results in more favorable financing terms and conditions, and in the discovery of more strategic threats and opportunities. Both factors result in so-called coordination flexibility (Sanchez, 1995, 1997), which is an important enabler of strategic changes.

Our results show that firms who obtained financing from a greater number of different financing types during 2019, introduced a greater number of strategic changes during the first 9 months of 2020, a period during which the first COVID-19 lockdowns were instated. This period arguably resulted in many unforeseen environmental opportunities and threats, to which the firm could not have prepared its financing profile. Hence, this exogeneous shock allowed us to distinguish a potential causal effect from financing diversity to strategic changes, as, otherwise, it could well be that firms change their financing diversity in anticipation for potential strategic changes. Our results not only show that financing diversity has a positive effect on firms' ability to introduce strategic changes, we also find no significant effect of financial slack. This is in line with the findings of Brinckmann et al. (2019), who showed that only start-ups their ability to leverage their financial resources, and not the quantity of those financial resources, positively affected their ability to introduce strategic changes. We, thus, extend their findings towards SMEs. At the same time, our results provide support to the point of Müller & Kunisch (2018) that external actors, such as external capital providers, have an important influence on firms' ability to change their strategy.

Interestingly, our results also show that while the relation between financing diversity and opportunity-oriented strategic changes in linear, its relation with threat-oriented strategic changes is curvilinear. Too much financing diversity results in fewer threat-oriented strategic changes, potentially indicating that managing too large a network of financing providers may result in a reduced ability to respond to environmental threats.

Finally, our results also provide support for the existence of a 'liability of newness', as younger firms benefit significantly less than older firms from having greater financing diversity. In their recent meta-analysis, Herhausen et al. (2020) found that firm age is positively

correlated with firms' ability to introduce strategic changes when needed, opposite to what they had expected. We believe our finding may provide more insight into this relation, as it shows that older firms may benefit more from certain enablers of strategic change, such as financing diversity, than younger firms – hence why firm age may have been found be positively correlated to firms' ability to introduce strategic changes.

5.6.1 Limitations and further research opportunities

As with all studies, this study has its limitations, as well as potential avenues for further research. First, we argued that financing diversity may result in a greater ability to introduce strategic changes for several reasons, such as more competition among financing providers, signaling effects, or strategic advice. However, we did not directly test any of these channels. Now that we have established that financing diversity is an important enabler of firms' ability to introduce strategic changes, it could be insightful to test the extent to which each of these reasons mediate its relationship. For example, future research may follow the example of Menkhoff et al. (2006) and study the terms and conditions of firms' financing agreements, so as to examine to what extent these change with a firm's financing diversity. Second, our instrumental variable regression showed that the positive effect of financing diversity only holds for opportunity-oriented strategic changes, and not for threat-oriented strategic changes. One potential explanation could be that an increase in financing diversity may lead to an increase in managers' confidence in the survival of the firm. This may result in a tendency to respond to opportunities, and to neglect potential threats. We believe this to be an promising avenue for future research. Last, our study exploited the COVID-19 situation as an exogeneous shock, allowing us to mitigate potential reverse causality bias. Yet, at the same time, this also implicates that our results may not be able to be generalized to a "normal" context. Future research could, therefore, replicate our study in a different context.

5.6.2 Implications for practice and policy

We see a few implications for practitioners. First, managers in SMEs should be aware that it is crucial to obtain financing from multiple financing providers. This not only improves access to external financing (Brinckmann et al., 2019), but it may also increase firms' ability to undertake strategic changes when needed. While more than half of the SMEs in our sample obtained bank debt, around half obtained non-bank debt and only a fourth of the sample obtained quasi-equity financing (e.g., private loan, subordinated debt). Less than 2% attracted equity financing. To increase financing diversity, many firms may consider, therefore,

obtaining quasi-equity or equity financing. Second, young firms, however, should be careful not to engage in too many financing relationships. For them, a high level of financing diversity may result in a lesser ability to introduce strategic changes in response to environmental opportunities and threats. As such, they may profit more from bricolage techniques, as described by Brinckmann et al. (2019).

We also see two implications for policy makers. First, as financing diversity has such a positive effect on firms' ability to undertake strategic changes, policy makers may seek to promote a diverse financing landscape, in which access to external financing is not an obstacle. The latest draft for Belgium's fiscal reform does not reflect this. The draft proposal would eliminate the "dividend received deduction" (DRD) scheme, which is a tax exemption scheme applying to businesses that invest in the shares of other businesses. Under certain conditions, firms can use this scheme to deduct share dividends and capital gains 100% from their earnings. This, as the income had already been taxed at the distributing company. The DRD scheme is popular in particular among private equity firms, venture capitalists, and, to a lesser extent, business angels (Michielsen & Broens, 2023). Eliminating the DRD scheme, would, therefore, be adverse for the diversity in the Belgian financing landscape. Instead, we would recommend policy makers to facilitate the use of the scheme.

Second, subordinated private loans are a financing type different than bank debt and non-bank debt, which are the two most popular types of financing in our study. Policy makers who seek to increase firms' levels of financing diversity, may focus on promoting subordinated private loans. Therefore, we approve of the "win-win loan" scheme in Flanders, which has been made more attractive since the COVID-pandemic. This scheme applies to natural persons who grant a subordinated loan to a Flemish SME. As a reward, the lender receives a yearly fee from the Flemish government of 2.5% on the outstanding amount of the loan, through "tax credits" (i.e., an amount that can be subtracted from one's personal income tax). It also offers some protection: if the SME would not be able to pay back the borrowed amount, the lender can be rebutted up to 30% of the amount due in tax credits. There are some conditions to this scheme. First, the scheme only applies to subordinated loans of up to 75,000 euros, which is higher than the pre-COVID threshold of 50,000 euros. Second, the SME may not obtain more than 300,000 euros in total. Third, the duration of the loan has a minimum of 5 years, and a maximum of 10 years. This is a change from the prior fixed duration of 8 years. Fourth, the interest rate which the lender may charge, can be, currently, anywhere between 2.625% and 5.25%. This is a substantial increase over the prior thresholds of 0.75% to 1.50%. We approve of all three recent changes introduced in response to COVID-19 (i.e., higher loan amount, more flexible duration,

and an increase in interest rate) as we believe they make the win-win loan more attractive for lenders, stimulating Flemish SMEs' financing diversity. As such, we would encourage policy makers to keep these changes, even now that the COVID-pandemic has resided. Moreover, given the more recent increase in the risk-free interest rates, the popularity of the win-win loan may fade. Therefore, we believe it may be wise to bring the tax credit percentage of the Flemish win-win loan in line with its Walloon equivalent, which grants lenders a tax credit of 4% during the first 4 years, and 2.5% for the remainder of the loan.

Chapter 6
Conclusion

6.1 Aim of the PhD

Better understanding the driving and constraining factors behind strategic changes is needed for improving firms' long-term firm survival (Klammer et al., 2017; Müller & Kunisch, 2018). Strategic changes allow firms to adapt to changes in their environment, which can be both opportunities or threats (Kirtley & O'Mahony, 2023). Better understanding what makes firms better able to change their strategy may not only be of interest to academics, but also to practitioners and policymakers alike.

The aim of this dissertation stems from the the research question *"when do resources constrain strategic change, and when do they enable it?"* proposed by Müller & Kunisch (2018: 475). In their seminal review on strategic changes, they labeled the role of resources as one of the key "strategic change conundrums" left unanswered in strategic change research (Müller & Kunisch, 2018: 473).

This dissertation focused on firms' financial resources, and their role as enabling or constraining factors for strategic changes. We stated in the first paragraph of our introduction that "if resources are the building blocks of firm behavior, financial resources are the ingredients of those blocks". Financial resources are the resources that can be allocated most freely, while they can also be used to acquire different resources. Moreover, ultimately, generating financial resources through profits is the sole purpose of a firm (Friedman, 1970). Hence, the goal of this dissertation was to *improve our understanding of the effects of firms' financial resources on strategic changes*.

6.2 Contribution to the literature

In our search for improving our understanding of the effects of firms' financial resources on strategic changes, we have investigated the role of firms' (financial) slack resources, their access to external financing, and the relation with their external capital providers. We have approached strategic changes both from a single-dimensional perspective and a multi-dimensional perspective. We studied firms' general ability to introduce strategic changes, and their ability to introduce strategic changes in response to environmental opportunities and threats. Moreover, we investigated these effects in particular contexts, such as SMEs, family-owned firms, and during the COVID-19 pandemic. As such, we believe we have contributed

to many different streams in the "financial resources" and strategy literatures. We summarize them in the following sections.

5.2.1 External financial resources

We studied the role of firms' external financial resources on strategic changes in 2 different ways. Chapters 2 and 3 studied the effect of a constrained access to external financing on strategic changes. Firms with a constrained access to external financing are not able to obtain sufficient financing at reasonable terms from banks and alternative financing providers to meet their financing needs. Firms with such constrained access must, then, resort to internal financing to fund their strategic change opportunities (Rahaman, 2011). However, as internal financing is often insufficiently available, these firms frequently have to forgo such opportunities (Carpenter and Petersen, 2002).

Indeed, there is a large amount of literature showing that such constrained access to external financing reduces investments in research and development (Czarnitzki and Hottenrott, 2011; Hottenrott and Peters, 2012), employment (Bentolila et al., 2018; Siemer, 2019), or in export activities (Pietrovito and Pozzolo, 2021; Paeleman et al., 2017). Seemingly, constrained access to external financing has an important effect on strategic changes, by limiting firms' ability to introduce them.

Chapters 2 and 3 responded to the call of Williamson & Yang (2021) to find coping strategies for firms with constrained access to external financing, to document strategic changes which *can* be introduced by firms with constrained access to external financing and which *do have* a positive effect on firm performance. Drawing on the resource dependence theory, we proposed and showed that a constrained access to external financing induces firms to introduce cost-saving management innovations, which are strategic changes that have the goal of increasing the firm's efficiency.

Chapter 5 studied the effect of firms' relationships with their external capital providers on strategic changes. Relationships with external capital providers are a very insightful avenue to study the role of resources on strategic change, as they are the bridge between internal and external resources. Indeed, according to the resource-based view, relationships are an internal resource that may provide the firm with a sustained competitive advantage (Barney, 1991). The resource dependence theory, however, argues that a firm's relations with other organizations is not always a strength, but may also constitute a weakness if the other organizations hold too much power over the firm (Pfeffer & Salancik, 1978). These opposite views seem especially relevant to the effect of external capital providers on firms' ability to change their strategy.

Indeed, on the one hand, external capital providers may constitute a powerful enabling source of strategic changes. They may provide the firm with strategic advice, (Colombo and Grilli, 2010; Hellmann and Puri, 2002), and may increase the firm's investment discipline (Aivazian, Ge & Qiu, 2005). On the other hand, external capital providers may be averse to strategic changes, as it implies that the funds they invested in the firm are not used in the way they initially envisaged. Given the issue of moral hazard, they may, therefore, seek to limit the firm's ability to introduce strategic changes. Hence, external capital providers often end up limiting the extent to which managers are free to decide what to do with the firm's financial, or even nonfinancial, resources through control mechanisms (Chaganti et al., 1996).

5.2.2.1 Findings

Chapter 2 relied on survey data from the "Survey on the Access to Finance of Enterprises" (SAFE), which is run jointly by the ECB and the European Commission and covers firms in all euro area countries. Chapter 3, however, relied on self-collected Belgian data. Within both samples, we focused specifically on private, independent SMEs, for three reasons. First, as explained above, SMEs depend more critically on their ability to adapt their strategy to the environment. Second, constrained access to external financing is more commons among SMEs, who typically have limited historical financial information available (Berger and Udell, 1998) and relatively higher monitoring costs (Beck and Demirguc-Kunt, 2005). Third, private SMEs are less able to employ any of the solutions used by larger firms, such as pledging collateral, securing third-party certification, or conveying their credit quality via signaling (Kraemer-Eis and Passaris, 2015; Mac an Bhaird and Lucey, 2010; Stiglitz and Weiss, 1981). This makes SMEs a very interesting group of firms to study the effect of constrained access to external financing on firm strategy.

Both studies show that SMEs with constrained access to external financing are significantly more likely to introduce cost-saving management innovations. These strategic changes aim to increase the firm's efficiency by changing the firm's structure, administrative systems and management practices (Damanpour, 2014). We also find that the introduction of such cost-saving management innovations has a positive effect on firms' subsequent growth, both in revenue (Chapter 2) or profits (Chapter 3). As such, a constrained access to external financing may indirectly benefit firm growth by increasing firms' propensity to introduce cost-saving management innovations.

Some firms with constrained access to external financing introduce cost-saving management innovations in response to their financing constraints, which they would not have

introduced, if they had not been constrained. However, ultimately, firm growth would still be higher if the firm would not have had constrained access, as the positive effect of cost-saving management innovations on growth seems to be smaller (in absolute terms) than the negative direct effect of constrained access to external financing on growth.

Chapter 5 also relied on the data collected through our survey of Belgian SMEs in which we surveyed the firm about the number of strategic changes it had undertaken during the first 9 months of 2020, during which the COVID-19 pandemic struck. Importantly, we were able to survey the firm about both opportunity-oriented and threat-oriented strategic changes, allowing us to study firms' ability to respond to both environmental opportunities and environmental threats. We also asked the respondent, who was the firm's CEO or CFO, about the number of different types of financing sources the firm had obtained during 2019.

Our results confirmed that firms who obtained financing from a greater number of different financing types during 2019, introduced a greater number of strategic changes during the first 9 months of 2020. This period arguably resulted in many unforeseen environmental opportunities and threats, to which the firm could not have prepared its financing profile. Hence, this exogeneous shock allowed us to distinguish a causal effect from financing diversity on firms' ability to introduce strategic changes. Interestingly, our results also show that while the relation between financing diversity and opportunity-oriented strategic changes in linear, its relation with threat-oriented strategic changes is curvilinear. Too much financing diversity results in fewer threat-oriented strategic changes, potentially indicating that managing too large a network of financing providers may result in a reduced ability to respond to environmental threats. Finally, we found that younger firms benefit significantly less than older firms from having greater financing diversity.

5.2.2.1 Contributions

Chapters 2 and 3 provide support for the resource dependence theory. While cost-saving management innovations can increase growth, they are not very popular among managers. Seemingly, the realization that the firm has constrained access to external financing and will have lower growth, convinces managers to introduce changes to its strategy and make the firm more efficient. Indeed, by increasing its internally generated cashflows, the firm can fulfill some of its external financing demand in order to grow. This supports the notion that SMEs often need an "external push" in order to adopt innovations (Sawang & Unsworth, 2011). A constrained access to external financing seems to behave as this "external push" that drives the adoption of cost-saving management innovations. This adds to prior studies that document a

positive effect of constrained access to external financing on efficiency (Graziella et al., 2020), or firms' propensity to focus on efficiency (Sena, 2006).

At the same time, our results show that financing constraints may not always have a negative effect on innovation. This opposes prior studies that showed that financing constraints reduce firms' tendency to invest in opportunities with an uncertain pay-off, such as R&D (Hottenrott and Peters, 2012). This positive effect may have gone unnoted thus far, given that the vast majority of innovation literature has focused on technical (i.e. product or process) innovations rather than management innovations (Crossan and Apaydin, 2010). Investments in these innovation outcomes carry a higher level of uncertainty and up-front investments, making them more difficult to finance with external financing. It also contrasts the few prior studies on the relation between financing constraints and management innovations (Khan et al., 2021; Madrid-Guijarro et al., 2009). These studies have documented management innovations on an aggregate level, rather than those with a cost-saving goal, which have been shown to be have different motivations (e.g., Westphal et al., 1997).

Finally, not only do our findings show that financing constraints can have a positive effect on cost-saving management innovations, they also show that, although counter-intuitive, a constrained access to external financing may even indirectly benefit firm growth. This finding answers the call of Williamson & Yang (2021) to find coping strategies for firms with constrained access to external financing.

Chapter 5 showed that firms with greater financing diversity were able to introduce a greater number of strategic changes during COVID-19, even when controlling for the firm's financial slack resources. This indicates that the effect of financing diversity goes beyond the provision of financial resources, or access to financing such as suggested by Castellani et al. (2022). Instead, in line with Brinckmann et al. (2019), our results provide support for the argument that it is firms' ability to leverage their financial resources, and not the quantity of those financial resources, that determines their ability to introduce strategic changes when needed. As such, we believe that our findings show that financing diversity can be considered as a source of coordination flexibility (Sanchez, 1995, 1997), which is an important enabler of strategic changes. Moreover, Chapter 5 also provided support for the existence of a 'liability of newness', as it was shown that younger firms benefit significantly less than older firms from having greater financing diversity. In their recent meta-analysis, Herhausen et al. (2020) found that firm age is positively correlated with firms' ability to introduce strategic changes when needed, opposite to what they had expected. We believe our finding may provide more insight into this relation, as it shows that older firms may benefit more from certain enablers of

strategic change, such as financing diversity, than younger firms – hence why firm age may have been found be positively correlated to firms' ability to introduce strategic changes.

6.2.2 Internal financial resources

We focused specifically on the role of firms' internal financial resources for strategic changes in Chapter 4. We surveyed Belgian SMEs about the number of strategy changes they introduced during 2019, and coupled this data to their financial statements. This allowed us to study the effect of bundles of slack (combinations of financial slack and human resource slack) on the extent to which firms introduce strategic changes.

6.2.2.1 Findings

The findings in Chapter 4 showed that the bundle of high level of financial slack with a low level of HR slack leads to the highest number of strategic changes in non-family-owned firms. In family-owned firms, however, this bundle led to the lowest levels of strategic changes, as family-owned firms seemingly use their financial slack resources to buffer firm survival from environmental changes, rather than using it to respond to these changes. The bundle of slack resources that led to the fewest number of strategic changes in non-family-owned firms, on the other hand, was the combination of low levels of financial slack with low levels of HR slack. This negative effect was significantly less negative in family-owned firms, who are able to inject personal capital or sacrifice their own (or family employees') labor when needed.

6.2.2.2 Contributions

The results of this study add to the ongoing debate on the effect of resources on strategic changes by providing a better understanding of how and when slack resources constrain or enable strategic changes (Müller & Kunisch, 2018). Our findings provide support for the suggestion of Geiger & Cashen (2002) that different forms of slack may result in different strategic actions. They also provide more insight into the recently developed concept of "bundles of slack" (Paeleman et al., 2015), which allowed us to test the relevance of both the slack-as-resources-for-change" and the opposing "slack-as-a-buffer" perspectives (Cheng & Kesner, 1997, p. 2). More specifically, our results contribute to the strategic change literature by showing that an integrated view of slack-as-resources-for-change and slack-as-a-buffer for change is the most suitable perspective to describe the relation between slack resources and strategic changes. Non-family-owned firms who combine high levels of financial slack with low levels of HR slack undertake the greatest number of strategic changes. In line with the

slack-as-resources-for-change perspective, the financial slack resources allow the firm to invest in potential strategic opportunities. These opportunities are more easily discovered if, in line with the slack-as-a-buffer perspective, the firm's level of HR slack is low.

However, when the firm's goals include preserving the family owners' stock of socio-emotional wealth (SEW), such as in family-owned firms, firm survival becomes the firm's priority. Then, only the slack-as-a-buffer perspective holds. This is supported by our results, which provide, thus, further evidence for the Behavioral Agency Model (BAM) and its application in family-owned firms. Seemingly, if family-owned firms have low levels of HR slack, they use their financial slack to exploit their current strategy at the expense of exploring new strategies, as Hu et al. (2011) proposed. This is in line with prior studies that showed that family firms initiate less risky strategic changes as financial slack increases (Xu & Hitt, 2020).

Our study not only contributed to the strategic change literature, but also to the slack literature. First, our results provide support for the "resource constraints trap" documented by (Paeleman & Vanacker, 2015: 824). In this situation, in which firms have parallel resource constraints, the firm's management becomes so occupied on making do with the resources at hand, that it can no longer focus on strategic decision-making. We found that in non-family-owned firms, indeed, this bundle resulted in the fewest number of strategic changes. As such, our results provide additional color to the findings of Paeleman et al. (2015) that firms with parallel resource constraints had the shortest expected survival rates (Paeleman & Vanacker, 2015), given that strategic changes are an important determinant of long-term survival (Klammer et al., 2017). Family-owned firms are less prone to this resource constraints trap, given their ability to inject personal capital or sacrifice their own labor. Second, our study also adds additional color to the findings of Bentley & Kehoe (2020), who found that the interaction between financial and HR slack is positive for firm performance during strategic change, while both financial and HR slack negatively affect firm performance when the firm is not changing its strategy. Our findings that firms with parallel resource constraints undertake the fewest strategic changes, shines new light on the finding that such resource constraints would be detrimental for firm performance during a period of strategic change (Bentley & Kehoe, 2020). Indeed, it may implicate that managers in firms with parallel resource constraints realize that their firm's performance may deteriorate if the firm were to initiate strategic changes, consequently refraining from undertaking strategic changes. Hence, parallel resource constraints result in the fewest number of strategic changes.

6.3 Directions for future research

We see several insightful avenues for future research based on our findings. First, scholars may build on our study of the effect of a constrained access to external financing. The SAFE survey has a rotating panel component, meaning that only some firms are re-surveyed. Due to our limited sample size, our study was limited to studying the impact up to three years after measuring the firm's access to external financing. Using accounting data could allow for more long-term inference. It could be insightful to document whether the suppression effect of cost-saving management innovations fades out, remains constant or increases over time (i.e., financing constraints may then even have a positive effect on firm growth over time). This may even be possible by relying on the SAFE data in a few years' time. As the ECB is increasingly upping the percentage of firms that are re-surveyed, compared to firms who are surveyed for an initial time, more and more firms should be re-surveyed several years after having answered the cost-saving management innovation-question. Hence, we expect that in a few years' time, the SAFE dataset should provide researchers the opportunity to test the long-term effect of cost-saving management innovations.

Second, the role of internal resources in constraining or enabling strategic changes can be further examined by relying on the framework of Paeleman & Vanacker (2015), as our findings show that this framework is useful in explaining strategic changes. Given that we only considered financial and human resource slack, future scholars may extend our findings and consider *other types of slack*. One type of slack that may be of importance is potential slack. Lefebvre (2023) showed that the effect of potential slack on firm performance increased significantly during the COVID-19 pandemic and called for future research to study "what strategies [firms] developed with potential slack, and what performance they achieved in doing so" (Lefebvre, 2023: 23). As such, we believe that scholars could integrate potential slack into the bundles of slack framework and study its effect on strategic changes. Future research may also focus on types of slack not discussed in this dissertation, such as transient slack. Transient slack, a concept introduced by George (2005), emphasizes the demand for resources and separates it from the availability of resources. This should allow to better paint a picture of the "temporal patterns of an organization's resource generation and deployment profiles" (George, 2005: 664). For example, future research may study how a gap in firms' demand for financial resources and supply thereof is associated with strategic changes. Our study of constrained access to external financing also provides evidence that the dynamic between the demand for financial resources and their availability has implications for strategic changes.

Third, while we considered the *effect of family ownership as a moderating variable*, future scholars may consider different external capital providers and their effect on firms' goals, and, consequently, the relation between slack resources and strategic changes. Our study of the effect of a firm's financing diversity and its relationship with its external capital providers, provide support for the notion that other external parties should be considered when studying strategic changes.

A fourth potential avenue for future research departs from our findings with regards to firms' relationships with their external capital providers. Remember that we argued that financing diversity may result in a greater ability to introduce strategic changes for several reasons, such as more competition among financing providers, signaling effects, or strategic advice. However, we did not directly test any of these channels. It could be insightful to test the extent to which each of these reasons mediate its relationship, now that we have established that financing diversity is an important enabler of firms' ability to introduce strategic changes. Future research may follow studies such as Menkhoff et al. (2006) and study the terms and conditions of firms' financing agreements, so as to examine to what extent these change with a firm's financing diversity.

Fifth, our instrumental variable regression showed that the positive effect of financing diversity only holds for opportunity-oriented strategic changes, and not for threat-oriented strategic changes. One potential explanation could be that an increase in financing diversity may lead to an increase in managers' confidence in the survival of the firm. This may result in a tendency to respond to opportunities, and to neglect potential threats. We believe this to be a promising avenue for future research.

Sixth, our study exploited the COVID-19 situation as an exogeneous shock, allowing us to mitigate potential reverse causality bias. Yet, at the same time, this also implicates that our results may not be able to be generalized to a "normal" context. Future research could, therefore, replicate our study in a different context.

Seventh, while we used the COVID-19 pandemic as an exogeneous shock, we see another potential avenue for future research in the *recent increase in interest rates and decrease in external funding available, as an exogeneous shock* that could be exploited. This situation could be exploited, for example, to further test the effect of a constrained access to external financing on strategic changes and cost-saving management innovations. Anecdotal evidence from practice seems to indicate that our findings are more relevant than ever. Indeed, in the letter that startup accelerator Y Combinator sent to its portfolio companies, it noted that "the best way to prepare is to cut costs" (Y Combinator, 2022), which aligns with our finding that

firms change their strategy towards introducing cost-saving management innovations when having constrained access to external.

Eight, while we always studied how firms' strategic changes are influenced, it may not necessary be the case that more strategic changes are always better for firm performance. It is well-known that the inability to introduce strategic changes leads to underperformance and firm exit over time, but could it also be that there is *too much* strategic change? This is more general phenomenon in the management literature, which has been coined the "too-much-of-a-good-thing effect" (Pierce & Aguinis, 2013: 314), and, indeed, there are signs that there could also be *too many* strategic changes (e.g., Gaustad et al., 2019). If that is the case, could it be that the buffer effect of financial slack, or the constraining effect of monitoring mechanisms from external capital providers, prevent the firm from changing its strategy to such an extent that it is actually beneficial for performance?

6.4 Implications for practice

We see at least five implications of this dissertation for practice.

First, we believe that family-owned firms should be careful not to hold too much financial slack, especially when they hold low levels of human resource slack. This may result in slack behaving as a buffer to change, which, ultimately, leads to missed opportunities and threats not responded to. On the other hand, non-family-owned firms, however, should be careful not to get caught in a resource constraints trap (i.e. bundling low levels of financial and HR slack). This bundle not only reduces their ability to change, but also their strategic focus. As the firm gets too focused on making do with its resources, it can no longer focus on strategic opportunities. This is far less problematic for family-owned firms, who can, when necessary, inject personal capital or sacrifice their own labor to respond to environmental opportunities or threats.

Second, managers in SMEs should be aware that it is crucial to obtain financing from multiple financing providers. Not only does this improve their access to external financing (Brinckmann et al., 2019), it may also increase their firm's ability to undertake strategic changes when needed. While more than half of the SMEs in our sample obtained bank debt, around half obtained non-bank debt and only a fourth of the sample obtained quasi-equity financing (e.g., private loan, subordinated debt). Less than 2% attracted equity financing. Therefore, the route towards increasing financing diversity seems to lay in attracting quasi-equity or equity financing. Managers and owners in Belgian SMEs may need to more often

consider opening up their firms' capital for external equity investors. One potential helpful mechanism for managers seeking to obtain external equity financing, is the "vriendenaandeel" procedure in Flanders. This procedure aims to stimulate equity investments in Flemish firms, by offering a tax incentive to Flemish residents who invest in the equity of a Flemish firm. More specifically, for an amount of up to 75,000 euros, an investor receives a 2.5% tax credit on the invested amount, for a period of 5 years. A Flemish SME can obtain equity financing through this procedure for a total amount of 300,000 euros. As such, managers may more often consider this procedure, as it could stimulate their financing diversity significantly.

Third, young firms, however, should be careful not to engage in too many financing relationships. Seemingly, a high level of financing diversity seems to result in a lesser ability to introduce strategic changes in response to environmental opportunities and threats for young firms. Instead, they may profit more from bricolage techniques, as described by Brinckmann et al. (2019).

Fourth, external capital providers should be wary not to install too many control mechanisms in the firm, or limit the management's discretion over the firm's resources. This may hinder the firm's management to introduce strategic changes when necessary.

Fifth, managers should more often consider introducing cost-saving management innovations (e.g., lean business practices, just-in-time inventory, outsourcing). Only little more than a quarter of SMEs introduces cost-saving management innovations. Yet, they have a distinct positive effect on long-term revenue growth and profits. Yet, managers seemingly need to be pushed by external factors in order to introduce them, as they are only willing to do so when the firm has no other alternative to grow.

6.5 Implications for policy

Finally, this dissertation also offers several recommendations for policy makers, and in particular to those in Flanders and Belgium.

First, policymakers may consider promoting cost-saving management innovations among SMEs with constrained access to external financing, as our study also shows that this action is attainable for these firms, who have difficulties financing other growth opportunities. If more firms with constrained access to external financing would respond by introducing capital-saving management innovations - such as outsourcing, working-from-home, or process automation, the need for policy that is focused on easing access to external financing is reduced, which could be relevant in an environment of rising interest rates.

Second, policymakers should note the importance of a high level of financial resource slack in non-family-owned firms for their ability to introduce strategic changes and may stimulate the accumulation thereof. This may be accomplished by increasing the attractiveness of saving financial resources in the firm. With respect to Belgium, we propose therefore that the scope of the current legislation concerning the 'liquidatiereserve' ('liquidation reserve') could be widened. This legislation allows firms to "reserve" profits, by keeping the profits on the books for at least 5 years. After paying an additional corporation tax of 9.1% and waiting 5 years, shareholders may distribute these reserved profits at withholding tax of 5% instead of the current withholding tax rate of 30%. We see a few ways in which this legislation could be adapted so that it could be beneficial to strategic changes in (more) SMEs. First, the current legislation prohibits firms to make use of the reserved profits, in line with the "intangibility condition". This results in the cash sitting idle on a separate bank account for 5 years, while it could otherwise function as financial slack and stimulate strategic changes in non-family-owned firms and buffer SEW in family-owned firms. We also see several avenues through which the scope of this legislation could be increased. Currently, only small and micro firms are eligible to create a liquidation reserve. Our study, however, shows that all non-family-owned SMEs may benefit from additional financial slack resources. Hence, we believe that it may be beneficial for Belgian's economy if medium-sized firms were also to be allowed to create such a reserve. Moreover, a period of 5 years is, in an increasingly more dynamic economic environment, a long time. This may prevent many firms from using the liquidation reserve. Therefore, we argue that the period should be shortened to, for example, 3 years. This should still leave the firm with a sufficiently high level of slack resources to experiment with strategic opportunities. Last, the 9.1% additional corporation tax to be paid when reserving the profits, is cumbersome and is keeping SMEs from making use of the program (House of Finance, 2023). We believe it may be beneficial if the additional corporation tax were to be summed with the 5% withholding tax at the end of the 5-year period, resulting in a larger amount of financial slack that would be available to the firm. It would also halve the number of instances a tax would have to be paid, reducing administrative burden.

Third, as financing diversity has such a positive effect on firms' ability to undertake strategic changes, policy makers may seek to promote a diverse financing landscape in which access to external financing is not an obstacle. The latest draft for Belgium's fiscal reform does not reflect this. This draft proposal would have eliminated the "dividend received deduction" (DRD) scheme, which is a tax exemption scheme applying to businesses that invest in the shares of other businesses. Under certain conditions, firms can use this scheme to deduct share

dividends and capital gains 100% from their earnings. This, as the income had already been taxed at the distributing company. The DRD scheme is popular, in particular, among private equity firms, venture capitalists, and, to a lesser extent, business angels (Michielsen & Broens, 2023). Eliminating this scheme, would, therefore, be adverse for the diversity in the Belgian financing landscape. Instead, we would recommend policy makers to facilitate the use of the scheme.

Fourth, quasi-equity financing and subordinated private loans are the third most popular type of financing after bank debt and non-bank debt in our study. Policy makers who seek to increase firms' levels of financing diversity, may, therefore, focus on promoting subordinated private loans. Therefore, we approve of the "win-win loan" scheme in Flanders, which has been made more attractive since the COVID-pandemic. This scheme applies to natural persons who grant a subordinated loan to a Flemish SME. As a reward, the lender receives a yearly fee from the Flemish government of 2.5% on the outstanding amount of the loan, through "tax credits" (i.e., an amount that can be subtracted from one's personal income tax). It also offers some protection: if the SME would not be able to pay back the borrowed amount, the lender can be rebutted up to 30% of the amount due in tax credits. There are some conditions to this scheme. First, the scheme only applies to subordinated loans of up to 75,000 euros, which is higher than the pre-COVID threshold of 50,000 euros. Second, the SME may not obtain more than 300,000 euros in total. Third, the duration of the loan has a minimum of 5 years, and a maximum of 10 years. This is a change from the prior fixed duration of 8 years. Fourth, the interest rate which the lender may charge, can be, currently, anywhere between 2.625% and 5.25%. This is a substantial increase over the prior thresholds of 0.75% to 1.50%. We approve of the three recent changes (i.e., higher loan amount, more flexible duration, and an increase in interest rate) as we believe they make the win-win loan more attractive for lenders, stimulating Flemish SMEs' financing diversity. Given the more recent increase in the risk-free interest rates, however, the popularity of the win-win loan may fade. Therefore, we believe it may be wise to bring the tax credit percentage of the Flemish win-win loan in line with its Walloon equivalent, which grants lenders a tax credit of 4% during the first 4 years, and 2.5% for the remainder of the loan.

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Annex: Self-collected survey

Q1 Wat is de naam van de onderneming? _____

Q2 Wanneer werd de onderneming opgericht? _____

Q3 Hoeveel werknemers (voltijds equivalenten) stelt de onderneming vandaag te werk? __

Q4 Gelieve aan te kruisen welke criteria van toepassing zijn op het bedrijf, meerdere antwoorden zijn mogelijk: *(een familie wordt beschouwd als mensen die door bloedverwantschap of het huwelijk met elkaar verbonden zijn)*

- meer dan 50% van de eigendom is in handen van één familie
- één familie heeft beslissende invloed op de bedrijfsstrategie of op de opvolgingsbeslissingen
- een meerderheid of ten minste twee leden van het management zijn afkomstig uit één familie
- het bedrijf wordt als een familiebedrijf beschouwd
- geen van bovenstaande antwoorden zijn van toepassing

Q5 Vul onderstaande tabel aan voor de aandeelhouders (indien het bedrijf meer dan 5 aandeelhouders telt, beperk de tabel dan tot de 5 grootste aandeelhouders).

	% aandelen in handen	Actief in het bedrijf		Maakt deel uit van de familie		Generatie. Stichtende generatie=eerste generatie.	Type	
Aandeelhouder 1 2 3 4 5	%	Ja	Nee	Ja	Nee		Natuurlijke persoon	Vennootschap

Q6 Wat voor type vennootschap is deze aandeelhouder?

	Private Equity	Venture Capital	Business Angel	Accelerator/Incubator/Universiteit	Andere
Aandeelhouder 1 2 3 4 5	○	○	○	○	○

Q7 Heeft de onderneming een familiecharter?

- Ja
- Nee

Q8 Hoeveel leden telt het topmanagementteam? _____

Q9 Heeft de onderneming een Raad van Bestuur?

- Ja
- Nee

Q10 Welke familiegeneraties zijn vertegenwoordigd in het topmanagement? Meerdere antwoorden mogelijk.

- 1ste
- 2de
- 3de
- 4de
- Latere generatie
- Geen

Q11 Uit hoeveel leden bestaat…

- De RvB
- leden van de RvB maken deel uit van de familie?
- Het aantal externe bestuurders in de RvB

Q12 Welke familiegeneraties zetelen in de Raad van Bestuur? Meerdere antwoorden mogelijk.

- Geen
- 1ste
- 2de
- 3de
- 4de
- Latere generatie

Q13 Is de voorzitter van de Raad van Bestuur een familielid?

- Ja
- Nee

Q14 Kruis in de volgende tabel de strategische veranderingen aan die werden **opgestart** in de afgelopen jaren. U kan meerdere jaren aanduiden per item; of niets indien de verandering nooit is opgestart.

	2018	2019	2020
Gestart met het exporteren naar nieuwe internationale markten	☐	☐	☐
Gestopt met het exporteren naar een of meerdere internationale markten	☐	☐	☐
Productlijnen of segmenten toegevoegd	☐	☐	☐
Productlijnen of segmenten verwijderd	☐	☐	☐
Nieuwe fusies en overnames voltooid	☐	☐	☐
Materiële vaste activa gekocht (onroerende goederen, technische installaties, uitrusting)	☐	☐	☐
Materiële vaste activa verkocht (onroerende goederen, technische installaties, uitrusting)	☐	☐	☐
Uitgaven aan R&D substantieel verhoogd	☐	☐	☐
Uitgaven aan R&D substantieel verlaagd	☐	☐	☐

Q15 Vervolg: Kruis in de volgende tabel de strategische veranderingen aan die werden geïmplementeerd in de afgelopen jaren. U kan meerdere jaren aanduiden per item; of geen, indien de implementatie niet heeft plaatsgevonden in de afgelopen drie jaar.

	2018	2019	2020
Verandering in organisatiestructuur, zoals een wijziging in centralisatie	☐	☐	☐
Herstructurering of procesveranderingen (bv: toename of afname in het aantal stappen om een activiteit uit te voeren)	☐	☐	☐
Het aantal werknemers substantieel verhoogd	☐	☐	☐
Het aantal werknemers substantieel verminderd	☐	☐	☐
Veranderingen in de verdeling van titels van leidinggevende leden van het managementteam (bv: functie, product, geografisch, of een mengvorm)	☐	☐	☐
Veranderingen in formele incentives toegekend aan leidinggevenden	☐	☐	☐

Q16 Wat was het resultaat van deze financieringsvorm aan te vragen in **2019**? Hoeveel van het gezochte bedrag heeft de onderneming verkregen?	Het volledige bedrag verkregen	75-99% verkregen	1-74% verkregen	Niets verkregen, onze aanvraag is afgewezen	Niet aan-gevraagd
Onderhandse lening (familie & vrienden, aandeelhouders of management, of andere onderneming maar geen leverancierskrediet)	○	○	○	○	○
Kredietlijn, rekening-courantkrediet of kredietkaart-schuld	○	○	○	○	○
Leverancierskrediet	○	○	○	○	○
Korte termijn banklening (bvb. overbruggingskrediet)	○	○	○	○	○
Lange termijn banklening (bvb. investeringskrediet)	○	○	○	○	○
Leasing	○	○	○	○	○
Factoring	○	○	○	○	○
Uitgifte schuldbewijzen (bvb obligaties)	○	○	○	○	○
Kapitaalsverhoging	○	○	○	○	○
Accelerator/Incubator/Universiteit	○	○	○	○	○
Business Angel	○	○	○	○	○
Venture Capital of Private Equity	○	○	○	○	○
Crowdfunding	○	○	○	○	○
Overheidssubsidies	○	○	○	○	○
Achtergestelde lening	○	○	○	○	○

Q17 Waarom werd de aanvraag in **2019** afgewezen, of werd er slechts een beperkt bedrag verkregen?

	Onvoldoende kredietwaardigheid	Onvoldoende winstgevend	Onvoldoende groei (potentieel)	Onvoldoende eigen vermogen	Geen motivatie gekregen/andere reden
Lijst van financieringsbronnen	☐	☐	☐	☐	☐

Q18 2020 was een buitengewoon jaar. We zijn daarom zeer geïnteresseerd in de bedrijfsfinanciering. Wat was het resultaat van de volgende financieringsvormen aan te vragen in **2020,** totnogtoe? Hoeveel van het gezochte bedrag heeft de onderneming verkregen?

	Het volledige bedrag verkregen	75-99% verkregen	1-74% verkregen	Niets verkregen, onze aanvraag is afgewezen	Niet aangevraagd
Lijst van financieringsbronnen	○	○	○	○	○

Q19 Waarom werd de aanvraag in **2020** afgewezen, of werd er slechts een beperkt bedrag verkregen?

	Onvoldoende kredietwaardigheid	Onvoldoende winstgevend	Onvoldoende groei (potentieel)	Onvoldoende eigen vermogen	Geen motivatie gekregen/andere reden
Lijst van financieringsbronnen	☐	☐	☐	☐	☐

Q20 We zijn ook geïnteresseerd in de financieringsactiviteiten van 2018. Wat was het resultaat van deze financieringsvorm aan te vragen in **2018**? Hoeveel van het gezochte bedrag heeft de onderneming verkregen?

	Het volledige bedrag verkregen	75-99% verkregen	1-74% verkregen	Niets verkregen, onze aanvraag is afgewezen	Niet aangevraagd
Lijst van financieringsbronnen	○	○	○	○	○

Q21 Waarom werd de aanvraag in **2018** afgewezen, of werd er slechts een beperkt bedrag verkregen?

	Onvoldoende kredietwaardigheid	Onvoldoende winstgevend	Onvoldoende groei (potentieel)	Onvoldoende eigen vermogen	Geen motivatie gekregen/andere reden
Lijst van financieringsbronnen	☐	☐	☐	☐	☐

Q22 Geef aan in welke mate u akkoord gaat met volgende stellingen (1-7):

- Over het algemeen hebben de topmanagers van mijn bedrijf de neiging om onze sector te leiden bij de introductie van nieuwe producten
- Over het algemeen is mijn bedrijf vaak de eerste die nieuwe producten in onze sector introduceert
- Over het algemeen reageren de topmanagers in mijn bedrijf op de concurrentie door nieuwe productinnovaties te introduceren
- Over het algemeen hebben de topmanagers van mijn bedrijf de neiging om de concurrentie voor te zijn bij het introduceren van nieuwe producten

Q23 Strategische veranderingen kunnen op verschillende manieren gemeten worden. Kruis in volgende tabel de strategische veranderingen aan die de onderneming de afgelopen jaren heeft geïntroduceerd.U kan meerdere jaren aanduiden per item; of geen.	2018	2019	2020
Grote kostenbesparingen	☐	☐	☐
Meer gesofisticeerde kostenbeheersingssystemen geïntroduceerd	☐	☐	☐
Afbouw/vermindering, verkoop of sluiting van inefficiënte activiteiten	☐	☐	☐
Begonnen met zaken doen met een land waarmee het bedrijf niet eerder zaken mee gedaan had	☐	☐	☐
Op een nieuwe plaats binnen België een activiteit begonnen	☐	☐	☐
Begonnen met zichzelf op een nieuwe manier in de markt te zetten	☐	☐	☐
Een aanzienlijke verandering in de bedrijfsorganisatie uitgevoerd	☐	☐	☐
Een aanzienlijke verandering in de interne werking van het bedrijf uitgevoerd	☐	☐	☐
Een belangrijk nieuw product of dienst geïntroduceerd of op eender welke andere manier het aanbod substantieel veranderd	☐	☐	☐
Met de ontwikkeling van een nieuw belangrijk product of dienst, of soortgelijk begonnen, die nog niet is geïntroduceerd	☐	☐	☐
Op voorhand maatregelen uitgevoerd die het bedrijf anders vroeg of laat zou zijn gedwongen te nemen	☐	☐	☐
Veranderingen uitdrukkelijk uitgevoerd om voorsprong te nemen op concurrenten	☐	☐	☐
Bewuste personeelsverminderingen	☐	☐	☐
Sterk ingezet op digitalisatie	☐	☐	☐

Aanzienlijk meer ingezet op duurzaamheid en ecologie	☐	☐	☐
Aanzienlijk meer ingezet op maatschappelijk verantwoord ondernemen	☐	☐	☐

Q24 Duid aan in welke mate volgende doelstellingen van belang zijn voor de onderneming (1-7):

- Erkenning van de familie door de lokale gemeenschap voor de genereuze acties van de onderneming
- Vergaring en behoud van sociaal kapitaal (bv.: sociale relaties, netwerken,...)
- Behoud van de familiereputatie doorheen de onderneming
- Onderhouden van de eenheid binnen de familie
- Behoud van de familiedynastie
- Onderhouden van onze familiewaarden doorheen de werking van onze onderneming
- Geluk van familieleden buiten de onderneming
- Verbeteren van de familieharmonie door het runnen van de onderneming
- Rekening houden met de behoeften van onze familie in onze zakelijke beslissingen

Q25 Geef aan in welke mate volgende stellingen overeenkomen met de huidige ondernemings-toestand (1-7):

- Al de beschikbare middelen zitten vast in huidige projecten
- De onderneming heeft een redelijke hoeveelheid aan middelen in reserve
- De onderneming heeft voldoende vrije beschikbare financiële middelen
- We kunnen altijd mankrachten vinden om te werken aan speciale projecten

Q26 Welk percentage van de omzet werd gerealiseerd in elk van de volgende afzetmarkten? (over 2018 – 2019 -2020):

- België
- Buurlanden van België (NL, FR, DE, LU, UK)
- Rest van Europa (dus excl. BE, NL, FR, DE, LU, UK)
- Amerika
- Azië
- Rest van de wereld

Q27 Veronderstel dat door een onverwachte ontwikkeling het operationele budget voor het volledige jaar met 10% verminderd wordt, hoe erg wordt de output van de onderneming over het komende jaar getroffen?

- 1: De output wordt niet getroffen
- 2: De output daalt minder dan 10%
- 3: De output daalt 10%
- 4: De output daalt tussen 10 en 20%
- 5: De output daalt meer dan 20%

Q28 Veronderstel dat door een onverwachte ontwikkeling al de werknemers 10% van hun tijd moeten spenderen aan werk dat volledig ongerelateerd is aan hun taken en verantwoordelijkheden, hoe erg wordt de output van de onderneming over het komende jaar getroffen?

- 1: De output wordt niet getroffen
- 2: De output daalt minder dan 10%
- 3: De output daalt 10%
- 4: De output daalt tussen 10 en 20%
- 5: De output daalt meer dan 20%

Q29 Stel dat de onderneming extra financiële middelen ontvangt ten belope van 10% van de omzet van het voorbije jaar (2020). Hoe zou dit geld gespendeerd worden? Meerdere antwoorden mogelijk.

- (extra) investeringsprojecten
- (extra) innovatieprojecten
- retentie/reserves
- uitkering aan de aandeelhouders
- terugbetaling van schulden
- Andere, vul in: _____

Q30 Hoe belangrijk zijn deze problemen geweest voor het bedrijf in 2020 (1-10)?

- Het vinden van klanten
- Concurrentie
- Toegang tot financiering
- Productie- en arbeidskosten
- Beschikbaarheid van geschikt personeel of ervaren managers
- Regulering

Q31 Hoe belangrijk zijn deze problemen geweest voor het bedrijf in 2019 (1-10)?

- Het vinden van klanten
- Concurrentie
- Toegang tot financiering
- Productie- en arbeidskosten
- Beschikbaarheid van geschikt personeel of ervaren managers
- Regulering

Q32 Hoe belangrijk zijn deze problemen geweest voor het bedrijf in 2018 (1-10)?

- Het vinden van klanten
- Concurrentie
- Toegang tot financiering
- Productie- en arbeidskosten
- Beschikbaarheid van geschikt personeel of ervaren managers
- Regulering

Q33 Met hoeveel procent verwacht u dat de omzet zal groeien over 2021?

- Meer dan 20% groei
- Tussen 5% groei en 20% groei
- Tussen 5% groei en 5% krimp
- Tussen 5% krimp en 20% krimp
- Meer dan 20% krimp
- Geen idee

Q34 Wat is de geplande groeidoelstelling voor het bedrijf over de komende 3 jaren (2021-2023)?

- Kleiner worden
- Dezelfde grootte blijven
- Bescheiden groei (minder dan 20% omzetgroei per jaar)
- Substantiële groei (meer dan 20% omzetgroei per jaar)

Q35 Duid aan in welke mate u het eens bent met volgende stellingen (1-7):

- Ons bedrijf heeft de mogelijkheid om investeringsprojecten te ondernemen die pas op lange termijn financiële rendementen opleveren
- Ons bedrijf investeert in projecten die risicovoller zijn dan die van de concurrentie
- Ons bedrijf investeert in projecten die minder winstgevend zijn dan die van de concurrentie, aangezien de aandeelhouders minder veeleisend zijn op gebied van het behalen van korte termijn financiële rendementen
- Ons bedrijf heeft de mogelijkheid om meerdere investeringsprojecten te ondernemen en om af te wachten hoe deze projecten evolueren overheen de tijd

Q36 Geef aan in welke mate u het internet gebruikt om de volgende financiële informatie op te zoeken (1-7):

- Wanneer u in het algemeen financiële informatie zoekt
- Wanneer u financiële informatie zoekt over vooraf gespecifieerde financiële diensten
- Wanneer u informatie zoekt die financiële diensten vergelijkt

Q37 Is uw bedrijf onderdeel van een groep ondernemingen?

- Ja
- Neen

Q38 Is uw onderneming de moederonderneming?

- Ja
- Nee

Q39 Hoe flexibel kan uw onderneming reageren op de volgende types van exogene veranderingen in de concurrentiële of regulerende omgeving (1-7)?

- Opportunistische shifts van de economische omstandigheden
- Het ontluiken van een onverwachte marktopportuniteit
- Het ontluiken van een nieuwe technologie die uw bestaande business negatief beïnvloedt
- Opportunistische shifts van klantenbehoeftes en -voorkeuren
- Het toetreden tot de markt door nieuwe concurrentie
- Negatieve veranderingen in regulatie vanuit de overheid

Q40 Bij benadering, wat was de omzet in euro in...?

- 2018
- 2019
- 2020

Q41 Wat is uw functie? Meerdere antwoorden mogelijk.

- Bedrijfsleider/CEO
- Financieel Directeur/CFO
- Andere, namelijk _____

Q42 Hoeveel jaar werkervaring, inclusief tijd gespendeerd in andere jobs, heeft u in totaal?

___

Q43 Wat is uw hoogst behaalde diploma?

- Lager onderwijs
- Middelbaar onderwijs
- Professionele Bachelor
- Academische Bachelor
- Master/Licentiaat
- Doctoraat
- MBA

Q44 Geef aan of u akkoord gaat met de volgende stellingen

- Bedrijfsinvesteringen dienen gefinancierd te worden met ingehouden winsten, zolang de kosten verbonden aan schuldfinanciering lager zijn dan de Return On Assets.
- Een onderneming waarvan de vaste activa gefinancierd zijn met eigen vermogen, mag de overname van een productiefaciliteit financieren met kortetermijnschulden.
- Leverancierskrediet kan gemakkelijk tot 20% interest op jaarbasis kosten.
- Jonge, snelgroeiende ondernemingen uit high-tech sectoren zouden hun investeringen voornamelijk met langetermijn bankfinanciering moeten financieren.
- Het uitgeven van preferente aandelen zonder stemrecht is een goede manier voor familiebedrijven om eeuwig de invloed van niet-familieleden te beperken.

Q45 Maakt u deel uit van de familie? (aan CEO)

- Ja
- Nee

Q46 Is de CEO lid van de familie? (aan CFO)

- Ja
- Nee

Q47 Bent u de oprichter van de onderneming? (aan CEO)

- Ja
- Nee

Q48 Is de bedrijfsleider ook de oprichter van de onderneming? (aan CFO)

- Ja
- Nee

Q49 Wat is uw geslacht? (aan CEO)

- Man
- Vrouw
- Zeg ik liever niet

Q50 Wat is het geslacht van de bedrijfsleider? (aan CFO)

- Man
- Vrouw
- Zeg ik liever niet

Q51 Hoelang bent u reeds bedrijfsleider van deze onderneming? In jaren. (aan CEO)

_____

Q52 Hoelang staat de huidige bedrijfsleider reeds aan het hoofd van deze onderneming? In jaren. (aan CFO) _____

Q53 Het is bijna het eind van de enquête. We appreciëren het mocht u in een paar zinnen de volgende vraag kunnen beantwoorden: "Wat is de impact van de huidige covid-19

pandemie op de bedrijfsfinanciering en, bij uitbreiding, op de financiële toestand van de onderneming?".

_____

_____

_____

_____

_____

Q54 Hoeveel euro werd er totnogtoe in 2020 van de volgende financieringsvormen verkregen? U hoeft niets in te vullen indien er niets verkregen werd.
Lijst van financieringsbronnen _____

Q55 Na de volgende 4 raadseltjes, die dienen als controle, is de enquête afgelopen. Heel erg bedankt voor uw tijd, dit wordt ten zeerste geapprecieerd.

Q56 Stel u voor dat we een eerlijke, zeszijdige dobbelsteen 1000 keer gooien. Van deze 1000 worpen, hoeveel keer denkt u dat er een even aantal ogen geworpen zal worden. Uit de onderstaande aantallen, wat is de meest waarschijnlijke uitkomst?

- 157
- 298
- 512
- 754
- 919
- De bovenstaande antwoorden zijn allemaal even waarschijnlijk
- Geen idee

Q57 In een meer is er een patch lelies. Iedere dag verdubbelt de patch in grootte. Als het 48 dagen duurt voor het patch om het volledige meer te beslaan, hoe lang duurt het dan voor het patch om de helft van het meer te beslaan?

- 16 dagen
- 24 dagen
- 25 dagen
- 32 dagen
- 26 dagen
- 22 dagen
- 47 dagen
- Geen idee

Q58 Een bat en een baseball kosten samen €1,10. De bat kost 1 euro meer dan de baseball. Hoeveel kost de baseball?

- 1 cent
- 5 cent
- 10 cent
- 11 cent
- 20 cent
- 100 cent
- Geen idee

Q59 Als het 5 machines 5 minuten tijd kost om 5 eenheden te produceren, hoe lang duurt het dan voor 100 machines om 100 eenheden te produceren?

- 1 minuut
- 5 minuten
- 10 minuten
- 100 minuten
- 1000 minuten
- 1 dag
- Geen van bovenstaande
- Geen idee