Technische Universität München
TUM School of Management

Three essays on small business financing

Benedikt Tratt

Vollständiger Abdruck der von der TUM School of Management der Technischen Universität München zur Erlangung des akademischen Grades eines Doktors der Wirtschafts- und Sozialwissenschaften (Dr. rer. pol.) genehmigten Dissertation.

Vorsitz:	Prof. Dr. Hana Milanov
Prüfer der Dissertation:	1. Prof. Dr. Gunther Friedl
	2. Prof. Dr. Paul P. Momtaz

Die Dissertation wurde am 03.08.2023 bei der Technischen Universität München eingereicht und durch die TUM School of Management am 15.11.2023 angenommen.

Acknowledgements

First, I sincerely thank my doctoral supervisor Prof. Dr. Gunther Friedl for his mentoring guidance and encouragement. Your experience and feedback have been indispensable to achieving my research results. My dissertation further greatly benefited from constructive discussion and rigorous review by members of my committee Prof. Dr. Paul P. Momatz and Prof. Dr. Hana Milanov to whom I want to express my sincere gratitude.

I want to thank all my colleagues and doctoral fellows at the Chair of Management Accounting for providing me with inspiration, personal and academic feedback, and, most importantly, for creating a supportive and fun atmosphere to work in. I further extend my gratitude to Patricia Norum for her vital assistance in administrative tasks. Also, I owe special thanks to the many interview partners as well as the numerous participants in my two surveys who allowed me to draw from their rich experience and contributed valuable insights. My research results would not have been possible without their willingness to contribute.

Further, I want to thank all my colleagues at the Ludwig-Fröhler-Institut. To Dr. Markus Glasl, thank you for providing me with guidance and support and for giving me the freedom to choose my own project focus. To Dr. Andrea Greilinger, Antonia Hoffmann, Carl-Philipp Beichert, Mike Degmayr, and Tobias Beibl for always providing me with constructive feedback and support. To Patrick Kosney and Moritz Schumacher for giving a much-appreciated outside perspective to my work. To all of you, thank you for countless fun lunch and coffee breaks and after-work events. It was a real pleasure working together with all of you!

Finally, of course, I would like to express my deepest gratitude to my family. To my parents, Susanne and Jürgen, for your continuous and unconditional support, which enabled me to pursue my passion. To my brother Niklas for always believing in me. And last but not least, to my partner Veronika. Thank you for your love and friendship and thank you for always putting a smile on my face. I am truly blessed to have you by my side.

Abstract

Access to capital is crucial for small businesses to survive, grow and prosper. However, informational frictions and limited internal resources often make it difficult for small businesses to secure the necessary funding. Partitioned into three independent essays, this dissertation outlines and discusses strategies for micro and small enterprises to acquire internal, mezzanine, and external funding.

Based on original survey data, essay I sheds light on the drivers of working capital management efforts of small enterprises and their relation with corporate performance. To increase the practical applicability of its results, the study moves beyond reported accounting figures and explicitly investigates the routines small firms undertake to manage their working capital. Using a multi-step quantitative research approach, I identify four distinct archetypes of working capital management approaches among small firms. Rather than mere firm size, the results determine financial education and skill of individual personnel as the main drivers of this differentiation. Furthermore, I find that the targeted use of working capital management routines is significantly positively associated with both liquidity and profitability, even in the smallest enterprises.

Essay II explores the potential of crowdfunding as an alternative source of funding for small enterprises. Drawing on qualitative interview data from campaign initiators of small enterprises, it provides insights into the factors influencing their success assessment and how these factors interact with each other in forming successful campaign setups. Configurational analysis identifies three distinct campaign configurations sufficient for success. Overall, the findings show that due to interaction effects, campaign success is achievable for small businesses even if they fail to fulfill allegedly crucial prerequisites identified by prior literature.

In essay III, I investigate how structural changes in the conventional banking sector, like mergers of small local institutions and the accompanying thinning of their branch network, affect small businesses' digital finance adoption choices. Based on original survey data and the geolocation of all bank branches in Germany, logistic regression analysis is applied. Its results show that small businesses are more likely to cooperate with digital financial service providers if they have

recently been affected by the closure of a conventional bank branch or are located in areas with a lower physical branch density. This implies that digital finance can act as a substitute for conventional bank finance if lending distances increase.

Contents

List of Figures

List of Tables

List of Abbreviations

B2B	business-to-business
B2C	business-to-consumer
CCC	cash conversion cycle
CF	crowdfunding
DCF	discounted cash flow
df	degrees of freedom
DFSP	digital financial service provider
EFA	exploratory factor analysis
EU	european union
FAQ	frequently asked questions
fintech	financial technology
fsQCA	fuzzy-set qualitative comparative analysis
ICT	information and communication technology
IIA	independence of irrelevant alternatives
LR	likelihood ratio
MAP	minimum average partial
MBA	master of business administration
MMB	multi-market bank
OLS	ordinary least squares
P2P	peer-to-peer
R&D	research and development
ROTA	return on total assets
SME	small and medium-sized enterprise
SS	sum of squares
VIF	variance inflation factor
WC	working capital
WCM	working capital management

1 | Introduction

In this dissertation, I study the funding practices of small enterprises in Germany. The thesis consists of three independent essays, each of which is focusing on a different source of funding, namely internal financing, crowdfunding, and bank financing. The following introduction starts with highlighting the importance of the small business sector for the German economy. Furthermore, I outline why financial management is crucial for the prosperity and survival of small enterprises and discuss the relevance of empirical studies to support small business owners' financial decision-making. In section 1.2, I delineate this dissertation's object of research by elaborating on the characteristics of small enterprises. Thereafter, I outline how each essay is embedded in the current state of literature. Section 1.4 then gives detailed information on the essays' research objectives, approaches, findings, and contributions. The final section of this introduction sets out the dissertation's overall structure.

1.1 Background and motivation

> "Because one thing is clear, and I think it is now clear across party lines: small enterprises are the backbone of the German economy [...]." *Angela Merkel, former Chancellor of the Federal Republic of Germany* (Bundesregierung, 2015)

> "Finance is key to the survival, growth, and prosperity of small enterprises. Therefore, ensuring that small enterprises have access to finance is important to improve their productivity, which in turn supports economic growth and job creation." (Rao, Kumar, Chavan, & Lim, 2021, p. 1249)

The success of the German economy is heavily relying on the prosperity of its small firm sector. This becomes apparent when looking at its sheer empirical importance. In Germany, 96.9 percent of all enterprises are classified as either micro or small (Statistisches Bundesamt, 2022). By generating nearly one quarter of the entire annual sales turnover, they account for over 30 percent

of the net value added of the German economy (IfM Bonn, 2021; Statistisches Bundesamt, 2022). Even more importantly, the small firm sector employs 38.8 percent of Germany's total workforce and provides 43.3 percent of all apprenticeship positions (IfM Bonn, 2022; Statistisches Bundesamt, 2022). It is thus considered the backbone of the German dual education system (Deutscher Mittelstandsbund, 2023). Moreover, small businesses are important drivers of social and technological advancement and innovation (Drucker, 2015).

Despite their importance for economic and social welfare, small businesses face many challenges and constraints that are inherent to their size limitation. Smaller firms tend to be restricted in their available internal resources and capabilities and often experience difficulties in acquiring external ones (Lefebvre, 2022). This constrains their operational and strategic maneuvering leeway and makes them more vulnerable to changes in their business environment (Guercini & Milanesi, 2016). These limitations are commonly summarized under the term "liabilities of smallness" (Aldrich & Auster, 1986). As a consequence, Aldrich and Auster (1986, p. 180) find that "nonsurvival (sic) rates are very high for small establishments, regardless of age" and that it is the abovementioned constraints in resource accumulation that "make survival problematic" (Aldrich & Auster, 1986, p. 181).[1]

One of the most crucial constraints small enterprises are facing is their limited ability to accumulate financial resources (Aldrich & Auster, 1986; Beck & Demirguc-Kunt, 2006; Kale & Arditi, 1998). Literature provides staggering evidence that impeded access to funding is at the focal point of endangering the survival and growth of small firms (Aghion, Fally, & Scarpetta, 2007; Ang, 1992; Becchetti & Trovato, 2002; Beck & Demirguc-Kunt, 2006; Beck, Demirguc-Kunt, & Maksimovic, 2005; Block, Colombo, Cumming, & Vismara, 2018; Bottazzi, Secchi, & Tamagni, 2014; Carpenter & Petersen, 2002a, 2002b; Chittenden, Hall, & Hutchinson, 1996; Fazzari, Hubbard, Petersen, Blinder, & Poterba, 1988; Hamilton & Fox, 1998; Hutchinson & Xavier, 2006; Lopez-Gracia & Aybar-Arias, 2000; Moscalu, Girardone, & Calabrese, 2020; Wagenvoort, 2003; Winborg & Landström, 2001). Consequently, in a euro area-wide survey carried out by the European Central Bank, more than 25 percent of small businesses perceived problems regarding their access to financing to be of highest importance (European Central Bank, 2022).

The reasons that smaller firms tend to be more financially constrained are manifold. First and foremost, it is the informational opacity that is characteristic of small enterprises that hampers

[1]For theoretical reasoning regarding the survival prospects of small new businesses versus large new businesses see also Hannan and Freeman (1984).

their access to outside funding (Berger & Udell, 1995). Their lack of present and accessible accounting and financial data as well as unformalized strategic orientation and dependence on the owner-manager, increases the agency costs of preventing moral hazard for any outside lender (Berger & Udell, 1998). Thus, small firms have virtually no access to capital markets and have to rely almost exclusively on the banking sector for credit (Petersen & Rajan, 1997). However, the relatively small amounts of credit that a small enterprise typically demands can make comprehensive credit assessments by banks unviable (Korus, Löher, Nielen, & Pasing, 2021). Therefore, external capital providers often demand extensive collateral or even personal guarantees, which many small businesses are either unable or unwilling to meet (Rao et al., 2021). For younger companies, this problem is aggravated by the lack of a track record, trading history, and reputation (Cassar, 2004). Consequently, empirical research has shown that for opaque small enterprises, the presence of asymmetric information and agency costs makes external financing from formal sources like banks and other institutional lenders more costly than relying on internal funds (Artola & Genre, 2011; Fazzari et al., 1988).

The ownership structure and striving for (financial) decision-making independence that is distinctive for many small firms further curtails their portfolio of potential funding sources. Research has shown that most entrepreneurs are very reluctant to consider funding sources based on outside equity investments since they are unwilling to dilute full control over their enterprise (Michiels & Molly, 2017). Consequently, equity funding of owner-managed small businesses remains the rare exception (Butkowski, Hoffmann, Nielen, & Schröder, 2019).

As far as more informal channels are concerned, it is often a lack of awareness and knowledge of these potential sources of funding and how to access them that is detaining small businesses (Rao et al., 2021). While large corporations are maintaining entire departments to develop and execute their financing strategy and optimize their capital structure, the archetypal small business owner is executing the entire business administration on their own - often in the evening or on weekends and in addition to significant operational participation in the value-adding processes of the firm. Aggravating the situation, most small business owner-managers have a technical education rather than a management education. As an example, in a survey among German small and medium-sized enterprise (SME) managers, more than 70 percent stated that they didn't know enough about factoring and how it works and consequently ruled it out as a potential source of funding for their enterprise (GFL Makler- und Beratungsgesellschaft mbH, 2019). Another study found that while 80 and 50 percent of SMEs are familiar with the terms crowdfunding and crowdlending,

respectively, less than one third of respondents were able to name any platform (Deloitte, 2018). These striking examples show that research on promising financial management strategies for small enterprises is paramount to ensure their survival and growth and consequently the overall prosperity of the German economy.

What prerequisites do small enterprises need to formulate a successful internal financing strategy? Are financial management efforts like the implementation of structured working capital management (WCM) routines paying off even when considering the severe resource restrictions of most small firms? Is the archetypal reliance on a single relationship lender (housebank) for a small firm's entire debt financing still favorable? How is the ongoing consolidation and plethora of branch closures in the banking sector affecting this relationship? Does the rise of digital finance and peer-to-peer (P2P) lending provide new and beneficial funding opportunities for small firms? How can small firm owner-managers successfully tap into these new ways of funding? The dissertation at hand sets out to shed light on these and further questions regarding the financial management and funding of small enterprises in Germany.

1.2 Characteristics of small enterprises

The European Commission (EU recommendation 2003/361) provides a clear set of criteria to categorize firms into four different size groups, namely micro, small, medium-sized, and large. These include number of people employed, annual turnover, and balance sheet total. Table 1.1 shows the respective thresholds of this classification and the empirical size distribution of businesses in Germany (Statistisches Bundesamt, 2022). According to the European Commission, an enterprise must employ less than 50 people and either generate an annual turnover or have a balance sheet total of less than 10 million euro to qualify as a small firm. Additionally, it needs to be considered an autonomous venture in which no external parties hold a share of more than 25 percent of the capital or voting rights (European Commission, 2020).

Even though there are objective criteria distinguishing micro, small, and medium-sized enterprises from each other, scholars tend to pool them together in the overarching category of SME research (Audretsch & Guenther, 2023; Gibb, 2000; Miller, McAdam, Spieth, & Brady, 2021; Owalla, Gherhes, Vorley, & Brooks, 2022; Ruzzier, Hisrich, & Antoncic, 2006). Given the aforementioned size dependence of any kind of resource restrictions businesses are facing, the generalizability of scientific results across these three size groups is doubtful. It should be

TABLE 1.1
Firm size classification and empirical relevance in Germany

Enterprise category	Staff headcount	Annual turnover [EUR]	Balance sheet total [EUR]	Share of enterprises in Germany [%][a]
Micro	< 10	≤ 2 million	≤ 2 million	82.9
Small	< 50	≤ 10 million	≤ 10 million	14.0
Medium-sized*	< 250	≤ 50 million	≤ 43 million	2.5
Large*	≥ 250	> 50 million	> 43 million	0.6

*Not part of this dissertation.
[a]Source: Statistisches Bundesamt (2022).

rather obvious that the self-employed hairdresser is facing completely different needs and challenges when deciding on the funding of their business compared to the global market leader for electronic price displays who is generating an annual turnover of close to 50 million euro. Nonetheless, most SME research would claim to yield insights valid for both companies alike (Berger & Udell, 2006; Garcia-Teruel & Martinez-Solano, 2007; Grandon & Pearson, 2004; Lavia López & Hiebl, 2015; Sogorb-Mira, 2005; Watson & Wilson, 2002). Even though the size distribution of SMEs is heavily skewed towards smaller enterprises, research focusing exclusively on micro and small businesses is scarce (Gherhes, Williams, Vorley, & Vasconcelos, 2016; Kelliher & Reinl, 2009; Perren, 1999).[2] This underrepresentation in business research is particularly detrimental since it is these smallest firms who have the fewest resources to develop successful business, management, and financing strategies on their own. They are thus particularly relying on academia to provide them with the respective insights. Therefore, this dissertation focuses exclusively on the financing of micro and small enterprises with less than 50 employees.[3]

Apart from the quantitative definition laid out in table 1.1, small businesses have a number of distinct qualitative features that differentiate them from larger corporations and justify considering them a separate area of research. As Welsh and White (1981, p. 18) put it: "A small business is not a little big business". First and foremost, small firms are characterized by the concentration of ownership and control in the same owner-manager(s) (Julien, 1993). Said owner-manager typically implements a rather authoritarian leadership style where they have sole decision-making power within a hierarchical organizational structure. Gasse (1982) states that while showing a

[2]Sometimes scholars even erroneously claim to conduct small business research whilst including or even focusing on medium-sized enterprises in their publications. See for example Blanchflower, Levine, and Zimmerman (2003); Cole and Sokolyk (2016); Wu and Chua (2012).
[3]To increase readability, I will henceforth subsume both micro and small enterprises under the category of small businesses. The terms "firm", "business", and "enterprise" will be used interchangeably.

lot of initiative and confidence in themselves, small business owners typically find it difficult to delegate and seek (external) consultation and advice. The owner-manager often fulfills multiple roles, executing both operational as well as administrative and management tasks (Gelinas & Bigras, 2004). The centralization of decision-making combined with low degrees of formalization leads to high levels of flexibility and effectiveness. The small workforce fosters close network ties among employees. From a financier's point of view, however, the strong person-dependence maximizes informational asymmetries and increases the risk associated with lending to small businesses (Abdulsaleh & Worthington, 2013). Rauch and Frese (2007) show that the growth and performance prospects of a small enterprise are heavily influenced by the owner-manager's characteristics, personality traits, motivation, and ambitions for the future. The fact that most small business owner-managers have a technical rather than a business administration background and thus limited professional knowledge about management techniques and strategies aggravates the risks associated with investments in smaller enterprises (Pfohl, 2021).

The value creation process of most small businesses tends to be labor-intensive rather than capital-intensive which hampers the emergence of economies of scale and renders growth dependent on the availability of a suitable workforce (Pfohl, 2021). In order to be able to stand their ground in the market, many small firms offer either highly specialized or customized products and services in small batch sizes (Galli-Debicella, 2021). Typically, small businesses focus their sales on limited regional areas around their location, making them vulnerable to regional economic, regulatory, and policy changes (Welsh & White, 1981). In addition, such policy and regulatory changes, as well as fluctuations in resource and labor prices or interest rates, are usually affecting the cost structure of small businesses to a greater extent than they do for large enterprises (Welsh & White, 1981). Small companies are often sandwiched between large customers and large suppliers who are both exerting substantial bargaining pressure and make it difficult for the small enterprise to secure a satisfactory profit margin (A. K. Bhattacharya, Coleman, & Brace, 1995).

Economists dating back to Schumpeter (1934) highlight the importance of small businesses for innovation and technological change. However, it is only the spearhead of businesses that actually operates "creatively outside the circular flow of existing production techniques" (Ortega-Argilés, Vivarelli, & Voigt, 2009, p. 4). The majority of small enterprises are replicating existing business models and lacking the time, resources, and risk appetite to aim for such disruptive innovation. Instead, they tend to focus their research and development (R&D) activities on immediate

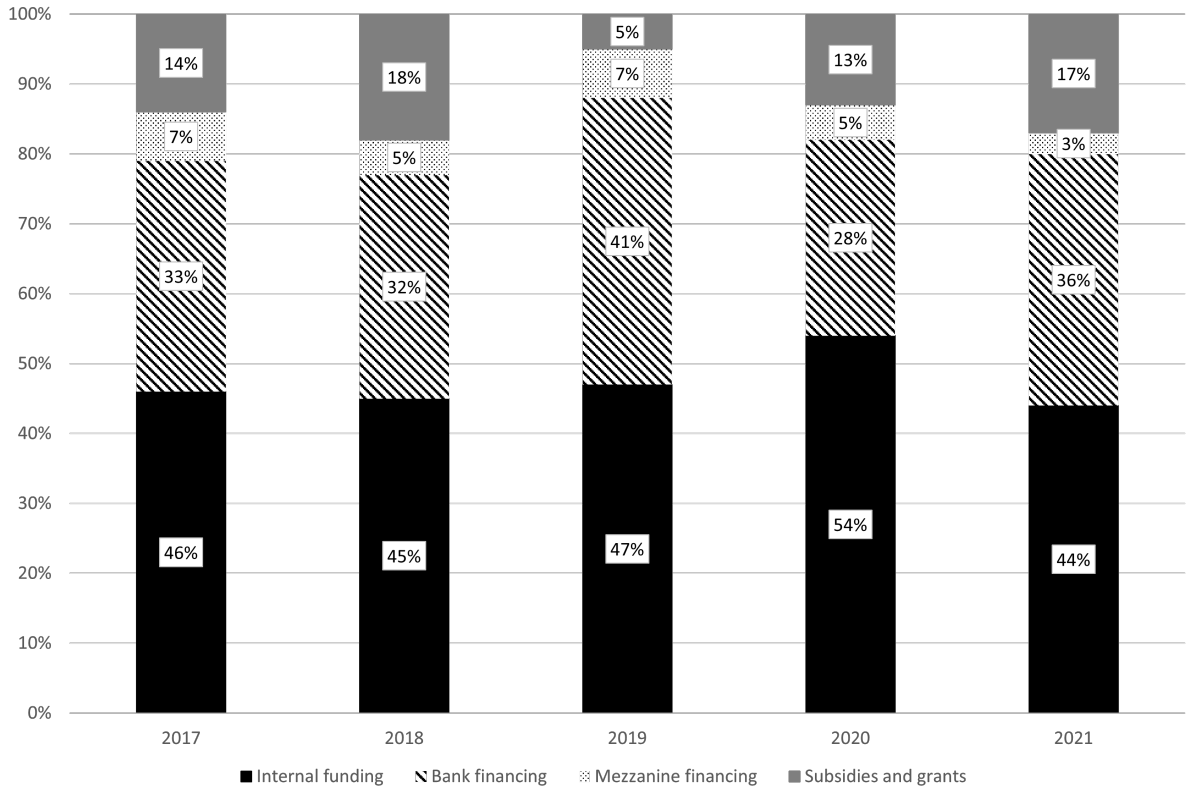
customer demands to minimize the time between development and commercial utilization (Pfohl, 2021). Rather than institutionalizing their R&D efforts, they count on the unstructured intuition and experience of their workforce.

As mentioned before, small businesses have to deal with substantial short-term fluctuations in sales and cashflow (Peel, Wilson, & Howorth, 2000). This is also impacting their financing needs and abilities. For many owner-managers, having sufficient cash in the bank is their foremost concern since "liquidity is a matter of life and death for the small business" (Welsh & White, 1981, p. 25). Due to their informational opacity and lack of collateral, their access to external funding in general and capital markets in particular is usually limited (Petersen & Rajan, 1997). Therefore, most small businesses rely heavily on trade credit and overdraft facilities to finance their day-to-day operations (Hughes, 1997). As far as long-term external funding is concerned, they resort almost exclusively to bank loans (Bendel, Demary, & Voigtländer, 2016). Yet, especially new and micro firms are often put to the choice of submitting personal guarantees if they want to obtain bank financing. However, in recent years digitalization has opened up new potential sources of funding for small firms such as crowdfunding, peer-to-peer lending, and other mezzanine instruments (Block, Colombo, et al., 2018). Given the difficulties many small enterprises face when trying to obtain outside capital, it is not surprising that internal financing and financial bootstrapping is by far the most prominent source of funding among them (Ebben & Johnson, 2006; D. A. Walker, 1989; Winborg & Landström, 2001). Figure 1.1 shows the empirical distribution of funding sources for small businesses in Germany (KfW Research, 2022b).

Verifying scientific literature, internal funding is by far the most important financing source for German small businesses, making up for almost half of their total funding. Approximately one third of their total funding originates from bank loans, confirming that banks are the most prominent source of external capital for small businesses. The remaining financial requirements are fulfilled by state subsidies and grants or mezzanine sources. Since the provision of state subsidies and grants is a rather political and macroeconomic issue, they are both very fluctuating and subject to large country, county, industry, and size variations. They are thus not within the microeconomic scope of this dissertation.

To sum up, small businesses are characterized by concentration of ownership and control, hierarchical organizational structures, low degrees of formalization, and high strategic flexibility. Operating in volatile, competitive environments, their profit and growth perspectives are driven

FIGURE 1.1:
Funding sources of small businesses in Germany



Source: KfW Research (2022b)[4]

by restrictions in personnel and financial resources. Due to substantial information asymmetries, their borrower-lender relationships are impaired and securing internal liquidity is crucial. Therefore, the three essays that form this dissertation are supposed to highlight strategies for small enterprises to ensure their liquidity and ease access to funding.

1.3 Current state of research

A considerable amount of academic research has been carried out on the subject of small firm financing and capital structure choice. As early as 1955, McHugh and Ciaccio stress the importance of pursuing empirical research on the financing needs and opportunities of smaller firms (McHugh & Ciaccio, 1955). They rest their call on the observation that small firms are heavily

[4]Displayed values are weighted average scores of the size categories: "less than 5 employees", "5 to 9 employees", and "10 to 49 employees", following the size distribution listed on p. 18 of KfW Research (2022b).

underrepresented in organized security markets. They further conjecture that this is most likely due to their lack of prominence (and subsequently trust) among investors, leading to higher costs of flotation. Subsequently, a large strand of scientific research emerged that investigates the relationship between firm size and access to various sources of funding (Archer & Faerber, 1966; Beck et al., 2005; Berger & Udell, 1998; Stoll & Curley, 1970; D. A. Walker, 1989). According to its findings, small firms' access to external funding is severely constrained. Some scholars even argue that constraints in funding are the main driver of firm size, i.e., the firm size distribution in any given economy is determined by the number of firms that are able to overcome said financing constraints (Cabral & Mata, 2003). Confirming McHugh and Ciaccio's (1955) conjecture, the drivers for these difficulties in securing external funding are small firms' lack of collateral, unstable cash flows, and the presence of significant information asymmetry with potential lenders due to their opacity (Brito & Mello, 1995; Petersen & Rajan, 1994; Stiglitz & Weiss, 1981).

As a result, the financial characteristics of small firms differ significantly from larger corporations (E. W. Walker & Petty, 1978). Petersen and Rajan (1997) find that smaller firms rely much more on trade credit to finance their operations. They also strain their overdraft facilities and other short-term bank financing options to a larger extent (Hughes, 1997). Due to the extensive cost of these sources of external funding, it is not surprising that small firms often prefer self-financing techniques like bootstrapping over the acquisition of external capital (Ebben & Johnson, 2006). Apart from its high flotation costs, the issuance of external equity instruments is particularly unpopular since it might lead to the dilution of the entrepreneur's ownership share and decision-making authority (Cosh, Cumming, & Hughes, 2009; Lopez-Gracia & Aybar-Arias, 2000). This implies that small enterprises tend to follow the standard pecking order theory of capital structure choice (Myers & Majluf, 1984) in that they make use of internal funding whenever possible and only thereafter seek external debt and lastly, external equity (Cosh et al., 2009; Norton, 1991; Rao et al., 2021; Zoppa & McMahon, 2002).

In the dissertation at hand, I touch upon each of these three pillars of funding. Therefore, while all are rooted in the overall theme of small firm financing and capital structure choice, each essay moreover relates to a different strand of scientific literature. These literature strands are presented in the following.

1.3.1 Working capital management

"We can probably attribute a large number of business failures [...] to an inability of financial managers to plan and control properly the current assets and current liabilities of their respective firms" (Smith, 1973, p. 50). The excess of a firm's current assets over its current liabilities is defined as working capital (WC) (Guthmann & Dougall, 1948). It represents the firm's operating liquidity which is used to finance its day-to-day trading proceedings and can thus be regarded as "the lifeblood of a business enterprise" (Prasad, Narayanasamy, Paul, Chattopadhyay, & Saravanan, 2019, p. 828). However, compared to the major theoretical and empirical research effort that has been carried out in the area of long-term investment and financial decision-making over the last 50 years, research on short-run financial management in general and working capital management in particular has received far less scholarly attention (Viskari, Lukkari, & Kärri, 2011). This imbalance is argued to be due to the fact that unlike decisions related to capital investment, working capital management decisions are of routine character since they have to be made frequently and are thus reversible over time (P. H. Singh & Kumar, 2014). It was only in light of the financial crisis of 2008 and the associated credit crunch and significant decline in corporate performance that working capital management really sparked the interest of managers and researchers. Therefore, the majority of publication activities on WCM occurred from 2008 onwards (Prasad et al., 2019; P. H. Singh & Kumar, 2014).

The most prominent and extensive string of research investigates the relationship between WCM and firm profitability (Prasad et al., 2019). Drawing on accounting data, these studies utilize different proxies for WCM and WCM efficiency that are calculated from the firms' reported WC figures. By far the most prominent proxy is the cash conversion cycle (CCC). The CCC is a commonly used efficiency metric that measures the time in days it takes a company to convert its investment in inventory and other resources into cash flow from sales. Starting with Deloof (2003), a plethora of research has investigated the relationship between the CCC and corporate profitability within different industry and country contexts (Abuzayed, 2012; Baños-Caballero, García-Teruel, & Martínez-Solano, 2012; Chang, 2018; Enqvist, Graham, & Nikkinen, 2014; Lazaridis & Tryfonidis, 2006; Padachi, 2006; Raheman & Nasr, 2007; Samiloglu & Demirgunes, 2008; Sharma & Kumar, 2011). Less common measures for WCM include the net trade cycle (Baños-Caballero, García-Teruel, & Martínez-Solano, 2014; Shin & Soenen, 1998), excess net working capital (Aktas, Croci, & Petmezas, 2015; Ben-Nasr, 2016) and measures

based on the individual WC components (Kaddumi & Ramadan, 2012; Martínez-Sola, García-Teruel, & Martínez-Solano, 2014). Prominent proxies for firm profitability include return on assets (Garcia-Teruel & Martinez-Solano, 2007; Padachi, 2006; Sharma & Kumar, 2011; Shin & Soenen, 1998), return on equity (Afza & Nazir, 2008; Jose, Lancaster, & Stevens, 1996), gross or net operating profit (Baños-Caballero et al., 2012; Deloof, 2003; Lazaridis & Tryfonidis, 2006), and Tobin's Q (Abuzayed, 2012; Chang, 2018; Wang, 2002).

Early research consistently pointed towards an inverse relationship between working capital and firm performance (Deloof, 2003; Jose et al., 1996; Lazaridis & Tryfonidis, 2006; Padachi, 2006; Shin & Soenen, 1998; Wang, 2002). Scholars stressed the various direct costs associated with WC, such as warehouse rent or insurance (Kieschnick, Laplante, & Moussawi, 2013). They argued that too much capital tied up in WC impedes firms from investing in more value-enhancing projects since investments in current assets yield lower returns than potential alternative investments (Baños-Caballero et al., 2012; Ek & Guerin, 2011). More recent scholarly work, however, started to question this strict inverse relationship (Abuzayed, 2012; Martínez-Sola et al., 2014; Sharma & Kumar, 2011). Theoretical arguments for the benefits of keeping a positive net working capital are old established. Granting trade credit has been found to be an important supplier selection criterion (Shipley & Davies, 1991) and is supposed to increase sales by serving as a quality guarantee (Y. W. Lee & Stowe, 1993; Long, Malitz, & Ravid, 1993), encouraging customers to buy in times of low demand (Emery, 1987), fostering long-term customer-supplier relationships (Ng, Smith, & Smith, 1999), and mitigating customers' financial frictions (Emery, 1984). Additionally, keeping inventories can increase profits by serving as a protection from input price fluctuations and mitigating the risk of losing sales due to scarcity of products (Blinder & Maccini, 1991). Keeping in mind the aforementioned cost and risk-premium associated with keeping a positive net WC, scholars as early as Nadiri (1969) conjecture the existence of optimal levels for all individual WC components. Consequently, every WCM decision implies a tradeoff between ensuring liquidity and increasing profitability (Eljelly, 2004). Recent studies thus found empirical evidence for an inverted U-shape relationship between WC levels and firm performance (Aktas et al., 2015; Baños-Caballero et al., 2014; Ben-Nasr, 2016). The theoretical existence of an optimal WC level has also prompted scholars to try and determine said optimal level using stochastic goal programming techniques (Dash & Ravipati, 2009; Keown & Martin, 1977; Masri & Abdulla, 2018; Merville & Tavis, 1973; Sartoris & Spruill, 1974).

Another string of literature has focused on the determinants of a firm's investment in WC.

Investigating manufacturing firms in the US, Fazzari and Petersen (1993) found a negative and significant association between WC investment and capital expenditure. They conjecture that, competing for a limited pool of funding, a firm's WC investment is determined by its fixed asset investment needs. These findings have later been corroborated for Thai (Appuhami, 2008) and Chinese firms (Ding, Guariglia, & Knight, 2013). Furthermore, the firm's operating conditions and financing abilities have been shown to influence working capital behavior. While a positive operating cash flow allows firms to employ a more conservative WCM approach, financially distressed firms are forced to manage their WC more aggressively (Chiou, Cheng, & Wu, 2006; Hill, Kelly, & Highfield, 2010). Similarly, a positive association has been identified between business returns and investment in WC (Nazir & Afza, 2009). Due to superior financing abilities, also older and larger firms are able to manage their WC in a more conservative manner (Baños-Caballero, García-Teruel, & Martínez-Solano, 2010; Hill et al., 2010). Furthermore, C. Chen and Kieschnick (2018) found that firms with a higher dependence on bank financing tend to hold more cash, larger inventories, and use trade credit more extensively. Lastly, there is a significant, time-variant industry effect on firms' investment in WC, with firms tending to adhere to industry benchmarks when setting their WC policy (Filbeck & Krueger, 2005; Hawawini, Viallet, & Vora, 1986; Weinraub & Visscher, 1998).

Due to their difficulties in finding external capital providers, small firms are particularly relying on trade credit as their main source of external funding (Hughes, 1997; Petersen & Rajan, 1997). Considering the volatility of their cash flows (Peel et al., 2000), defective working capital management can quickly result in liquidity constraints threatening business survival. Consequently, a separate string of research has emerged explicitly investigating WCM in an SME context. Again, most scholars investigate the relationship between SMEs' accounted WC figures and corporate performance (G. Afrifa & Tingbani, 2017; Baños-Caballero et al., 2012; Ebben & Johnson, 2011; Garcia-Teruel & Martinez-Solano, 2007; Tauringana & Adjapong Afrifa, 2013). Their results do, however, not differ notably from those investigating larger, publicly listed companies. Research on the determinants and management strategies of WC in smaller firms remains scarce. Drawing on a panel of secondary accounting data from Spanish SMEs, Baños-Caballero et al. (2010) attempt to explain the length of the CCC in SMEs through various firm characteristics. Peel and Wilson (1996) and Howorth and Westhead (2003) are the only ones studying the actual WCM practices employed in small firms. From a manager's point of view, existing WCM research in the SME context is thus relying too much on secondary data of reported WC figures, thereby disregarding the management practices that lead to their composition. This severely hampers

the practical applicability of its results. Following calls for research by P. H. Singh and Kumar (2014) and Lavia López and Hiebl (2015), essay I of this dissertation addresses this practicality gap in the literature by using primary survey data to investigate the drivers of implementation of several WCM practices and their individual as well as joint impact on firm profitability and liquidity.

1.3.2 Crowdfunding

The idea of mobilizing outside capital in small pieces is historically old. In the late 19th century, a fundraising campaign collected over 100,000 USD in donations from more than 120,000 people to enable the construction of the pedestal of the Statue of Liberty. Reaching the necessary target audience back then was, however, only possible with the help of Joseph Pulitzer, publisher of the New York World newspaper who launched daily appeals for donation for a period of over five months. It was only with the emergence of the web 2.0 that it became possible for fundamentally everyone to reach a large enough audience to request funding in an informal and affordable fashion. The resulting phenomenon where people issue "an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights" is referred to as crowdfunding (Belleflamme, Lambert, & Schwienbacher, 2010, p. 5). The transaction is usually processed via a web-based platform functioning as an intermediary (Tomczak & Brem, 2013).

While originating in the creative industries of Anglo-Saxon countries, today, campaigns are launched across a variety of different industries in economies all over the world. Capital can be sought for project-based investments by mature companies as well as to gather seed financing for new ventures (Schwienbacher & Larralde, 2012). Over time, different types of crowdfunding have emerged which differ mainly in the kind of reward given to investors. They can be categorized into four distinct groups (de Buysere, Gajda, Kleverlaan, & Marom, 2012). Donation-based crowdfunding refers to a situation where no monetary or material reward of any kind is promised to investors. It is commonly used for charitable and social causes and appeals to altruistic motives. Reward-based crowdfunding promises investors some form of non-monetary reward in return for their funding. Usually, there are different tiers of rewards based on the amount of money pledged to the campaign. Debt-based crowdfunding is very closely linked to peer-to-peer lending. Money is pledged by investors via a (subordinated) loan and has to be repaid with interest at maturity. Lastly, in the case of equity-based crowdfunding, investors receive a

percentage ownership in the company in return for their contribution. Crowdfunding schemes involving some kind of revenue-sharing are usually also classified as equity-based (Cholakova & Clarysse, 2015).

Since the emergence of the first crowdfunding platform ArtistShare in 2000, the global market has been growing in astonishing fashion. In 2009, the founding year of Kickstarter, already more than 500 million USD were allocated through crowdfunding campaigns every year (Wilson, 2014). In 2021, the global crowdfunding market reached a market value of 13.35 billion USD and is expected to continue growing at double-digit rates (IMARC Group, 2022). While the phenomenon has not been systematically researched prior to 2010 (Belleflamme et al., 2010), with its rise in empirical importance, the number of publications on the subject has been increasing rapidly ever since (Hoegen, Steininger, & Veit, 2018).

Early research on crowdfunding did mainly follow a phenomenon-based approach (Moritz, Block, & Lutz, 2015), describing the concept, trying to develop scholarly definitions, and differentiating crowdfunding from related subjects and concepts such as peer-to-peer lending and crowdsourcing (Giudici, Nava, Rossi Lamastra, & Verecondo, 2012; Mitra, 2012; Tomczak & Brem, 2013). Given the recency of the phenomenon, the first empirical studies on crowdfunding adopted descriptive and exploratory approaches based on qualitative data from case studies and had a rather narrow industry and geographical focus (Aitamurto, 2011; Giudici et al., 2012; Martinez-Canas, Ruiz-Palomino, & Del Pozo-Rubio, 2012; Wheat, Wang, Byrnes, & Ranganathan, 2013). They were analyzing the emerging market for crowdfunding (Klöhn & Hornuf, 2012) and trying to unravel its dynamics (Ley & Weaven, 2011). Others focused their attention on crowdfunding as a new means of early venture financing (Belleflamme et al., 2010; Mitra, 2012; Schwienbacher & Larralde, 2012), its impact on entrepreneurial innovation (Hemer, Schneider, Dornbusch, & Frey, 2011), and tried to increase its prominence and application frequency among entrepreneurs (Klaebe & Laycock, 2012; Macht & Weatherston, 2014).

The first quantitative studies emerged only after platforms had established themselves as intermediaries for crowdfunding and data on their transactions was made available to researchers (Moritz et al., 2015). Scholars utilized this new data source to understand contribution patterns of campaigns, looking at the temporal and geographical distribution of pledges (Agrawal, Catalini, & Goldfarb, 2011; Burtch, Ghose, & Wattal, 2013; Kuppuswamy & Bayus, 2018; Mollick,

2014), and get a deeper understanding of the structural characteristics of campaigns and platforms (Belleflamme, Lambert, & Schwienbacher, 2014; Haas, Blohm, & Leimeister, 2014; Y. Lin, Boh, & Goh, 2014; Qiu, 2013).

Given the relatively low success rates of crowdfunding campaigns – on Kickstarter, only one out of three campaigns is able to reach its funding target – researchers quickly began to shift their focus to the determinants of crowdfunding success. This research is mostly rooted in investment decision theory, trying to explain people's decisions when faced with a bundle of potential campaigns to invest in (Ahlers, Cumming, Günther, & Schweizer, 2015; Frydrych, Bock, Kinder, & Koeck, 2014; Koch & Siering, 2019; M. Lin, Prabhala, & Viswanathan, 2013; Lukkarinen, Teich, Wallenius, & Wallenius, 2016; Mollick, 2014). Drawing upon signaling theory (Spence, 1973) and the concept of social capital (Nahapiet & Ghoshal, 1998), funding success is explained by a campaign's appeal to investors. Early research did focus mainly on the pledging conditions and design of the campaign page. Their results showed that the probability of reaching the funding target decreases with the requested funding amount and increases with campaign duration (Antonenko, Lee, & Kleinheksel, 2014; Frydrych et al., 2014; Mollick, 2014). Furthermore, detailed information disclosure in the campaign description, as well as the use of image and video material, were found to have a positive impact on funding amounts (Bi, Liu, & Usman, 2017; Koch & Siering, 2015; Zvilichovsky, Inbar, & Barzilay, 2013). Later, scholars did even investigate the impact of language narratives and emotional appeal of project descriptions (Cappa, Pinelli, Maiolini, & Leone, 2021; Koch & Siering, 2019). Other studies looked at the contribution impact of several initiator characteristics like gender (Elitzur & Solodoha, 2021; Ullah & Zhou, 2020), education (Ahlers et al., 2015; Brem & Wassong, 2014; Piva & Rossi-Lamastra, 2018), past experience as initiator or investor (Butticè, Colombo, & Wright, 2017; Huang, Pickernell, Battisti, & Nguyen, 2022), and social network size (Ahlers et al., 2015; Kromidha & Robson, 2016). Bollaert, Leboeuf, and Schwienbacher (2020) are investigating narcissistic tendencies among project initiators and find that more narcissistic entrepreneurs show ego-defensive behavior by setting lower funding goals and a longer campaign duration. Yet, they still tend to be less successful.

Another body of literature is focusing on the marketing and interaction efforts prior to, during, and after the campaign period. Scholars agree that promotional efforts through social and conventional media are merely prerequisites for success (Lukkarinen et al., 2016; Petitjean, 2018). To actually set oneself apart from other campaigns, endorsements from third parties are needed

(Calic & Mosakowski, 2016; Huang et al., 2022; Moritz et al., 2015). Additionally, active and regular communication with potential investors through updates and blog entries on the campaign page has been found to increase funding amounts (Antonenko et al., 2014; Kraus, Richter, Brem, Cheng, & Chang, 2016; Kuppuswamy & Bayus, 2018). The positive impact of updates is, however, depending on their timing and content (Xu et al., 2014). While updates on the development of the campaign and product have the largest impact on funding success, merely promotional updates don't affect funding outcomes (Block, Colombo, et al., 2018). The characteristics of the funded project or product have also been targeted by researchers. Calic and Mosakowski (2016) found that projects with an apparent sustainability orientation, both social and environmental, are more likely to receive funding. Regarding the degree of innovativeness of the crowdfunded product, research shows that while incremental innovation is rewarded by investors, radically innovative products tend to receive lower founding amounts (Chan & Parhankangas, 2017). This is argued to be due to understandability issues since prior research has shown that crowdfunding investors want to personally understand the product or service they are investing in (Lukkarinen et al., 2016).

A related but narrower string of research has focused on the motivations of crowdfunding investors. While financial rewards do play a significant role in their investment choices (Brem & Wassong, 2014), also non-financial motives can drive the decision to engage in a crowdfunding campaign (Moritz et al., 2015). These include altruism (Galak, Small, & Stephen, 2011), social reputation (Allison, Davis, Short, & Webb, 2015), a personal connection to the founder (Skirnevskiy, Bendig, & Brettel, 2017), passion for the funded product or service (Hemer et al., 2011; Ordanini, Miceli, Pizzetti, & Parasuraman, 2011) as well as a general desire to be active in social networks (Ordanini et al., 2011; Zheng, Li, Wu, & Xu, 2014). Y. Lin et al. (2014) identify four archetypes of crowdfunding investors: regular backers who are actively involved in the crowdfunding community, trend followers, altruists, and the project-specific crowd motivated by aspects inherent to the particular campaign.

While the literature on campaign success has yielded deep insights into the decision-making and motives of investors, "we still know relatively little about entrepreneurs' motivations to engage in crowdfunding" (Pollack, Maula, Allison, Renko, & Günther, 2021, p. 252). The scarce scholarly work that exists on the matter, however, agrees that the reasons for engaging in crowdfunding are manifold. Apart from raising capital, the two main reasons to engage in crowdfunding are increasing company or brand awareness and receiving market feedback for

products or services (Belleflamme, Lambert, & Schwienbacher, 2013; Gerber & Hui, 2013; Junge, Laursen, & Nielsen, 2022). Regularly, the latter two are even the main motives of initiators, demoting the acquisition of capital to a positive side benefit (Junge et al., 2022). Further motivations include forming network connections (Gerber & Hui, 2013), the speed and flexibility of funding (Macht & Weatherston, 2014), and comparatively little disclosure obligations (Boylan, Nesson, & Philipps, 2018). Companies also pursue crowdfunding campaigns to tap into the "wisdom of the crowd" (Surowiecki, 2004), i.e., inquire about customers' needs and gain impulses for the development of new product ideas (Mollick & Kuppuswamy, 2014; Schwienbacher & Larralde, 2010).

The vast majority of the studies discussed so far is drawing on secondary data that is usually obtained from platform providers. Therefore, these studies mostly define campaign success via the attainment of a pre-specified funding target (Shneor & Vik, 2020). Recently, however, some scholars have started to question this approach pointing out its neglection of subjective success factors (Mastrangelo, Cruz-Ros, & Miquel-Romero, 2020; Pollack et al., 2021; Shneor & Vik, 2020). The personal satisfaction of the campaign initiator might also be driven by personal characteristics like their craving for recognition and self-efficacy as well as by other contextual factors like the amount of time, effort, and money invested during the campaign (Shneor & Vik, 2020). Mastrangelo et al. (2020) therefore suggest that future research should split crowdfunding success into a financial and a personal component. Also, differences in the initiators' motives and goals have so far been overlooked in campaign success research (Pollack et al., 2021). Essay II of this dissertation is addressing this shortcoming of prior literature by taking on a holistic definition of campaign success. Utilizing primary data obtained directly from campaign initiators, it takes into account their individual motives and is thereby also contributing to the according underdeveloped string of research.

1.3.3 Bank financing

Every lending decision is determined by the lender's ability to assess the repayment capabilities and intentions of the borrower (Santomero, 1984). However, this information is first and foremost proprietary to the borrower, creating informational asymmetry that is inherent to all lending relationships (Leland & Pyle, 1977). Financial intermediation literature argues that these informational frictions are banks' principal raison d'être (S. Bhattacharya & Thakor, 1993). "A bank manages and absorbs risks (e.g., credit and liquidity risks) by issuing claims on its total assets

with different characteristics from those encountered in its loan portfolio" (Boot, 2000, p. 9). By transforming their maturity, size, liquidity, and credit profile, banks can enable the funding of projects or entire businesses that would not be served by the capital market (S. Bhattacharya & Thakor, 1993). Subsequently, banks also institutionalize the monitoring of borrowers' compliance with lending covenants (Greenbaum, Thakor, & Boot, 2015). Literature has labeled banks' liquifying function of claims conversion, management, and monitoring "qualitative asset transformation" (Greenbaum et al., 2015).

These liquifying capabilities of banks are especially tantamount for small businesses since they tend to be informationally opaque (Petersen & Rajan, 2002). Accordingly, a lot of research has been devoted to the matter of how banks deal with the level of informational asymmetry inherent to small business lending (Beck, Demirguc-Kunt, & Pería, 2011; Berger & Black, 2011; Berger & Udell, 2006; Cole, Goldberg, & White, 2004). It has been shown that they do so by building long-term, close, and personal relationships with their small business borrowers. This allows them to acquire qualitative, private information about the borrower and "use this information in their decisions about the availability and terms of credit to the firm" (Duqi, Tomaselli, & Torluccio, 2018, p. 1446). This lending technology is called "relationship lending". It stands in contrast to "transaction-based lending", which is making use of quantitative credit scoring techniques based on verifiable, hard information from financial statements (Berger & Udell, 2006).

Multiple studies have shown that relationship lending significantly improves the availability of funding to small enterprises (Bartoli, Ferri, Murro, & Rotondi, 2013; Berger & Udell, 1995; Cole, 1998; Petersen & Rajan, 1994). In particular, credit availability has been shown to increase with relationship length (Angelini, Di Salvo, & Ferri, 1998; Harhoff & Körting, 1998), concentration (Cenni, Monferrà, Salotti, Sangiorgi, & Torluccio, 2015), and the number of social interactions between the contracting parties (Lehmann & Neuberger, 2001). The alleviating effect of relationship lending on small businesses' credit constraints is particularly pronounced during times of micro- (Elsas & Krahnen, 1998; Kawai, Hashimoto, & Izumida, 1996) and macroeconomic crises (Beck, Degryse, de Haas, & van Horen, 2018; Cotugno, Monferrá, & Sampagnaro, 2013; Fiordelisi, Monferrà, & Sampagnaro, 2014). Additionally, the agglomeration of proprietary borrower information by the relationship lender allows for fewer requirements of collateral and personal guarantees (Berger & Udell, 1995; Brick & Palia, 2007; Harhoff & Körting, 1998; Peltoniemi & Vieru, 2013).

However, very close ties between a firm and its main lending bank can also harbor hazards for both the borrower and the lender. From the bank's point of view, the tightness and duration of a lending relationship increase the bank's investment in and exposure to the borrower. If the relationship borrower now drifts into financial distress, the lender could nonetheless be incentivized to extend further credit to the borrower in an attempt to avoid default and recover its previous loans (Dewatripont & Maskin, 1995). Thereby, the relationship lender could end up captured in a relationship with a bad-credit firm to which a de novo lender would simply deny funding (Boot, 2000). The problem worsens if the borrower is aware of the lender's soft budget constraint and thus already behaves opportunistically ex-ante by taking excessive risks (Duqi et al., 2018). On the other hand, the borrower can also find himself captured in an unfavorable long-term lending relationship. Hernández-Cánovas and Martínez-Solano (2010) show that for informationally opaque firms, focusing on a single provider of external capital can create locked-in effects due to the increased effort associated with assessing their creditworthiness. This can lead to an ex-post distortion of competition in which the relationship lender acquires an information monopoly allowing him to extract significant amounts of the economic rent generated by the borrower through charging higher interest rates (Ioannidou & Ongena, 2010; Rajan, 1992; Sharpe, 1990). Consequently, empirical studies investigating the impact of close lending relationships on interest rates for small business borrowers yield conflicting results (Angelini et al., 1998; Berger & Udell, 1995; Degryse & van Cayseele, 2000).

Rooted in the same string of theoretic financial intermediation literature (S. Bhattacharya & Thakor, 1993; Greenbaum et al., 2015; Leland & Pyle, 1977), scholars have also investigated which kind of banks, regarding their size and organizational structure, tend to engage in small business lending. Extending their prior work on relationship lending (Berger & Udell, 1995), Berger and Udell (2002) theorize that due to flatter organizational structures, smaller banks have a competitive advantage in relationship lending since soft information is difficult to transmit through multiple hierarchical levels. Scott (2004) provides first empirical evidence for said conjecture, finding that community financial institutions significantly outperform large banks in lending to small businesses. Later research has labeled the degree of hierarchical separation between a lender's information-producing agent (i.e., the local branch manager) and its credit decision-making authority (e.g., a loan officer at the bank's headquarters), "functional distance" (Alessandrini, Presbitero, & Zazzaro, 2009). Functional distance has been shown to disincentive the utilization of soft lender information (Liberti & Mian, 2009; T. Zhao, Luintel, & Matthews,

2021) and, consequently, negatively affect credit availability for small businesses (Alessandrini et al., 2009) and lead to higher loan default rates (Cotugno et al., 2013; Fiordelisi et al., 2014).

Given these results, researchers have raised concerns that bank consolidation occurring in economies all over the world might hamper small firms' access to credit (Craig & Hardee, 2007; Di Bonaccorsi Patti & Gobbi, 2001; Strahan & Weston, 1996). The downsizing of branch networks accompanying this consolidation process has also focused scholarly attention on the impact of geography on small business lending. DeYoung, Glennon, and Nigro (2008) have shown that increasing physical distance between borrower and lender leads to higher loan default rates as it impedes the collection, interpretation, and monitoring of soft information. Consequently, physically distant banks grant less credit to small businesses (Agarwal & Hauswald, 2010; Backman & Wallin, 2018; Brevoort & Hannan, 2006) and charge them higher interest rates (Arena & Dewally, 2012; Knyazeva & Knyazeva, 2012). At a structural level, it has been shown that small enterprises in areas with lower branch density (Alessandrini et al., 2009; Di Bonaccorsi Patti & Gobbi, 2001) or rural areas in general (Kärnä & Stephan, 2022) face more credit constraints. In line with that, H.-L. Q. Nguyen (2019) finds that local branch closings lead to a tightening of credit for small businesses in the area.

The above-mentioned research strings on relationship lending, bank organizational structure, and geography of the banking sector eventually yielded the so-called "conventional paradigm" of small business bank financing (Berger, Goulding, & Rice, 2014). It states that small, local banks have a competitive advantage in providing credit to informationally opaque small businesses due to their superior ability to gather and assess soft, proprietary borrower information (Behr, Norden, & Noth, 2013; Scott, 2004; Udell, 2008). The degree of the competitive edge is determined by three kinds of distances: relational distance, geographical distance, and functional distance (Berger et al., 2014; Berger, Miller, Petersen, Rajan, & Stein, 2005; Berger & Udell, 2002, 2006).

Independent from conventional paradigm literature, a much smaller string of research has approached the matter from the perspective of the small firm manager, investigating their determinants of bank selection and switching decisions. It shows that small businesses rest their bank choices more on trust-related factors than purely economic ones (Jackowicz, Kozłowski, & Strucinski, 2021). First and foremost, they value a stable, close, and personal relationship with their responsible loan officer (Mitter, 2012) as well as timely and loyal service (Lam & Burton, 2006), especially in times of distress (Iturralde, Maseda, & San-Jose, 2010). Apart from that, a convenient location has also been shown to be an important selection criterion (Lam & Burton,

2005; Trayler, Nielson, & Jones, 2000). Reasons for bank switching among small businesses are also mainly relationship and service related. They include: frequent staff turnover (F. Singh & Kaur, 2015), dissatisfaction with the current loan officer (Scott, 2006), the feeling of apathy conveyed through the bank (Ibbotson & Moran, 2003), as well as slow inquiry processing or bad accessibility (Haines, Riding, & Thomas, 1991). Yet, Howorth and Westhead (2003) stress that while service dissatisfaction does induce switching intentions, actual switching occurs only if the economic benefits outweigh the costs.

However, all research mentioned so far is concerned with conventional brick-and-mortar banks. In the meantime, developments in information and communication technology (ICT) have triggered the so-called fintech (financial technology) revolution, leading to the emergence of various internet-based, digital financial service providers (Gomber, Kauffman, Parker, & Weber, 2018; I. Lee & Shin, 2018). Early scientific work on the matter is mainly exploratory, describing their evolution (I. Lee & Shin, 2018; Puschmann, 2017), technological functioning (Gai, Qiu, & Sun, 2018; W. Lu, 2018), offerings and business models (Eickhoff, Muntermann, & Weinrich, 2018; Gomber et al., 2018), regulatory implications (T. Baker & Dellaert, 2018; Chiu, 2016; Ducas & Wilner, 2017), or trying to develop a taxonomy of the evolving digital finance landscape (Gimpel, Rau, & Röglinger, 2018; Gomber, Koch, & Siering, 2017).

Later on, scholars also investigated the competitive relationship of fintech lenders and conventional banks (Flögel & Beckamp, 2020; Hodula, 2022; Murinde, Rizopoulos, & Zachariadis, 2022; Tang, 2019; Thakor, 2020; Yuan, Li, & Zhang, 2023) as well as the drivers and deterrents of fintech adoption (Anshari, Arine, Nurhidayah, Aziyah, & Salleh, 2021; Belanche, Casaló, & Flavián, 2019; Fu & Mishra, 2022; Hu, Ding, Li, Chen, & Yang, 2019; Jünger & Mietzner, 2020; S. Singh, Sahni, & Kovid, 2020; Xie, Ye, Huang, & Ye, 2021). However, this research is predominantly focusing on consumer lending. The impact of digital financial service providers on small business lending still remains mostly overlooked.

Therefore, essay III of this dissertation sheds light on why and how small businesses cooperate with digital lenders, challenging the assumptions of conventional bank financing literature in light of the changing competitive conditions in the small business lending market. In particular, I am responding to scholars' call for research on how the emergence of fintech finance affects small firms' bank relationships (Flögel & Beckamp, 2020) and what makes small enterprises susceptive to the offerings of digital financial service providers (Z. Lu, Wu, Li, & Nguyen, 2022).

1.4 Research overview and contribution

In order to provide a holistic view of the funding opportunities and capital structure of small enterprises, this dissertation sheds light on three different sources of financing. Each of them has been addressed in a separate and independent research project. Therefore, this dissertation comprises three different essays – one for each source of funding. I apply different research approaches and methodologies depending on the respective research question's nature and scope as well as the state of the underlying theory development (Edmondson & Mcmanus, 2007). In essays I and III, I employ quantitative research designs, whereas essay II utilizes a mixed-method approach based on qualitative interview data. In the following, I provide an overview of the research objectives, approaches, main results, and contributions of the essays.

Essay I In the first essay, I focus on one of the most important techniques to free up internal liquidity, namely, working capital management. Since small businesses typically have large amounts of trade receivables in their asset structure (Hughes, 1997) and current liabilities are their most important source of external funding (Petersen & Rajan, 1997), suitable WCM strategies can be particularly beneficial for them. However, there is almost no empirical data available on the actual implementation rates of WCM routines among small firms. Existing literature on the matter is focusing mainly on the relation between reported working capital figures and different measures of corporate performance, trying to identify optimal levels of WC for small businesses (Aktas et al., 2015; Baños-Caballero et al., 2012; Ben-Nasr, 2016; Ebben & Johnson, 2011). However, these studies shed no light on how, i.e., by means of which working capital management techniques these figures are achieved. They are thus of little practical value to small business managers and advisors. In this essay, I aim to overcome this shortfall by adopting a holistic research approach which is looking at both the dissemination of several WCM routines within small companies as well as the drivers of their implementation and association with firm liquidity and performance. I raise the following research question: What firm characteristics are affecting the propensity of implementing WCM routines in small businesses, and is the implementation impacting the firm objectives of liquidity and profitability? Thereby, I am responding to the call for research raised by Lavia López and Hiebl (2015) on the drivers of financial management system implementation by small and medium-sized enterprises.

Based on asset orchestration theory (Teece, Pisano, & Shuen, 1997) and the resource-based view framework (Barney, 1991), I develop several hypotheses on the association of firm characteristics with the implementation of WCM routines. These factors include firm size (Peel & Wilson, 1996), financial sophistication of key personnel (Sousa, Aspinwall, Sampaio, & Rodrigues, 2005), firm age (Howorth & Westhead, 2003), firm's growth aspirations (Howorth & Westhead, 2003), level of financing constraints (Baños-Caballero et al., 2014), and the weight of each working capital component in the firm's asset structure (Peel et al., 2000). Thereafter, I assess the impact of different degrees of WCM routine application on the firm's liquidity and profitability.

Contrary to existing research that mainly relies on secondary data on reported WC figures, I opt for a direct survey approach to gather information about the frequency of application of 12 WCM routines among a sample of 205 German small firms. The surveyed routine items have been identified according to their expected empirical importance using both existing literature (Howorth & Westhead, 2003; Peel et al., 2000) and expert consultation. In order to prevent single-source bias and still be able to assess the impact of these WCM practices on firm liquidity and profitability, I combine the survey data with objective financial data from the firms' balance sheets which are obtained from the German Bundesanzeiger. Using exploratory factor analysis and partitioning cluster analysis, I first identify different types of small businesses with regard to their take-up of working capital management routines. These types are then used as the dependent variable in a multinomial logistic regression analysis investigating which company characteristics drive the classification. Lastly, the firm types are used as independent variables in several OLS regression models to assess their relationship with firm liquidity and profitability.

The empirical results of my analyses show that contrary to findings for larger enterprises (H. K. Baker, Kumar, & Singh, 2019; Filbeck & Lee, 2000), firm size is not significantly associated with WCM routine take-up in micro and small businesses. In contrast, financial education and skill of individual personnel is identified as the main driver of a firm's likelihood to implement WCM routines. This shows that while the widespread explanation of small firms' limited resources being the main reason for the lower dissemination of WCM routines among them has merit for particular individuals, it falls short to approximate resource availability simply by the number of people employed. Furthermore, the analyses identify credit-constrained firms as being less likely to implement WCM routines. Given the importance of structured WCM for successful internal financing, this indicates that the firms who would benefit most from implementing WCM routines are also the ones least likely to do so. The results of the OLS regression show a

significant positive relation between WCM routine implementation and both performance and liquidity.

The study has several useful implications for researchers and practitioners alike. First, it shows that through foresighted hiring and training, WCM routine take-up rates in small businesses can be increased even under significant workforce constraints. The results also stress the importance of management training for entrepreneurs. The findings regarding financially constrained firms further point to a lack of awareness among small business managers, which is in line with prior literature showing that they tend to neglect administrative and accounting tasks and focus solely on the operational management of their enterprise (Padachi, 2012). This is particularly exasperating since my results show that even for the smallest firms, WCM is not only an effective way of financing and ensuring liquidity but is also significantly associated with superior performance. Providing empirical evidence of this interrelation and communicating it among small business owners, managers, and advisors is thus especially important. Consequently, prior research has shown that WCM activity rates among SMEs increase when owner-managers perceive their take-up as viable for their business (Orobia, Padachi, & Munene, 2016).

Essay II The second essay zooms in on a financing technique that is currently gaining momentum both in practice and in research: crowdfunding.[5] In Germany, the total amount of capital raised by all types of crowdfunding surpassed 440 million euro in 2020 and is experiencing triple-digit growth rates (CrowdfundingHub, 2021; Crowdinvest Insight GmbH, 2020; Statista GmbH, 2021). For small enterprises, the utilization of new sources of outside funding is particularly important since research has shown that their almost exclusive reliance on bank financing bears the risk of getting locked into funding relationships at unfavorable conditions (Hernández-Cánovas & Martínez-Solano, 2010; Sharpe, 1990). Crowdfunding not only provides an opportunity to reduce small businesses' dependence on bank financing but also offers the potential to increase public outreach. Despite the aforementioned growth in allocated capital, only a fraction of the campaigns that are launched are actually successfully funded. On the world's leading crowdfunding platform Kickstarter, for every successful campaign, there are almost two campaigns that fail to reach their funding target (Kickstarter, 2023). Consequently, scholars have been trying

[5]There is a debate among scholars whether the term crowdfunding should only be used in a narrow sense to refer to reward-based models while for donation-based, debt-based and equity-based models, the terms crowddonation, crowdlending and crowdinvesting, respectively, should be used (Moritz & Block, 2014; Short, Ketchen, McKenny, Allison, & Ireland, 2017). For the sake of simplicity and understandability, this dissertation applies the term crowdfunding in its broad sense, referring to all of the aforementioned types.

to understand the investment decision dynamics of crowdfunding markets in order to identify factors that influence the prospects of success of crowdfunding campaigns (Frydrych et al., 2014; Koch & Siering, 2019; Mollick & Kuppuswamy, 2014; Skirnevskiy et al., 2017).

This research, however, falls short in three regards. First, it is lacking a holistic definition of success in the context of a crowdfunding campaign. Most studies apply a simple dichotomous heuristic that classifies campaigns as successful if they were able to reach a pre-specified funding goal (Ahlers et al., 2015; Butticè et al., 2017; Calic & Mosakowski, 2016; Huang et al., 2022; Koch & Siering, 2019). Yet, qualitative insights suggest that initiators have a much more differentiated view on success that is heavily dependent on their motivation for launching the campaign and an ex-post assessment of the cost associated with the acquired capital (Gerber & Hui, 2013; Motylska-Kuzma, 2016). Secondly, existing research is mainly based on secondary data scraped from the most prominent crowdfunding platforms (Hoegen et al., 2018). It is therefore heavily repetitive and taking into account only a narrow set of potential influencing factors primarily covering aspects of the campaign's page design and financial configuration (Bi et al., 2017; Frydrych et al., 2014; Koch & Siering, 2019). Thus, the collection of primary data is necessary to paint a more holistic picture that also incorporates subtle factors like initiator characteristics and motivation as well as any offline activities before, during, and after the campaign. Lastly, research is typically looking at influencing factors in isolation and lacking an integrated view of their interrelations (Hoegen et al., 2018).

In essay II, we are trying to overcome said shortcomings by (1) applying a holistic definition of campaign success based on the initiators' personal assessment and (2) using a configurational, set-theoretic research approach that explicitly investigates the interaction of potential success factors. Our study answers the following research question: What factors influence the perceived success of crowdfunding campaigns in small enterprises, and how do these factors interact with each other in forming successful campaign setups? Thereby, we respond to two separate calls for research. Both Hoegen et al. (2018) and Koch and Siering (2019) explicitly encourage scholars to research the interrelations of various success factors that have been identified by prior literature. Shneor and Vik (2020) call attention to a lack of scientific discussion on the assessment and measurement of crowdfunding success. From a practical point of view, our study aims to provide an assortment of best practices that can function as templates for future crowdfunding projects from different campaign, firm, and initiator backgrounds. For the individual initiator, the availability of these templates is supposed to reduce the margin of error, cost, and effort of launching

a campaign, thereby increasing both the overall success rate and frequency of application among small businesses.

Given the low level of prevalence crowdfunding still has among German small firms and the inductive nature of the research question, we base our research on qualitative interview data from campaign initiators (Flick, 2021). Successful campaign configurations are retrieved from the raw interview data via fuzzy-set qualitative comparative analysis (fsQCA) (Ragin, 1987, 2000, 2008). This involves a three-step methodological process. First, the relevant success factors and drivers of success assessment need to be extracted from the interview data through a multi-level structured coding scheme (Gioia, Corley, & Hamilton, 2013). In a second step, the coded data needs to be transformed into the suitable input format for QCA which is done via a process called "anchored calibration" (Legewie, 2017). Thereafter, the core QCA itself can be carried out, searching for (combinations of) conditions that are necessary or sufficient for campaign success.

The data structure resulting from the coding of the raw interview data indicates five main drivers of campaign success. Namely, these are: (1) Offering a product or service suitable for commercialization via crowdfunding, (2) having sufficient expertise which can be acquired through either experience or advice and support, (3) being personally committed to the campaign, (4) addressing potential investors with a catching message and (5) deliberately choosing crowdfunding over alternative sources of funding. The latter is even identified as being a condition necessary for campaign success, suggesting that last-resort types of crowdfunding campaigns with the sole purpose of making up for denied funding from other sources are doomed to fail. As far as the initiators' definition of success is concerned, the data reveals that reaching the funding target is only one of many parameters affecting their assessment. Others include the effort and cost associated with the campaign, the marketing impact generated, or the possibility to get a proof-of-concept for a new product or service. Consequently, also campaigns that did not reach their funding target have been considered a success by their initiators and vice versa. The QCA reveals three campaign setups that are sufficient for success. The first setup is labeled "Innovators" and their success is, to the most part, driven by the financed product itself. Setup two is called "Communicators" as they ensure success via extensive communication and promotion efforts through various channels. The last setup is made up of "Routiniers" who particularly profit from their crowdfunding experience and know-how.

The essay makes several important contributions. It adds a much-needed practice-oriented perspective to the large string of literature investigating crowdfunding success (Koch & Siering, 2019; Mollick & Kuppuswamy, 2014), showing that campaign success is a multi-faceted phenomenon that cannot simply be approximated by dichotomous heuristics. Furthermore, the study shows that success is ultimately achieved by the sometimes complex and asymmetrical interactions of different factors. Consequently, research that considers success factors in isolation (Huang et al., 2022; Koch & Siering, 2019) delivers not only incomplete results but might even urge initiators to overinvest in some factors, jeopardizing the viability of their campaign. Lastly, by relating the results of the configurational analysis back to the sampled cases and characterizing them in a meaningful way (Furnari et al., 2021), the essay provides small business managers with practical guidelines on how to increase the prospects of success of their campaigns. By examining how different success factors interact with and complement or substitute each other, we show that campaign success is achievable for small enterprises even if they fail to fulfill allegedly crucial requirements like having an attractive product or pertinent expertise.

Essay III As mentioned earlier, bank credit is by far the most important source of external funding for small enterprises. Consequently, scholars have directed a lot of research effort toward the bank choices of small businesses and their effect on the availability and terms of credit. This research has yielded the so-called "conventional paradigm" of small business bank financing (Berger et al., 2014), which argues that local, single-market banks have a competitive advantage in lending to informationally opaque small enterprises. Lending at shorter distances allows local, single-market banks to form close and personal borrower-lender relationships which in turn enable them to produce qualitative, "soft" borrower information that can be utilized to make mutually superior lending decisions (Behr et al., 2013; Flögel & Beckamp, 2020). However, increasing overhead costs have forced many local banks to significantly downsize their branch network or merge with other small banks. Consequently, the number of independent financial institutions in Germany has dropped from 2,400 in 2004 to 1,500 in 2021 and the number of bank branches has more than halved during the same period of time (Deutsche Bundesbank, 2022). Additionally, new financial regulations have led to a standardization of lending processes based on rating systems which diminished small banks' ability to base credit decisions on soft information. At the same time, advancements in information and communication technology have led to the emergence of various digital financial service providers (DFSP) like online-only banks, fintechs, P2P lenders, and credit brokerage platforms. By forgoing a physical branch

network, they are significantly reducing overhead costs while new technologies to gather and analyze borrower data further enable them to cut down the competitive edge of local lenders (Petersen & Rajan, 2002).

This prompts the question of whether the implications of the conventional paradigm of small firm bank financing still hold given the structural changes in the local banking market and the increasing market pressure exerted by DFSPs. In essay III, I tackle said question by investigating the impact that the structure of the local banking market has on the digital finance adoption choices of small firms. Thereby, I am responding to scholars' call for research on how the emergence of fintech finance affects small firms' bank relationships (Flögel & Beckamp, 2020) and what makes small enterprises susceptive to the offerings of digital financial service providers (Z. Lu et al., 2022).

I thus make three important advancements to prior literature. First, I contribute to the nascent string of research on fintech finance for small enterprises. While scholars have intensely investigated the internet banking and digital finance adoption patterns of private consumers (Belanche et al., 2019; Chawla & Joshi, 2017; Lukkarinen et al., 2016; Shaikh & Karjaluoto, 2015; S. Singh et al., 2020; Zhou, Lu, & Wang, 2010), the paper at hand is – to the best of my knowledge – the first to study the drivers of digital finance adoption by small enterprises. Furthermore, I expand conventional paradigm literature to include alternative sources of funding. Existing research tends to dichotomize small business lending to a choice between small, local banks and large, multi-market banks (Berger et al., 2014; Jackowicz et al., 2021; Lam & Burton, 2005). By zooming in on the digital finance adoption practices of small businesses, I allow for the possibility that ICT development and bank consolidation might prompt some small firms to look for more favorable financing opportunities outside the conventional banking sector. Lastly, I contribute to the large string of literature discussing the effect of distance on small business lending (Agarwal & Hauswald, 2010; Bellucci, Borisov, Giombini, & Zazzaro, 2019; Degryse & Ongena, 2005; DeYoung et al., 2008; Flögel, 2018; Petersen & Rajan, 2002). Investigating cooperation patterns with virtual, branch-less financiers uncovers if and which small businesses still value short lending distances.

I base my research on original survey data from owner-managers of 463 small enterprises in Germany to uncover the owner-managers' subjective assessment and drivers of their lending decisions. The widespread reliance on objective loan-contract data in small business lending literature (Alessandrini et al., 2009; Bellucci et al., 2019; Carling & Lundberg, 2005; Degryse

& Ongena, 2005; Kärnä & Stephan, 2022), neglects the importance of the owner-manager's subjective gut-feeling for any business decision made by small enterprises (Jocumsen, 2004). The survey data is combined with a unique, web-scaped dataset containing the geolocation of all bank branches in Germany. Logit and probit regression techniques are thereafter applied to investigate the impact of the structure of the local banking market on small business managers' choice to cooperate with digital financial service providers.

I find that structural changes in the banking sector and the accompanying increases in lending distances increase the likelihood that small firms cooperate with digital financial service providers. In particular, I find higher cooperation probabilities in areas with lower physical branch density and higher average distances between the local information-collecting branch and the bank's decision-making center. Furthermore, my results show that firms with longer and more concentrated relationships with local banks are less likely to engage in digital finance. In contrast, firms that have been affected by the closure of a local bank branch or have experienced frequent changes in their responsible loan officer are significantly more likely to seek digital finance. Overall, these results show that as long as the structure of the local banking market allows for it, small firms still value close and stable relationships with local lenders and thus act in accordance with the conventional paradigm. They do, however, react strongly, i.e., by looking for funding outside of the conventional banking sector, to any supply-side disruptions of those ties. Considering that I find no significant impact of changes in the structure of the local banking market on cooperation probabilities with large, multi-market, conventional banks, my results indicate that digital finance can act as a substitute for conventional bank financing. This implicates that in order to retain their firm grip on the small business lending market, local banks have to carefully consider every consolidation decision and always take into account its impact on lending distances.

In conclusion, this dissertation makes meaningful contributions to the literature on small firm financing by zooming in on the application drivers and effectiveness of WCM routines, by investigating how crowdfunding can be utilized as a viable means of alternative funding, and by challenging the conventional paradigm of small business bank financing in the light of digitalization and banking sector consolidation. For small business managers, the dissertation offers valuable insights and best practice strategies to improve both their internal and external financing capabilities.

1.5 Dissertation structure

The dissertation at hand consists of an overall introduction, three individual essays, and a joint conclusion. While all three essays are referring to the overall topic of small business finance, each essay constitutes an independent research project. They are presented in separate chapters, each with its individual introduction, literature and method section, as well as conclusion. Thus, each essay can be read in stand-alone fashion. Table 1.2 gives an overview of the essays that are part of this dissertation.

The remainder of this dissertation is structured as follows. Chapter 2 consists of essay I, which is titled "Working capital management routines in small German craft businesses: An empirical study of the drivers of implementation". It investigates the dissemination, drivers of implementation, and performance impact of several WCM routines in small businesses. Chapter 3 consists of essay II labeled "Crowdfunding for small craft enterprises: A configurational approach to success". Based on qualitative interview data, this essay explores the factors that affect the perceived success of crowdfunding campaigns in small businesses and how these factors interact in forming successful campaign setups. Chapter 4 then provides essay III titled "Digital finance, banking sector consolidation, and small business lending: Empirical evidence from Germany". Based on the theoretical expectations of the conventional paradigm of small business bank financing (Berger et al., 2014), it examines whether and how the ongoing consolidation in the conventional banking sector affects small businesses' decisions to cooperate with digital financial service providers. Chapter 5 concludes this dissertation with a collective discussion of the findings, implications, and limitations of the three essays and suggests avenues for future research in the field of small firm financing. The appendix provides supplementary information for each essay, such as survey and interview materials, the calibration framework of essay II, and additional analyses.

TABLE 1.2
Dissertation overview

Essay	Essay I (cf. Chapter 2)	Essay II (cf. Chapter 3)	Essay III (cf. Chapter 4)
Title	Working capital management routines in small German craft businesses: An empirical study of the drivers of implementation	Crowdfunding for small craft enterprises: A configurational approach to success	Digital finance, banking sector consolidation, and small business lending: Empirical evidence from Germany
Financing	Internal	Mezzanine	Bank
Research question	What factors drive the implementation of working capital management (WCM) practices in small enterprises and how does their take-up affect performance?	What factors influence the success assessment of crowdfunding (CF) campaigns in small firms and how do these success factors interact with each other in forming successful campaign setups?	Are structural changes in the banking sector affecting small firms' willingness to cooperate with digital financial service providers?
Related call for research	P. H. Singh and Kumar (2014), Lavia López and Hiebl (2015)	Hoegen et al. (2018), Shneor and Vik (2020)	Flögel and Beckamp (2020), Z. Lu et al. (2022)
Research approach	Quantitative	Qualitative, configurational	Quantitative
Methodology	Survey, exploratory factor analysis (EFA), cluster analysis, multinomial logistic regression, ordinary least squares (OLS) regression	Semi-structured interviews, inductive coding, qualitative comparative analysis (QCA)	Survey, logit and probit regression
Main Contribution	Moving beyond reported WC figures and looking at the actual practices implemented to achieve them.	Applying a holistic definition of CF success and providing an integrated view of the interrelations of campaign success factors.	First empirical study investigating drivers of digital finance adoption among small firms, extending literature on lender choice and lending distance.
Practical Implication	Even the most resource constraint firms can implement structured WCM routines in a way that positively affects both firm liquidity and profitability.	CF campaign success is achievable for small firms even if they fail to fulfill several allegedly crucial requirements identified by prior literature.	Banking sector structure affects small firms' lender choices. With increasing lender distances, digital finance can crowd out conventional bank financing.

2 | Essay I - Working capital management routines in small German craft businesses: An empirical study of the drivers of implementation

Abstract

Using data from a survey of small German craft businesses, this article sheds light on the drivers of working capital management (WCM) efforts of small enterprises and their relation with performance. Unlike previous studies, this article explicitly investigates the routines small firms undertake to manage their working capital (WC). Based on the argumentation of asset orchestration theory, factor and cluster analysis are applied to identify four distinct types of small businesses with regard to their WCM approach. Thereupon, several regression analyses are applied to identify the drivers of this differentiation. The results determine financial education and skill of individual personnel as the main driver of WCM routine implementation in small businesses. Firm age, willingness to grow in size, and ease of access to external funding are also affecting WCM undertakings. Considering performance, evidence indicates a positive association between the implementation of WCM routines and both liquidity and profitability.

Author: Benedikt Tratt

Keywords: working capital management; small business management; small business finance; craft businesses

JEL Classification: G31, G32, L25, L26, M10

Status: Published[6]

[6]This essay is published in Journal of Small Business & Entrepreneurship and is available under DOI: 10.1080/08276331.2021.2014206.

2.1 Introduction

Prior research has shown that careful monitoring and management of a firm's short-term assets and liabilities is imperative to balance and optimize the two firm objectives of liquidity and profitability. It is therefore crucial to ensure the long-term success of any business venture (Grablowsky, 1984; Jose et al., 1996). This is particularly true for smaller enterprises as they are usually exposed to more volatile cash flows (Peel et al., 2000). They also have very high current to total asset ratios due to a disproportionately large amount of trade receivables in their asset structure (Hughes, 1997). Additionally, current liabilities are their most important source of external funding as their access to financial markets is usually limited (Petersen & Rajan, 1997). They are thus more likely to face financing constraints (Whited, 1992).

However, there is a blatant lack of empirical work focusing especially on the working capital management practices of (very) small companies and their impact on profitability and liquidity (Peel & Wilson, 1996). Most prior research is investigating the relation between objective working capital figures like the cash conversion cycle (CCC) (Baños-Caballero et al., 2012; Ebben & Johnson, 2011), WC ratio (Anton & Afloarei Nucu, 2021; Botoc & Anton, 2017), or excess net WC (Aktas et al., 2015) and some measure of corporate performance. However, these studies look only at the outcome of WCM efforts in terms of their measurable key figures. This approach sheds no light on how, i.e., by means of which WCM practices, these figures are achieved. Therefore, the work is of little practical value to managers and advisors. Furthermore, any study that considers only global WC measures like the CCC implicitly assumes that small firms have the resources to simultaneously focus on managing all components of WC – even though evidence suggests otherwise (Howorth & Westhead, 2003).

This study is trying to overcome these shortfalls by adopting a holistic research approach which is looking at the dissemination of several WCM routines within small companies, the drivers of their implementation, and their association with objective WC and performance figures. Using data from both a survey of small German craft enterprises [7] and reported financial data of the respective companies, this article addresses a tripartite research question. In a first step, I am

[7] The crafts sector is an autonomous economic sector in Germany. It encompasses more than 130 different trades ranging from building and finishing, electrics and metalworking, wood- and plastic-working, clothing, textiles and leather, food, health and personal care, to chemicals, cleaning, and graphic design. Whether a trade is part of the craft sector is regulated by §§1–5 and §§18–20 of the German crafts code. The whole craft sector consists of more than 1 million businesses that employ about 6 million people generating more than EUR 650 billion in annual turnover.

using both factor and cluster analysis to determine whether there are different types of small craft businesses contingent on their utilization of WCM routines. In a second step, multinomial logistic regression is applied to assess which characteristics and contextual factors are affecting a firm's propensity to take up WCM routines. In the final step of analysis, OLS regression is applied to assess whether their implementation is reflected in the firm's observable WC and performance figures. Thereby, I am replying to the call for research raised by Lavia López and Hiebl (2015) on the drivers and efficacy of control system implementation by small and medium-sized enterprises (SMEs).

Unlike previous studies that investigate WCM in the SME context (G. A. Afrifa, Tauringana, & Tingbani, 2014; Baños-Caballero et al., 2012; Ebben & Johnson, 2011; Lyngstadaas & Berg, 2016; Martínez-Sola et al., 2014; Peel & Wilson, 1996), my sample is restricted exclusively to micro and small firms with less than 50 employees. Among them, the lack of empirical information is both especially significant and adverse since the constraints of a firm's access to external funding are in reverse proportion to firm size (Cabral & Mata, 2003). Furthermore, smaller firms usually have no resources to fund research or practical trials regarding their business administration processes. They are thus relying on academia to provide them with the respective insights.

As the sample is comprised exclusively of German firms, they all operate within the continental, bank-oriented financial system where capital markets are less developed (La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 1997) and therefore most external funding is channeled through financial intermediaries (Allen & Gale, 1995). Research has shown that firms operating in bank-oriented financial systems tend to both grant more trade credit to their customers and receive more funding from their suppliers (Demirguc-Kunt & Maksimovic, 2001). WCM should therefore be of particular importance for businesses in the continental financing environment. Additionally, investigating management practices in the context of German small businesses is of particular interest due to the predominance of the dual education system in the country. Compared to industrial nations in which university education is dominating (e.g., the UK), the focus on practical craft skills during apprenticeship in Germany results in a smaller margin of small business owners and managers that have received profound training in business administration and management (Zentralverband des Deutschen Handwerks, 2018).

Summing up, this study contributes to the literature in several ways. It adds to the literature on WCM by taking a look behind the observable WC figures and analyzing which WCM practices have been implemented to achieve them. It also looks at the drivers behind a small firm's

decision to take up WCM practices and thus sheds light on the decision-making processes in small businesses. Finally, it gives insights into the association between WCM routines and the firm objectives of liquidity and profitability and thereby allows for drawing conclusions on the effectiveness of implementing WCM practices in very small firms. My research further adds to the general string of literature on small firm financing and the relationship between financial constraints and management control. By accounting for the impact of individual employees on central aspects of the firm's management control system, it also adds to the literature on human resources management in small firms.

My key findings can be summarized as follows. First, the partitioning cluster analysis shows that there are indeed four different types of small firms regarding their WCM approach. Second, the multinomial logit analysis shows that – within the universe of small enterprises – firm size is not significantly associated with WCM routine implementation. In contrast, financial education and skill of individual personnel are identified as the main drivers of a firm's likelihood to take up WCM routines. This shows that while the widespread explanation that small firms' limited resources are the main reason for the lower dissemination of WCM routines among them has merit for particular individuals, it falls short to approximate resource availability simply by the number of people employed. It also shows that employing the right people in terms of skills diversity is particularly important for small businesses. Furthermore, the analysis identifies credit-constrained firms as being less likely to take up WCM routines. Given the importance of structured WCM for successful internal financing, this indicates that the firms that would benefit most from implementing WCM routines are also the ones least likely to do so. The results of the OLS regression show a significantly positive relation between WCM routine implementation and both performance and liquidity. However, the results show only very limited reflection of WCM routine implementation in observable WC figures.

The remainder of this article is structured as follows. In the next chapter, I provide the theoretical background for differentiating between types of small firms according to their WCM policy. Thereafter, I review the relevant literature on WCM practices in small firms, their drivers and association with performance figures, and derive the key hypotheses to be investigated in the study. In the following chapter, I introduce the data and variables and set out the methodological approach of the analysis. The results are presented thereafter. The final chapter concludes the article with a discussion of the research results and their limitations and provides useful implications for small business managers and advisors.

2.2 Asset orchestration theory and types of small firms

According to resource-based theory (Barney, 1991; Prahalad & Hamel, 1990; Wernerfelt, 1984), any firm's success is dependent on securing a sustainable competitive advantage which in turn is based on its resources and capabilities. Resources comprise all tangible and intangible assets semi-permanently controlled by the firm. In contrast, capabilities are a special kind of firm-specific, non-transferable resource that determines how the firm accomplishes different tasks and utilizes its assets. According to Teece et al. (1997), a critical component of said capabilities is asset orchestration. Asset orchestration consists of the two processes selection and configuration. During the selection process, a firm is to identify its most promising assets and invest in them. During the configuration phase, governance systems should be developed in order to put the assets to effective use and generate the best possible return on investment (Helfat et al., 2007). Thereby, asset orchestration introduces a managerial component into resource-based theory. Not simply the possession of particular resources leads to a sustainable competitive advantage, they also need to be managed and utilized effectively (Sirmon, Hitt, & Ireland, 2007). Consequently, asset orchestration is directly linked to management accounting and control systems implementation.

Following the technological approach to firm theory, "firm size is ultimately determined by the efficient allocation of given resources [...] under given production and organization technology" (You, 1995, p. 445). In this context, organization technology features all tasks and routines of managerial decision-making. You (1995) explicitly names managerial talent, knowledge, and information as examples for said limited resources. This theoretical approach directly implies that small firms are more restricted in their resources and organizational technologies as it assumes said limitations to be the reason for them being small in the first place. Consequently, efficient resource and asset orchestration through proper management and control systems is particularly important for small firms (Mitchell & Reid, 2000). Literature has already shown that the implementation of management accounting and control systems leads to superior utilization of small businesses' resources (Lavia López & Hiebl, 2015). Therefore, it is not surprising that resource-based theory in the likes of Barney (1991) has often been used as the theoretical foundation of empirical papers on small business management approaches (e.g., Aragón-Sánchez & Sánchez-Marín, 2005; Caldeira & Ward, 2003; Howorth & Westhead, 2003). Under the conjecture that small firms are aware of both their general resource restrictions and their individual

set of capabilities, following asset orchestration theory, they should organize both their general management approach and their investment in control systems in a way that maximizes their return on investment, i.e., business competitiveness.

This line of argument has three implications for the implementation of WCM routines by small businesses. First, given the set of resources and capabilities is unique to every firm, so should be their approach to WCM. Second, the degree to which small businesses implement WCM routines depends on their individual set of resources. Third, firms will focus their WCM efforts on areas that are most important to them, given their asset structure and business model.

Therefore, asset orchestration theory provides opposing arguments to the conjecture of viewing small businesses as a homogeneous entity. Yet, extant research on a vast array of small firm management aspects like credit and finance (Berger & Udell, 1995), strategy (Fiegenbaum & Karnani, 1991), human resource management (de Kok & Uhlaner, 2001), and turnaround management (Boyle & Desai, 1991) tends to treat small firms as a generic unit. The same is true for research on WCM in small businesses (e.g., Baños-Caballero et al., 2012; Garcia-Teruel & Martinez-Solano, 2007; Martínez-Sola et al., 2014). While the claim that small businesses differ significantly from larger corporations in both their resource and capability structure as well as their managerial needs and practices is obviously substantiated (e.g., Ang, 1991), research must not deny a significant degree of heterogeneity in the small firm sector itself. Only very seldom has this diversity been acknowledged by prior literature.

Summing up, organizational theory suggests that, while small companies differ significantly from larger enterprises in their managerial approach, with respect to their utilization of WCM routines, they are most likely also no uniform entity themselves (Howorth & Westhead, 2003). On the contrary, their decision to implement WCM routines should depend on their specific sets of resources and capabilities, which in turn drive the individual return they can derive from a particular routine. This discussion leads to the following research hypothesis:

H1: *Depending on their specific sets of resources, there are different types of small businesses with regard to the focus and degree of their WCM routine implementation.*

2.3 Working capital management routines in small businesses

2.3.1 Drivers of implementation

As laid out in the previous section, the argumentation of resource-based theory and asset orchestration has implications for the drivers of WCM routine implementation in terms of both their amount implemented and their contentual focus. In the following, I will therefore take a closer look at what firm characteristics might play a role in the classification of firms according to their WCM routines.

The degree to which any small firm is able to implement WCM routines is restricted by the temporal resources of its personnel. Therefore, smaller firms are necessarily forced at an early point into a trade-off between the benefits of spending time on WCM routines and the cost of having less time available for other managerial and operational tasks. To maximize the return on investment associated with spending time on WCM, small firms should only apply WCM routines to the degree which is necessary to provide management with the information needed for making substantiated business decisions. Internal informational opacity is increasing with business complexity and separation between ownership, management, and production. However, smaller firms are usually characterized by short ways of communication, a high degree of implicit information on all business areas, and lower levels of complexity of operations (Berger & Udell, 1998). Furthermore, ownership and control are often concentrated in less than a handful of people running the business as owner-managers. The need to generate, organize, and circulate accounting information by implementing management control systems is therefore less pronounced in smaller firms (Westhead, Cowling, & Howorth, 2001; Wynarczyk, Watson, Storey, Short, & Keasey, 2016). Asset orchestration theory thus suggests that smaller firms should be less inclined to adopt formal systems to gather accounting information. Consequently, they should also invest less in implementing formal WCM routines. Validating this string of theory, Peel and Wilson (1996) find empirical evidence showing that smaller firms are indeed less likely to implement WCM routines. Their findings were corroborated by later studies on small firms in both industrial (Filbeck & Lee, 2000) and developing countries (H. K. Baker et al., 2019; Orobia et al., 2016; Padachi, 2012). Therefore, both theory and evidence suggest the following hypothesis:

H2a: *Working capital management routines are less pronounced in smaller firms.*

Apart from the sheer workforce of a business, its amount of available human capital resources also depends on the skills of the people employed. Accordingly, the cost in terms of time that is associated with implementing WCM routines is strongly affected by the financial sophistication of the person responsible. As the associated effort should be significantly lower for a financially educated individual, firms employing such individuals should be more profitable in utilizing WCM routines. Following the argumentation of asset orchestration theory, they should therefore also be more inclined to aim at higher rates of WCM routine implementation. Prior literature has already corroborated the impact that personal characteristics of single key employees can have on all kinds of managerial decisions in small businesses, from strategic orientation (Ramón-Llorens, García-Meca, & Duréndez, 2017) to the implementation of control systems (Howorth & Westhead, 2003). Especially, the level of (business) education has often been identified as a driver of managerial decision-making in small firms (Richbell, Watts, & Wardle, 2006). Consequently, both the owner-managers' previous management experience (Perren & Grant, 2000) and the financial education of themselves and their key employees (Sousa et al., 2005) have been found to be positively related with the implementation of management accounting systems. The discussion above leads to the following hypothesis:

H2b: *Firms with higher human resource capabilities in terms of financial sophistication are positively associated with the implementation of working capital management routines.*

As laid out earlier, apart from the cost associated with implementing WCM routines, their return on investment can also be impacted by its benefits. Apart from the general reduction in value-added that WCM suffers in small firms, and which is due to their informational structure, there are also several firm-specific characteristics that can cause differences in the individual value-added a small enterprise can achieve by implementing WCM routines. One of the characteristics that can lead to an increased need for any kind of management control system is the degree of business uncertainty a firm is facing (Enqvist et al., 2014). Management control systems are steering organizational attention during times of high uncertainty (Simons, 1990). Consequently, prior research has shown that an increase in business uncertainty is positively associated with the take-up of WCM routines (Reid & Smith, 2000).

The time when uncertainty for any business is the highest, is during its founding stages. There, the firm has not yet established a stable portfolio of clients, the roles and responsibilities among members of the organization are not yet clearly assigned, and internal calculations still need to be practically validated. All these arguments, which Stinchcombe (1965) summarizes as "liability

of newness", lead to highly volatile and unpredictable cash flows. Therefore, younger firms should benefit more from implementing any kind of management control system in general and WCM practices in particular. Asset orchestration theory thus suggests that younger firms are exhibiting higher rates of WCM routine implementation. However, there is only little empirical evidence supporting said conjecture (Howorth & Westhead, 2003). Nonetheless, I state the following hypothesis:

H2c: *Younger firms are positively associated with the implementation of working capital management routines.*

Due to less predictable cash flows, small businesses are also facing a higher degree of uncertainty during growth phases (Altig et al., 2022). At the same time, many small businesses also encounter organizational problems arising from scaling up their business (N. Lee, 2014). Therefore, firms desiring to grow in size particularly benefit from the implementation of WCM routines. Their return on investment in WCM efforts is significantly higher during growth phases, and asset orchestration theory thus suggests that they should increase utilization rates accordingly. Consequently, Howorth and Westhead (2003) show that firms that have expressed an interest in firm growth are more likely to implement credit management practices than firms that have not. This leads to the following hypothesis:

H2d: *Firms willing to grow in size are positively associated with the implementation of working capital management routines.*

Another situation in which small firms benefit particularly from implementing WCM routines is if they are facing constraints in acquiring other sources of external funding. In Germany, bank financing accounts for more than 80 percent of SMEs' long-term liabilities and more than 20 percent of their short-term liabilities (Bendel et al., 2016). Therefore, firms that experience difficulties in obtaining bank finance must rely more heavily on trade credit to finance their operations. Thorough monitoring and effective management of their trade credit accounts are of particular importance to such firms. Consequently, their return on investment in credit management practices should be exceeding that of unconstrained firms. Baños-Caballero et al. (2014) show that a firm's investment in WC is sensitive to the degree to which it faces external financing constraints. In line with that, Hill et al. (2010) have found that in times of financial distress, firms tend to alter their WC policies and devote more effort to WCM routines. Reid and Smith (2000) find the same to be generally true for investments in any type

of management accounting system. Consistent with the argumentation of asset orchestration theory, this discussion yields the following hypothesis:

H2e: *Firms facing greater external funding constraints are positively associated with the implementation of working capital management (especially credit management) routines.*

Considering the focus of small firms' WCM efforts, asset orchestration theory suggests that there should be a pecking order of WCM routine implementation. Starting with the most problematic business areas, routine implementation should be gradually expanded to other areas of WCM as long as the available resources allow to do so and the return on investment is positive. Thereby, the firm is maximizing its return on investment under its given and limited set of resources. Prior empirical work has already substantiated said conjecture (Peel et al., 2000). Firms with particularly large inventories and long turnover periods draw higher returns from investing in inventory management routines and should thus do so more heavily. Accordingly, firms reporting high amounts of receivables and payables in their balance sheet should benefit particularly from implementing credit management policies. Asset orchestration theory therefore indicates the following hypotheses:

H2f: *High inventory to current assets ratios are associated with a focus on inventory management routines.*

H2g: *High receivables to current assets ratios (i.e., a large proportion of credit sales) are associated with a focus on credit management routines.*

H2h: *High payables to total liabilities ratios (i.e., a high dependence on trade credit financing) are associated with a focus on credit management routines.*

2.3.2 Association with firm objectives

There is a comprehensive body of literature on the relationship between WCM and firm performance. It has been shown that investment in inventories is positively affecting sales by serving as protection from fluctuations in input prices and mitigating the risk of losing sales due to scarcity of products (Ek & Guerin, 2011). The same is true for accounts receivable. By serving as an important selection criterion, fostering long-term relationships with customers, and encouraging them to buy in times of low demand, granting trade credit can increase sales (Emery, 1984). On the other hand, inventories are also associated with various costs, such as warehouse

rent, insurance, or security and too much capital tied up in receivables may impede a firm's liquidity. Determining the right level of accounts payable is also a trade-off between keeping liquidity within the company and opportunity costs arising from forgone early payment discounts. Consequently, research has shown that there are optimal levels of all individual WC components (Nadiri, 1969) and the relationship between WC levels and firm performance follows an inverted U-shape (Aktas et al., 2015; Baños-Caballero et al., 2014; Ben-Nasr, 2016). Attentive WCM through the implementation of transparent and comprehensible routines is crucial for complying with said levels (Lavia López & Hiebl, 2015). Therefore, other than with observed levels of WC components, the relationship between WCM effort and firm performance should be of strictly positive form. While economic theory suggests WCM effort is subject to the law of decreasing marginal utility, it is extremely unlikely that a company is overinvesting in WCM routines to such an extent that it negatively affects its performance. This discussion leads to the following hypothesis:

H3a: *The implementation of working capital management routines is positively associated with firm profitability.*

"Net Working Capital represents the liquidity margin that is available to meet the cash demands generated by the operating cycle" (Schilling, 1996, p. 4). Therefore, management of a firm's WC is, by definition, a means of liquidity management. There should thus be a direct positive relationship between a firm's investment in WCM routines and its liquidity position. Literature assumes that the time that is devoted to managing a firm's WC is directly reflected in its repayment capabilities (Richards & Laughlin, 1980). However, this relationship has only very rarely been investigated empirically and prior studies have failed to deliver conclusive results. There is some empirical evidence indicating that when facing a cashflow crisis, small firms tend to implement more sophisticated management accounting systems to reduce costs and free up liquidity (Reid & Smith, 2000). On the other hand, Howorth and Westhead (2003) even find that firms that put great efforts into credit management practices tend to exhibit longer CCCs. Still, following theoretical reasoning, I propose the following hypothesis:

H3b: *The implementation of working capital management routines is positively associated with firm liquidity.*

2.4 Data and research methodology

2.4.1 Data

The analyses at hand include data from two sources. Data on the maturity and dissemination of WCM routines originates from a survey instrument. Financial data of the respective companies were obtained from the German Bundesanzeiger[8]. By combining objective financial data with the companies' subjective assessment of their WCM practices, corruption of the results through single-source bias is prevented (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

To gather the data on WCM routines, I created a structured two-part survey instrument (see figure A.1 in the appendix). To ensure its clarity, understandability, and face validity, I pretested the instrument on several experts in the German craft sector as well as on about 20 randomly selected small enterprises (Dillman, 1978). An invitation to participate in the online survey was emailed in April 2020 to an industry-balanced sample of 1,500 randomly selected small German craft businesses. A reminder was emailed two weeks after the initial invitation. The invitation emails also included information on the purposes and objectives of the underlying research project. They were addressed to the (owner-)manager of the companies.

Of the initial sample of 1,500 firms, 35 were no longer reachable via the email addresses published on their online presence. Another 40 turned out to no longer fulfill the criterion of having less than 50 employees, leaving a sample of 1,425 firms. In total, I was able to obtain 232 valid responses, which is tantamount to a response rate of 16.3 percent. Of the 232 initial responses, 27 had to be discarded due to excessive missing data, leaving a total of 205 useful responses which equals an effective response rate of 14.4 percent. In comparison to prior studies targeting small companies on matters of business administration (e.g., Kallunki, Laitinen, & Silvola, 2011; Widener, 2007), the achieved response rate is well within the average range and can thus be considered acceptable to pursue the research project.

Apart from several company demographics, the questionnaire gathers data on the frequency of application of 12 WCM routines. They have been selected based on their expected empirical importance, which was derived from prior literature and expert consultation. The frequency

[8]The Bundesanzeiger is an official publication of the Federal Republic of Germany. It is published by the German Department of Justice. Apart from legal announcements, it is also used for any legally mandated announcements of the private sector. As such, it contains the financial statements of all companies that are subject to German disclosure obligations.

values are queried using a 5-point Likert scale. To increase both reliability and validity of the survey instrument, all five response categories have been fully verbalized (Menold, Kaczmirek, Lenzner, & Neusar, 2014; Saris & Gallhofer, 2014). To prevent common method bias originating from contextual effects, the survey items were arranged in random order (Podsakoff et al., 2003). Table 2.1 shows the distribution of responses across the five categories for all 12 WCM routines as well as their respective mean values.

TABLE 2.1
Working capital management routines: frequencies (valid percent)

Routine	Never	Case-wise	Occasionally	Periodically	Frequently	Mean
Inventory levels	11.71	12.20	14.15	44.39	17.56	3.439
Reorder quantity	15.12	11.22	12.68	45.37	15.61	3.351
Inventory turnover	14.63	15.12	22.93	34.15	13.17	3.161
Terms of payment for customers	15.61	9.27	14.63	39.51	20.97	3.410
Invoicing practices	13.66	10.24	13.17	33.66	29.27	3.546
Overdue notices	13.17	14.15	14.15	29.27	29.27	3.473
Bad and doubtful debts	16.58	13.66	16.10	33.66	20.00	3.268
Terms of payment to creditors	16.10	14.63	16.59	32.68	20.00	3.259
Use of cash discounts	18.54	8.29	12.20	26.83	34.15	3.498
Working capital ratio	23.90	16.10	19.51	29.27	11.22	2.878
Liquidity ratios	20.98	13.66	9.76	38.54	17.07	3.171
Cash conversion	26.83	13.66	19.02	30.73	9.76	2.829

Note: Respondents were asked: "How often do you review or calculate the following figures?".

Table 2.2 shows the summary demographics of the response units. I applied two different tests for non-response bias. In a first step, I compared non-respondents to respondents across several demographic and financial indicators. Chi-squared and student's t-tests show no significant differences in the means of both groups. In line with Widener (2007), I also compared the mean values of all survey items of the first 25 percent of respondents to the mean values of the last 25 percent of respondents. No significant differences between early and late respondents were detected. Thus, there is no evidence for non-response bias and consequently no reason to believe that the sample is not representative of the population of small craft businesses in Germany.

2.4.2 Methodological approach

To answer the research question laid out in the introduction, I apply a multi-step methodological approach. First, I perform an exploratory factor analysis (EFA) to highlight any latent constructs behind the observed variables. Additionally, the factor analysis is necessary to reduce the number of variables under investigation in the following steps of the research methodology, thereby

TABLE 2.2
Sample demographics and non-response bias

Variable	Panel A		Panel B	
	Respondents N=205	Non-repondents N=1193	Early respondents N=51	Late respondents N=51
Number of employees	18.941	18.674	16.529	16.098
Firm age (years)	47.960		51.800	51.429
Total assets (m€)	1.565	1.471	1.404	1.103
Return on total assets	0.030	0.031	0.020	0.028
Inventories (m€)	0.498	0.443	0.730	0.364
Receivables (m€)	0.360	0.403	0.245	0.224
Payables (m€)	0.402	0.519	0.392	0.213
Net working capital (m€)	0.525	0.309	0.583	0.375
Current ratio	4.344		4.713	4.757
Service (dummy)	0.161	0.126	0.176	0.235
Construction (dummy)	0.405*	0.562*	0.353	0.412
Manufacturing (dummy)	0.434*	0.313*	0.471	0.353

* Means are significantly different at p-value < 0.05.
Note: Blank spaces are due to data unavailability.

resolving any possible issues with collinearity. Thereafter, partitioning cluster analysis is applied to identify different types of small businesses regarding their take-up of WCM routines. These types are then used as the dependent variable in a multinomial logistic regression analysis in order to investigate which company characteristics drive the classification. Lastly, the firm types are used as independent variables in several OLS regression models to assess their relationship with firm liquidity and profitability. EFA and cluster analysis have been computed using *R* version 3.6.0, and the regression models have been fitted using *Stata* version 16.

Prior to analysis, I examined the data for general suitability for factor analysis. Both the Kaiser–Meyer–Olkin measure of sampling adequacy and Bartlett's test of sphericity show no evidence of the data being inadequate for factor extraction. A total of three factors exhibit eigenvalues greater than one and thus fulfill Kaiser's criterion for retention. Further, graphical examination via scree plot and parallel analysis also indicates three to be the most suitable number of factors to be retained. The total of three retained factors also minimizes Velicer's minimum average partial (MAP) criterion. Due to some deviations from normality of the data, I use principal axis factors as the extraction method (Fabrigar, Wegener, MacCallum, & Strahan, 1999). To cope with potential correlation among the extracted factors, oblique factor rotation has been performed using the direct oblimin method (Vogt & Johnson, 2016). All extracted factors show values for Cronbach's alpha above 0.9 and are thus of high internal consistency and reliability. Table 2.3 shows the results of the EFA on the surveyed WCM practices.

TABLE 2.3
Exploratory factor analysis on working capital management routines

Variable	Description (frequency of review)	Credit focus (factor 1)	Cash focus (factor 2)	Inventory focus (factor 3)	Communality
INV	Inventory levels	0.00	−0.01	**0.96**	0.904
ORDQ	Reorder quantity	0.03	−0.02	**0.94**	0.895
ITO	Inventory turnover	−0.02	0.09	**0.78**	0.678
RECT	Terms of payment for customers	**0.89**	0.04	0.01	0.842
INVO	Invoicing practices	**0.89**	−0.03	0.09	0.874
DUE	Overdue notices	**0.97**	−0.02	−0.06	0.853
BADD	Bad and doubtful debts	**0.93**	0.04	−0.07	0.820
PAYT	Terms of payment to creditors	**0.88**	0.01	0.01	0.799
DISC	Use of cash discounts	**0.88**	−0.01	0.07	0.844
WCR	Working capital ratio	0.01	**0.91**	−0.04	0.807
LIQ	Liquidity ratios	0.10	**0.80**	0.06	0.801
CC	Cash conversion	−0.06	**0.97**	0.02	0.913
Proportion of variance		0.42	0.21	0.21	
Cumulative proportion of variance		0.42	0.63	0.84	
Eigenvalue		7.65	1.78	1.08	
Cronbach's alpha		0.97	0.94	0.93	

Kaiser-Meyer-Olkin measure of sampling adequacy = 0.907.
Bartlett's test of sphericity = 2,859, p-value = 0.000, df = 66.
Factors with significant factor loadings are indicated in bold.

In the next step of analysis, I use the normalized factor scores from the EFA as input variables for a cluster analysis to determine whether there are indeed different types of small craft businesses with regard to their take-up of WCM routines. This is done using the *k-means++* clustering algorithm. The *k-means++* algorithm is an unsupervised learning technique for pattern recognition where no pre-existing labels or partitions for the items to classify are used. It is very similar to the classical *k-means* clustering approach, which was first introduced by MacQueen (1967). However, it applies a special seeding procedure to increase both speed and accuracy by decreasing the probability of the algorithm getting erroneously stuck on a local minimum (Arthur & Vassilvitskii, 2006). I use Euclidean distance to measure cluster similarity. To decide on the number of clusters to be retained, I plotted the total within-cluster sum of squared errors as a function of the number of clusters and applied the elbow criterion. The knee of the curve appears around the fifth cluster, indicating a four-cluster solution. Additionally, I computed the gap-statistic, a measure developed by Tibshirani, Walther, and Hastie (2001), which also indicates four to be the most suitable number of clusters. Calculation of the pseudo F-statistic shows that adding further clusters does not reduce within-cluster heterogeneity, corroborating that the model is saturated with four clusters. To ensure the stability and validity of the cluster solution, I followed the approach suggested by Clatworthy, Buick, Hankins, Weinman, and Horne

(2005) and randomly divided the sample into two equally sized subsets and repeated the analysis on each subset. The results for both subsets are very similar to the full set solution in terms of size distribution, cluster means, and decomposition of deviance measures. This suggests that the full set cluster solution is both stable and valid. The cluster solution for the full data set is reported in table 2.4.

TABLE 2.4
Partitioning cluster analysis:
Company types by focus of working capital management routines

Cluster	Size *N*	Credit focus (factor 1)	Cash focus (factor 2)	Inventory focus (factor 3)	Within cluster SS
High	88	0.689	0.786	0.640	20.956
Inventory / Cash	24	−0.604	0.713	0.329	50.114
Credit	50	0.403	−0.761	−0.041	31.853
Low	43	−1.540	−1.122	−1.446	45.220
Between cluster SS vs. total SS		74.8%			
Pseudo F-statistic		198.535			

Note: Input variables for the clustering algorithm are the normalized factor scores which were estimated using regression-based weights.

As mentioned before, I perform two types of regression analyses. First, I use the cluster output as the dependent variable in a multinomial logit model in order to identify the drivers of the classification. The logit model takes on the following functional form:

$$\pi_{ij} = Pr(Y_i = j) = \frac{exp(z_i)}{1 + exp(z_i)} \tag{2.1}$$

$$\begin{aligned} z_i = &\beta_0 + \beta_1 EMP + \beta_2 AGE + \beta_3 GROW + \beta_4 CRC + \beta_5 SKILL + \beta_6 INVR \\ &+ \beta_7 RECR + \beta_8 PAYR + \beta_9 CASHR + \beta_{10} ROTA + \sum_{j=11}^{j=13} \beta_j ind_j + \varepsilon_i \end{aligned} \tag{2.2}$$

In a second step, five OLS regression models are fitted to assess the relationship between the firm types and their liquidity, profitability, and several WC ratios. All models take on the following functional form:

$$Y_i = \beta_0 + \beta_1 HIGH + \beta_2 INV + \beta_3 CREDIT + \beta_4 EMP + \beta_5 SKILL + \beta_6 AGE + \beta_7 GROW + \beta_8 DR + \beta_9 CRC + \beta_{10} log(TA) + \sum_{j=11}^{j=13} \beta_j ind_j + \varepsilon_i \quad (2.3)$$

Definitions of the dependent and independent variables used in the regression settings as well as their respective measurement scales can be found in table 2.5.

TABLE 2.5
Description of regression variables

Independent variable	Definition	Measurement scale
EMP	Number of employees	Continuous
AGE	Years since foundation	Continuous
GROW	Dummy variable for desire to grow in size	1 = growth is targeted; 0 = no desire to grow
CRC	Degree to which firm is credit constrained	Ordinal measure following Kuntchev et al. 2013 (1 = not constrained to 4 = fully constrained)
SKILL	Objective level of sophistication of financial skills (dummy)	1 = at least one employee with business degree; 0 = else
$SKILL_{subj}$	Subjective assessment of own level of financial skills	Ordinal aggregate[†] (2 = very bad to 10 = very good)
DCF	Dummy variable stating if firm applies DCF method	1 = DCF method applied; 0 = else
DR	Debt to total assets ratio	Continuous
TA	Total assets	Continuous
INVR	Inventories to total assets ratio	Continuous
RECR	Receivables to total assets ratio	Continuous
PAYR	Payables to total assets ratio	Continuous
CASHR	Cash ratio	Continuous
ROTA	Return on total assets	Continuous
SERV	Service sector dummy	1 = service; 0 = else
CONS	Construction sector dummy	1 = construction; 0 = else
MANU	Manufacturing sector dummy	1 = manufacturing; 0 = else
HIGH	Dummy variable for firm type	1 = type "HIGH"; 0 = else
INV	Dummy variable for firm type	1 = type "INV"; 0 = else
CREDIT	Dummy variable for firm type	1 = type "CREDIT"; 0 = else

[†]Respondents were asked to grade their own financial management skills from 1 = very bad to 5 = very good both in general and in comparison to their closest competitors. These variables were aggregated to compute a measure for the subjective assessment of the respective firm's financial capabilities.

To ensure that there is no problem with multicollinearity among the variables included in the models, both the correlation matrix and the variance inflation factors (VIFs) for the variables considered in the analyses are calculated. As table 2.6 shows, no highly correlated independent variables exist. Additionally, all VIF values of the logit model are less or equal to 2.42 and those of the OLS models are less or equal to 3.37 (see table A.1 in the appendix). Thus, both are well below the common cut-off value of 5 which indicates no issues caused by multicollinearity

(Menard, 2002). All models have been checked for potential highly influential observations. For the multinomial logit model, this was done by calculating Pregibon's leverage and dbeta (Pregibon, 1981) for two binary logistic sub-models. For the OLS models, I computed Cook's Distance and examined the leverage versus residuals squared plot. The analyses revealed no outliers due to erroneous data handling or measurement. All influential points identified represent rare but valid observations.[9] They are thus retained in the analyses.

TABLE 2.6
Correlation matrix of independent variables

Variable	EMP	AGE	GROW	CRC	SKILL	ROTA	CASHR	INVR	RECR	PAYR
EMP	1.000									
AGE	0.149^{*}	1.000								
GROW	0.166^{*}	−0.099	1.000							
CRC	−0.038	−0.087	0.127	1.000						
SKILL	0.249^{***}	0.009	0.262^{***}	-0.152^{*}	1.000					
ROTA	0.262^{***}	−0.041	0.205^{**}	-0.274^{***}	0.220^{**}	1.000				
CASHR	−0.077	−0.002	−0.088	−0.086	−0.058	0.169^{*}	1.000			
INVR	−0.045	0.041	−0.012	0.042	−0.004	−0.131	-0.269^{***}	1.000		
RECR	−0.039	−0.073	0.063	0.191^{**}	0.023	0.120	−0.081	-0.298^{***}	1.000	
PAYR	−0.037	−0.033	0.054	0.136	−0.062	−0.101	-0.338^{***}	0.244^{***}	0.138^{*}	1.000

*, **, *** indicates significance at the 5%, 1% and 0.1% level, respectively.

2.5 Results

2.5.1 Cluster solution: company types

As reported in table 2.4, the clustering algorithm suggests the existence of four distinct types of small businesses with regard to their WCM routine implementation. The first cluster is labeled HIGH and consists of companies that have implemented routines in all relevant areas of WCM to a significant degree. They tend to be larger (both in terms of total assets and number of employees) and younger firms. They are mainly from resource-intensive industries like construction and manufacturing and have high levels of net WC. The second cluster consists of companies that focus their WCM efforts on inventory management routines and is thus named INV. While these firms also have implemented routines for cash management to some degree, credit management is typically neglected. Particularly, low levels of net WC are exhibited among firms of the INV cluster. Members of the third cluster - which is labeled CREDIT - are concentrating their WCM investment on credit management practices. Both inventory and cash

[9] Further analysis also shows that exclusion of potentially influential data points did not have a significant impact on the regression results which gives further cause for retention.

management are less developed. Firms of the CREDIT cluster tend to be smaller and older firms with larger amounts of trade credit both issued and received. Firms of the last cluster are reluctant to employ any structured routines for WCM at all. The cluster is thus called LOW. Member firms tend to be smaller (especially in terms of total assets) and younger firms. They are mainly from the less resource-intensive service sector.

The results of the cluster analysis are very similar to those of Howorth and Westhead (2003) in their study of UK small firms. However, while they also identified a cluster of firms that focuses exclusively on cash management practices, my study suggests that cash management practices are typically not employed in stand-alone fashion but combined with the management of other WC components.

2.5.2 Drivers of implementation

The results of the multinomial logistic regression analysis carried out to identify independent variables that discriminate companies into the four distinct WCM types are reported in table 2.7. The model correctly classifies 65 percent of the observations into their respective type, which is considerably higher than a random guess. Furthermore, the pseudo R-squared statistics demonstrate that the model has significant explanatory power.

Contradicting H2a, I find no statistically significant association between firm size and the propensity to take up WCM routines for any one of the six distinct type-reference combinations. Even though the sign of the EMP coefficient is positive for all three company types that implement WCM practices relative to the LOW category, the associated z-values are far from reaching any statistical significance. Regarding the comparison between type HIGH companies and both CREDIT and INV, even the sign of the coefficients is inconclusive, giving no indication that firms with the highest degree of WCM routine implementation were generally larger. These findings are in line with prior research on WCM implementation in SMEs (Howorth & Westhead, 2003). However, they cast doubt on the conjecture proposed by scholars following a strict resource-based argumentation that a mere limitation in workforce is deterring small firms from implementing structured WCM routines (Westhead, Wright, & Ucbasaran, 2001; Wynarczyk et al., 2016). At least up until some threshold of firm size, other factors seem to be driving WCM routine take-up rates. This is in line with a prior study of Indian SMEs that, while finding major differences in the degree of formality of adopted WCM policies between micro and medium-sized

firms, detects little to no differences between those of micro and small firms – especially at the level of actual WCM practices (H. K. Baker et al., 2019).

On the other hand, regarding individual employees, evidence reported in table 2.7 suggests that firms with superior financial sophistication are more likely to implement any kind of WCM practices. H2b is thereby substantiated. The coefficient of SKILL is positive and significant for types HIGH, CREDIT, and INV in comparison to type LOW. SKILL does, however, not significantly discriminate between the former three categories. Firms employing individuals with superior financial sophistication are more likely to fall into the HIGH, CREDIT, or INV category. Keeping in mind the insignificant relationship between firm size and WCM routine take-up rates, this shows that rather than the mere amount of people employed, the individual sets of skills of single employees seem to be driving small firms' overall propensity to implement WCM practices. These findings are in line with prior studies from both industrial (G. A. Afrifa et al., 2014; Y. Zhao, 2011) and developing countries (Agyei-Mensah, 2011) who all find that a high educational level and financial sophistication of firm managers lead to a more comprehensive adoption of structured WCM practices.

With regard to firm age, I find a significant negative association for types HIGH and INV in reference to type LOW firms. Both types tend to be younger. The coefficient for CREDIT versus LOW is also negative, yet it is not statistically significant at the 5 percent level. The same is true for type HIGH in comparison to type CREDIT. Thus, regarding H2c, I find some empirical evidence that younger firms are indeed more likely to be implementing WCM routines. My results therefore indicate that firms who are facing the "liability of newness" (Stinchcombe, 1965) might indeed invest more into WCM in order to cope with high levels of business uncertainty (Enqvist et al., 2014; Howorth & Westhead, 2003).

As anticipated by H2d, the sign of GROW is positive for all company types relative to the LOW type. Firms that put the least effort into WCM practices are therefore not associated with an interest in firm growth. The coefficient is, however, only significant for type INV. It is also positive and significant for INV in relation to CREDIT. This indicates that firms willing to grow in size are more likely to implement inventory management routines. This result is in line with prior literature arguing that WCM is especially important for growth firms due to the organizational challenges and increased economic uncertainty that arise from scaling up one's business (Botoc & Anton, 2017).

In contrast to hypothesis H2e, evidence shows a highly significant negative association between CRC and a firm's propensity to take up WCM routines. The coefficients are negative and highly significant for types HIGH, CREDIT, and INV in relation to type LOW. They are also negative and significant for types HIGH and INV in relation to CREDIT. Firms with difficulties in obtaining external funding seem to be less likely to implement WCM practices. However, results also show that if credit-constrained firms are implementing WCM routines, they tend to focus on credit management. This is in line with the theoretical argumentation outlined in section 2.2 as it indicates that small businesses do indeed focus their WCM efforts on areas providing them with the highest return on investment in their particular situation. Consequently, Enqvist et al. (2014) also find that firms whose access to external funding is limited tend to focus more on credit management.

Evidence shows that, in line with H2f, firms putting the most effort into WCM practices do indeed exhibit higher inventory to total asset ratios. The same is true for firms that focus on credit management policies. These firms seem to follow a conservative, situational change approach to WCM in which they voluntarily maintain a higher level of inventory to eliminate the risk of stockouts and mitigate fluctuating input prices (H. K. Baker et al., 2019; Deloof, 2003; Smith & Sell, 1980). Furthermore, in contrast to H2f, firms that focus on inventory management practices exhibit lower inventory ratios in relation to all other company types. The results are, however, only statistically significant for types CREDIT and HIGH as reference categories. According to the classification of Smith and Sell (1980), these firms are pursuing an aggressive approach to WCM that concentrates on keeping inventory levels low to reduce associated costs.

Concerning H2g, my evidence provides some indication that firms with a larger amount of receivables in their asset structure are increasing their investment in WCM practices in general and credit management practices in particular. These results mirror the findings of Howorth and Westhead (2003) that firms invest more into cash management if only a fraction of their sales are made on cash terms. The coefficient of RECR is, however, not significant at the 5 percent level for both types HIGH and CREDIT in relation to type LOW.

Contrary to expectation (H2h), I find no evidence that the amount of payables on a firm's balance sheet has any influence on the implementation of WCM routines. The coefficients of PAYR are inconclusive and far from reaching statistical significance. These results are in contrast to Howorth and Westhead (2003), who find that firms making a large ratio of purchases on credit are increasing their investment in both credit and cash management practices.

Overall, the results provide no clear indication that small firms do indeed focus their WCM efforts in areas that are most likely to provide them with the highest return on investment. The focus of WCM routines in small businesses does not seem to follow a strict pecking order. This might indicate that many small businesses are simply not aware of the possible benefits provided by WCM policies, let alone able to weigh the impact of different practices against one another (Orobia et al., 2016).

TABLE 2.7
Multinomial logistic regression analysis: results

Reference category	LOW			CREDIT		INV
Variable	HIGH	CREDIT	INV	HIGH	INV	HIGH
EMP	0.023	0.027	0.014	−0.004	−0.013	0.009
	(0.89)	(1.05)	(0.48)	(−0.24)	(−0.60)	(0.46)
AGE	−0.024*	−0.017	−0.024*	−0.007	−0.007	0.001
	(−2.25)	(−1.67)	(−2.10)	(−1.05)	(−0.76)	(0.06)
SKILL	3.873**	3.776**	2.979*	0.097	−0.797	0.894
	(3.10)	(3.07)	(2.25)	(0.23)	(−1.23)	(1.51)
GROW	1.236	0.600	2.169*	0.637	1.569*	−0.932
	(1.42)	(0.72)	(2.10)	(1.24)	(2.02)	(−1.31)
CRC	−2.835***	−1.597***	−2.986***	−1.238***	−1.389**	0.151
	(−5.82)	(−3.73)	(−4.78)	(−4.01)	(−2.75)	(0.31)
INVR	4.924**	4.626**	−3.641	0.298	−8.266**	8.565***
	(2.79)	(2.73)	(−1.20)	(0.30)	(−3.10)	(3.30)
RECR	2.375	2.007	1.759	0.369	−0.246	0.615
	(1.24)	(1.05)	(0.82)	(0.30)	(−0.15)	(0.41)
PAYR	−0.833	0.581	0.563	−1.413	−0.018	−1.396
	(−0.47)	(0.35)	(0.25)	(−1.24)	(−0.01)	(−0.80)
CASHR	1.038*	1.089*	0.957*	−0.051	−0.132	0.081
	(2.21)	(2.32)	(2.01)	(−0.74)	(−1.16)	(0.76)
ROTA	10.279*	9.656*	8.614*	0.623	−1.042	1.666
	(1.97)	(1.97)	(1.50)	(0.23)	(−0.28)	(0.51)
Constant	2.421	−0.158	3.454*	2.578**	3.611*	−1.032
	(1.70)	(−0.11)	(2.16)	(2.63)	(2.78)	(−0.91)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Percentage correctly classified	64.878%					
Number of Observations	205					
Pseudo R-Squared (McFadden)	0.3643					
Pseudo R-Squared (Nagelkerke)	0.6585					
LR test (model χ^2)	$192.06^{***}(36df)$					

*, **, *** indicates significance at the 5%, 1% and 0.1% level, respectively.
z-values are reported in parentheses.

2.5.3 Routine effectiveness

The results of the OLS regression (see table 2.8) show a significantly positive association between return on total assets and all three firm types that are implementing WCM routines. The positive relationship does therefore not depend on the focus of the implemented routines, even though the

effect is most pronounced for firms of the HIGH category. H3a is therefore confirmed. Attentive and structured WCM is indeed positively associated with firm performance even when controlling for other factors literature has identified to affect the return of small businesses. The respective regression model is highly significant and has substantial explanatory power (R-squared = 35.25 percent). These results corroborate the large string of literature advocating for adherence to an optimal level of WC (Aktas et al., 2015; Anton & Afloarei Nucu, 2021; Baños-Caballero et al., 2012; Ben-Nasr, 2016). The 12 WCM routines under investigation seem to be of great help to small businesses when trying to reach their optimal level of WC.

The results also show a significantly positive association between liquidity (CASHR) and the take-up of WCM practices regardless of their focus. The coefficients for all three firm-type dummies are positive and significant. Proving H3b, this shows that WCM is indeed an effective means for ensuring financial solvency of small firms. This is in line with prior studies linking effective WCM to both corporate financial stability (Reid & Smith, 2000) and survival (Jose et al., 1996). The respective regression model itself is also highly statistically significant and has substantial explanatory power (R-squared = 39.34 percent).

Lastly, I also fitted three additional OLS models to investigate whether the implementation of WCM routines is also reflected in the firms' observable WC figures. For inventory management, I find that firms that are investing more in inventory management routines are exhibiting lower inventory ratios. The coefficient of the INV dummy is negative and significant at the 5 percent level. However, for both receivables and payables ratio, I find no significant association with the amount or focus of WCM routines implemented. Thus, I cannot corroborate prior studies' findings that WCM in small firms affects reported WC figures (Howorth & Westhead, 2003).

2.5.4 Robustness checks

To evaluate the robustness of the effect of managerial education and skill on the implementation of WCM routines, tests with alternative measures for managerial skill and financial literacy have been conducted. First, I use the owner-manager's own assessment of their abilities in financial planning and business administration (model 1). Second, I use the application of discounted cash flow (DCF) calculation as a proxy for financial literacy (Grablowsky & Burns, 1980) (model 2). The results of both regression models are reported in table 2.9. I find that both subjective financial skill and the application of DCF calculation are more pronounced in

TABLE 2.8
OLS regression results

Dependent variable	ROTA	CASHR	INVR	RECR	PAYR
HIGH	0.064**	0.600*	0.049	0.023	−0.025
	(0.021)	(0.276)	(0.051)	(0.057)	(0.042)
INV	0.059*	0.777*	−0.112*	0.005	−0.016
	(0.027)	(0.372)	(0.057)	(0.066)	(0.051)
CREDIT	0.059**	0.336*	0.052	0.006	0.010
	(0.019)	(0.256)	(0.053)	(0.049)	(0.041)
EMP	0.002**	−0.001	−0.004*	0.001	0.001
	(0.001))	(0.008)	(0.001)	(0.001)	(0.001)
AGE	−0.001	0.006	0.001	−0.001	−0.000
	(0.001)	(0.003)	(0.001)	(0.000)	(0.000)
GROW	0.034*	−0.174	0.011	0.004	0.023
	(0.016)	(0.142)	(0.036)	(0.029)	(0.033)
SKILL	0.011	−0.226	−0.006	0.032	−0.003
	(0.013)	(0.194)	(0.034)	(0.029)	(0.029)
DR	−0.113***	−2.791***	0.264***	−0.143**	0.319***
	(0.023)	(0.384)	(0.048)	(0.044)	(0.043)
CRC	−0.019*	−0.132	0.017	0.042*	0.015
	(0.008)	(0.116)	(0.017)	(0.022)	(0.015)
log(TA)	−0.010	0.008	0.063***	−0.021	−0.005
	(0.006)	(0.081)	(0.014)	(0.014)	(0.017)
Constant	0.207*	2.130*	−0.730***	0.557**	0.193
	(0.090)	(0.858)	(0.175)	(0.182)	(0.225)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Number of Obs.	203	203	203	203	203
R-Squared	0.353	0.393	0.295	0.139	0.272
F-Statistic	4.31***	6.89***	7.95***	2.64**	6.55***

*, **, *** indicates significance at the 5%, 1% and 0.1% level, respectively.
Heteroscedasticity-robust standard errors are reported in parentheses.

firms that have implemented WCM practices regardless of their focus. The coefficients of the remaining independent variables are very similar to those of the main model reported in table 2.7. The findings are thus robust to changes in the proxy for financial skill.

Furthermore, following the argumentation outlined in section 2.3.2, I test whether there is really no indication of an inverted U-shape relation between WCM routine implementation and performance. To do so, the sample is split up into quartiles according to their degree of WCM utilization, and t-tests for equality of ROTA means are run between the subsamples. If there was an inverted U-shape, then the performance of the top quartile WCM firms should be lower or at least equal to that of the second-best WCM firms. However, the difference in means between the 3rd and 4th quartile of firms is a positive .015 and significant at the 10 percent level. There

is thus no indication of an inverted U-shape in the relationship between WCM implementation and small firm performance. I do, however, find evidence suggesting that the marginal utility of WCM routine investment might be decreasing with increasing investment size.[10]

TABLE 2.9
Multinomial logistic regression analysis: robustness tests

Logit model	(1)			(2)		
Variable	HIGH	CREDIT	INV	HIGH	CREDIT	INV
EMP	0.031	0.035	0.015	0.036	0.041	0.015
	(1.27)	(1.53)	(0.55)	(1.53)	(1.83)	(0.53)
AGE	−0.017	−0.012	−0.022	−0.023**	−0.173*	−0.026**
	(−1.63)	(−1.20)	(−1.94)	(−2.86)	(−2.19)	(−2.77)
SKILL$_s ubj$	1.427***	1.048***	0.871**			
	(4.90)	(3.85)	(2.97)			
DCF				1.463*	0.834	2.367**
				(2.14)	(1.28)	(2.77)
GROW	−1.077	−0.771	−2.374*	−1.455	−1.012	−2.192*
	(−1.10)	(−0.85)	(−2.21)	(−1.74)	(−1.28)	(−2.24)
CRC	−2.694***	−1.595***	−3.013***	−2.690***	−1.410***	−2.890***
	(−4.97)	(−3.37)	(−4.56)	(−6.09)	(−3.86)	(−4.93)
INVR	3.614*	3.151	−5.829	3.635*	3.380*	−5.478
	(1.96)	(1.79)	(−1.82)	(2.33)	(2.31)	(−1.81)
RECR	1.625	1.362	1.162	2.935	2.293	2.405
	(0.73)	(0.64)	(0.49)	(1.54)	(1.25)	(1.09)
PAYR	−0.753	0.811	1.216	−0.893	0.275	0.171
	(−0.40)	(0.48)	(0.57)	(−0.57)	(0.19)	(0.08)
CASHR	0.655	0.717	0.606	0.893	0.935*	0.821
	(1.57)	(1.72)	(1.43)	(1.87)	(1.96)	(1.69)
ROTA	10.911*	10.716*	8.706	12.203**	11.673**	9.426
	(2.20)	(2.36)	(1.63)	(2.79)	(2.88)	(1.94)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.		205			205	
Pseudo R-Squared		0.405			0.337	
LR test (model χ^2)		213.69***(36*df*)			192.06***(36*df*)	

*, **, *** indicates significance at the 5%, 1% and 0.1% level, respectively.
z-values are reported in parentheses.
Due to space restrictions, the results of the robustness tests are only reported using LOW as the reference category. Results of the remaining type reference combinations are also very similar to those of the main model in table 2.7 and are available from the author upon request.

2.6 Conclusion

This study empirically assesses the drivers of dissemination and efficacy of WCM routines in small craft businesses. Instead of looking only at observable WC figures, it examines the means, i.e., practices, by which said figures are achieved. By investigating routines for the management

[10]The difference in means between quartiles 1 and 2 is .09 (t = 5.71). Between quartiles 2 and 3, the difference is .023 (t = 1.97).

of all WC components separately, it also overcomes the common yet doubtful conjecture that small firms are managing all WC components simultaneously.

Based on asset orchestration theory and the resource-based view framework, several hypotheses are developed on the association of firm characteristics with the implementation of WCM routines as well as their impact on the firm's observable WC figures, liquidity, and profitability. To test said hypotheses, a multi-step research methodology is applied. Partitioning cluster analysis is used to identify different types of small businesses with regard to their take-up of WCM routines. These types are then used as the dependent variable in a multinomial logistic regression analysis to investigate which company characteristics drive the classification. Finally, several OLS regression models are fitted to assess the association between WCM routine implementation and firm profitability, liquidity, and its observable WC figures. The analyses are based on survey data from 205 small German craft businesses and financial data from the companies' annual reports.

The study is able to identify four different WCM-types of small firms. The first type is labeled HIGH and focuses on credit, cash, and inventory management routines alike. Types INV and CREDIT focus specifically on inventory and credit management practices, respectively. Type LOW is reluctant to take up any WCM routines at all. The results of the multinomial logit model show that firms that utilize fewer WCM practices are not necessarily smaller enterprises. Instead, they tend to be older and more credit constrained. On the other hand, firms employing more financially skilled personnel and willing to grow in size are found to be more likely to implement WCM practices. The results of the OLS regressions indicate that the targeted use of WCM routines is positively associated with both liquidity and profitability.

This study has several useful implications for researchers and practitioners alike. First, the results indicate that constraints in workforce alone do not constitute the major barrier to the utilization of WCM practices in small businesses. Instead, the maturity and effectiveness of WCM systems in micro and small firms are, to a large part, driven by the financial management skills, education, and up-to-date thinking of individuals. For both managers and advisors, this shows that through foresighted hiring and training, WCM routine take-up rates in small enterprises can be increased even under significant workforce constraints. The results also stress the importance of management training for entrepreneurs in the craft sector. Therefore, policymakers, chambers of crafts, and professional associations alike should develop accounting-oriented

training programs for founders, owners, and managers of small-scale businesses. This is particularly important given that my results show that even for the smallest of firms, WCM is not only an effective way of financing and ensuring liquidity but is also significantly associated with superior performance. Providing empirical evidence of this interrelation and communicating the results among industry experts is especially important since many small business owners tend to neglect administrative and accounting tasks and focus solely on the operational management of their enterprise (Padachi, 2012). Yet, prior research has shown that WCM activity rates of SMEs increase when owner-managers perceive the take-up of such routines as useful for their business (Orobia et al., 2016). Small business owner-mangers should therefore carefully analyze the managerial knowledge resources available within their workforce and assign the task of implementing an ensemble of structured WCM routines to the most knowledgeable individual. If no sufficiently trained individual is available, the necessary knowledge needs to be acquired externally – either via training or hiring.

There are also some limitations that have to be conceded when interpreting the results of this study. Due to its cross-sectional design, it is unable to establish causality but can only demonstrate interesting associations that call for further investigation. Especially the relationship between WC and profitability is subject to endogeneity due to omitted variable bias and bidirectional causality (Baños-Caballero et al., 2012, 2014). However, these concerns apply mostly to the relationship between reported WC figures and performance. It is argued that profitable firms have more cash available to invest in WC (Anton & Afloarei Nucu, 2021). Since this study shows that it is possible to implement WCM practices in small businesses even under significant resource constraints, this argumentation loses weight when examining the relation between WCM practices and performance. Furthermore, the number of possible confounders in the relationship between WCM practices and performance is much smaller than that within the relationship between WC figures and performance (Seth, Chadha, Sharma, & Ruparel, 2021). Therefore, a significant degree of the confounder and simultaneity bias reported in prior studies on the link between WC and firm performance should be mitigated by looking at WCM practices instead of WC figures. However, it is likely that there is still some endogeneity left in my cross-sectional models. Research designs drawing from panel and time-series data are thus necessary to distinguish the drivers of the association between WCM practices and firm performance. In the same way, the direction of causality is unclear with regard to the association between WCM routine take-up and some of the firm characteristics investigated in this article. For advisors to

be able to provide targeted recommendations for action, these complex strands of causality need to be unraveled – for example, through qualitative research designs.

Furthermore, this study focuses on the drivers that lead to an increase in the propensity to implement WCM routines; it would also be interesting to specifically investigate possible barriers that keep small enterprises from taking up WCM routines. Even though this study is the first to explicitly focus on micro and small firms, I was still only able to include companies in the analysis that are publicly reporting a minimum of financial information. As many of the smallest firms in the craft sector are sole proprietorships and partnerships, they are not legally obligated to publicly report any kind of financial information. To extend the research and include these companies, scholars will have to rely on research designs based on cumbersome collection of primary data and the willingness of owner-managers to cooperate in such designs and disclose their private financial data. Lastly, the study has a relatively narrow geographical and industry focus which should be kept in mind when generalizing its results.

Summing up, there is still need for much more research on the matter of WCM in the small firm sector and its cause-effect relations with drivers, barriers, and implications of routine take-up. A sound understanding of the dynamics of WCM in small businesses will enable managers and owners to optimally exploit one of their most important sources of funding.

3 | Essay II - Crowdfunding for small craft enterprises: A configurational approach to success

Abstract

Crowdfunding (CF) is gaining momentum both in practice and in research. For small businesses, it provides an opportunity to reduce their dependence on bank financing while at the same time offering the potential to increase public outreach. Drawing on qualitative interview data from campaign initiators of small craft enterprises, we provide insights on the factors influencing their success assessment and how these factors interact with each other in forming successful campaign setups. We extend existing research by applying a holistic definition of campaign success that is not only looking at the amount of capital collected but also considers cost and effort of funding as well as benefits in terms of company development. We apply fuzzy-set qualitative comparative analysis to identify three distinct campaign configurations sufficient for success. Overall, our findings show that due to interaction effects, campaign success is achievable for small businesses even if they fail to fulfill allegedly crucial prerequisites identified by prior literature.

Authors: Benedikt Tratt and Gunther Friedl[11]

Keywords: crowdfunding; funding success factors; entrepreneurial finance; small businesses; qualitative comparative analysis (QCA)

JEL Classification: G11, G29, L26, M13

Status: Submitted[12]

[11] A desciption of the contributions of each author is given in figure A.3 in the appendix.

[12] At the time of handing in this dissertation, this essay is currently under review at Venture Capital.

3.1 Introduction

Due to their lack of collateral, unstable cash flows, and the presence of significant information asymmetry with potential lenders, many small and new firms face severe constraints in obtaining external funding through bank loans or capital markets (Berger & Udell, 1995; Cosh et al., 2009; Whited, 1992). They thus have to either rely on expensive sources of external funding like trade credit or turn to internal financing alternatives and make use of bootstrapping techniques (Ebben & Johnson, 2006; Petersen & Rajan, 1997; D. A. Walker, 1989).

With the emergence of the web 2.0 in the mid-2000s, an alternative way of accumulating external capital for entrepreneurs has come into existence: crowdfunding (Bouncken, Komorek, & Kraus, 2015; Ordanini et al., 2011). Crowdfunding describes a process where entrepreneurs issue "an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights" (Belleflamme et al., 2010, p. 5).

While originating in the creative industries of Anglo-Saxon countries, the number of crowdfunding campaigns is surging in economies all over the world in recent years (Cambridge Centre for Alternative Finance, 2021). Today, successful crowdfunding campaigns are launched across a variety of different industries including publishing, food, science, technology, and manufacturing, to name a few. In Germany, the total amount of capital raised by all types of crowdfunding surpassed 440 million euro in 2020 and is experiencing triple-digit growth rates (CrowdfundingHub, 2021; Crowdinvest Insight GmbH, 2020; Statista GmbH, 2021). Along with its rise in empirical importance, the scientific debate around crowdfunding is also gaining momentum. While the phenomenon was not systematically researched prior to 2010 (Belleflamme et al., 2010), the number of publications has been increasing rapidly ever since (Hoegen et al., 2018).

Despite the aforementioned growth in allocated capital, only a fraction of campaigns launched are actually successfully funded. On the world's leading crowdfunding platform *Kickstarter*, for every successful campaign there are almost two campaigns that fail to reach their funding target (Kickstarter, 2023). Consequently, prior research has been trying to shed light on the investment-decision dynamics of crowdfunding markets to identify factors that influence the prospects of success of crowdfunding campaigns (Frydrych et al., 2014; Koch & Siering, 2019; Mollick, 2014; Skirnevskiy et al., 2017).

However, this research falls short in three regards. First, it lacks a holistic definition of "success" in the context of a crowdfunding campaign. Usually, a simple dichotomous heuristic is applied, and campaigns are deemed successful if they were able to reach a pre-specified funding goal (Ahlers et al., 2015; Butticè et al., 2017; Calic & Mosakowski, 2016; Huang et al., 2022; Koch & Siering, 2019). Qualitative insights have however shown that, depending on their motivations for launching a crowdfunding campaign, initiators have a much more differentiated view on success (Gerber & Hui, 2013). Some campaigns are specifically launched to get a proof-of-concept for a new product or service or to increase brand awareness (Angerer, Brem, Kraus, & Peter, 2017). Reaching a specific funding goal is at most secondary to these initiators. On the other hand, some campaigns might be perceived as unsuccessful by their initiators even though they reached their predefined funding goal. For example, if the cost of capital is deemed excessively high in retrospect (Motylska-Kuzma, 2016). Thus, a holistic view of campaign success needs to be applied, taking into account both the motivations behind the campaigns and their ex-post financial viability.

Second, existing research is relying heavily on investment decision theory, implying that risk-return trade-offs are the main decision criterion for investors (Ahlers et al., 2015; Courtney, Dutta, & Li, 2017). Therefore, existing research is predominantly focusing on a narrow set of influencing factors such as campaign page design and financial configuration (e.g., funding goal, length of funding period, reward structure) (Bi et al., 2017; Frydrych et al., 2014; Koch & Siering, 2019). One explanation for this constricted academic view is the widespread reliance on secondary data that is scraped from platforms (Hoegen et al., 2018). To construct a more holistic framework that also incorporates subtle contextual factors such as motivations for participation, preparatory effort, initiator expertise, dissemination strategies, and offline activities, a more cumbersome collection of primary data from investors and initiators is necessary.

Third, research is typically looking at influencing factors in isolation and lacking an integrated view of their interrelations (Hoegen et al., 2018). This might also explain the substantial number of conflicting results (see section 3.2). While some factor can have a positive impact on campaign outcomes in one configuration (e.g., in connection with factors A and B), it might well have a negative impact in some other configuration (e.g., in connection with factors C and D). Another explanation for the high degree of conflicting results in existing literature on crowdfunding success might be the fact that most studies are limited to only one type of crowdfunding and

thereby neglecting potential differences in motivation and decision-making between CF types on both the investors' as well as the initiators' side (Hoegen et al., 2018).

Using qualitative interview data from initiators of reward-, lending-, and equity-based campaigns, this paper tries to overcome said shortcomings by applying a holistic definition of campaign success based on the initiators' personal assessment. The data is analyzed using a configurational, set-theoretic approach that allows for systematic cross-case comparison, uncovering the interplay of a wide array of potential success drivers that have been retrieved from the interview data itself and are thus not limited by data availability issues. Thereby, our research sheds light on (1) what factors influence the perceived success of crowdfunding campaigns in small businesses and (2) how these success factors interact with each other in forming successful campaign setups.

We focus on the realm of small German craft businesses since they are particularly dependent on bank financing as their sole source of external funding (Bendel et al., 2016). However, research has shown that especially for small and informationally opaque ventures, focusing on a single source of external funding bears the risk of getting locked into a funding relationship at unfavorable conditions (Hernández-Cánovas & Martínez-Solano, 2010). Furthermore, small craft businesses typically exhibit unstructured accounting systems and low equity ratios and are thus struggling to keep pace with the ongoing transition from relationship-based to transaction-based loan approval procedures in the German banking landscape (Wolf, 2010). Consequently, a survey by the German Confederation of Skilled Crafts has shown that liquidity concerns are growing rapidly within the craft sector (Zentralverband des Deutschen Handwerks, 2020). Tapping into alternative ways of accumulating external funding is therefore especially beneficial for small businesses of the German craft sector.

Our study makes several important contributions. First, we contribute to the scarce literature on the assessment and measurement of crowdfunding success (Junge et al., 2022; Mastrangelo et al., 2020; Shneor & Vik, 2020). Our results show that initiators' success assessment is not solely driven by the amount of capital collected but also by its associated cost and effort and the achieved impact on company development. We thus extend existing research by stressing the importance of taking a more holistic perspective on crowdfunding success instead of approximating success simply via the attainment of predefined funding targets.

Second, we respond to scholars' calls for research on the interrelations of various success factors that have been identified by prior literature (Hoegen et al., 2018; Koch & Siering, 2019). By

taking on a configurational approach, we are able to show how different factors work together in forming successful crowdfunding campaigns, uncovering that the effectiveness of each factor is depending largely on the overall campaign setup it is part of. Our set-theoretic analysis identifies three distinct campaign setups that lead to successful funding and which are characterized as *Innovators*, *Communicators*, and *Routiniers*. We provide an integrated view of what influences crowdfunding success in different settings (e.g., regarding type and platform), thereby extending prior research that often deep-dives into single influencing factors within the narrow setting of a specific crowdfunding type on a single platform (Ahlers et al., 2015; Cappa et al., 2021; Chan & Parhankangas, 2017).

Lastly, this study provides small business managers with practical guidelines on how to increase their prospects of success in crowdfunding. By showing how different success factors interact with and complement or substitute each other, it becomes apparent that crowdfunding success is achievable for small enterprises with various sets of resources and characteristics. Our results thus highlight the potential of crowdfunding as a financing alternative for small businesses.

The remainder of this paper is structured as follows. In the next section, we summarize theoretical considerations and previous empirical findings on the success drivers of crowdfunding campaigns. Thereafter, we present the qualitative data sample and describe the method of analysis. The fourth section presents the results of the configurational analysis. Section 3.5 discusses the research results, its limitations, and implications for research and practice. Section 3.6 concludes.

3.2 Scientific context

Existing literature on crowdfunding success factors is closely linked to investment-decision theory (Koch & Siering, 2015; Lukkarinen et al., 2016; Mollick, 2014). Taking on an investor's perspective, it is trying to determine what factors influence people's decision to support a crowdfunding campaign. Drawing upon signaling theory (Spence, 1973) and the concept of social capital (Nahapiet & Ghoshal, 1998), crowdfunding success is explained by a campaign's potential to attract investors.

3.2.1 Signalling theory and crowdfunding success

Similar to other external financing transactions, the relationship between initiators and potential investors of a crowdfunding campaign is subject to substantial information asymmetry (Ahlers et al., 2015; Courtney et al., 2017). Naturally, the project initiators can be assumed to be more knowledgeable about their project's characteristics and prospects than a small investor who typically has neither the know-how nor the resources to evaluate campaign proposals properly. According to signaling theory, initiators can therefore send out signals of project quality and trustworthiness in order to reduce investors' perceived uncertainty and influence their investment decision-making (Koch & Siering, 2019). Investors will then both consciously and unconsciously interpret these signals when trying to evaluate the unobservable characteristics of a project (Ahlers et al., 2015). Based on the theoretical argumentation of signaling theory, prior research has been able to identify a variety of factors that are affecting funding success of crowdfunding campaigns (Mollick, 2014).

3.2.1.1 Campaign design

Most crowdfunding platforms offer initiators a wide array of options regarding the design of both their transaction scheme and their campaign page.

Pledging conditions The focal pledging conditions of a crowdfunding campaign comprise the duration of the funding period, the size of the funding target, and the offered reward-scheme. Regarding the length of the funding period, prior research has yielded conflicting results. Some scholars argue that long funding periods will be perceived as a signal of poor project quality by investors, whereas a shorter duration encourages investors to act on impulse. They thus reason that there is a negative relationship between length of the funding period and funding success (Koch & Siering, 2019; Lukkarinen et al., 2016; Mollick, 2014). Lagazio and Querci (2018) on the other hand, find a positive association between length of the funding period and funding success. They argue that this is due to the fact that investors prefer campaigns that allow them to digest the campaign information in more detail. Allowing enough time for investors to perform a thorough due diligence is supposed to signal trustworthiness. There are, however, also some researchers who find no significant association between length of funding period and funding outcomes at all (Frydrych et al., 2014; Koch & Siering, 2015).

Empirical results investigating the influence of the size of the funding target on campaign success, on the other hand, are very consistent: the higher the funding target, the more likely it is that the project will fail (Ahlers et al., 2015; Antonenko et al., 2014; Frydrych et al., 2014; Koch & Siering, 2019; Lagazio & Querci, 2018; Mollick, 2014). For reward-based crowdfunding campaigns, Antonenko et al. (2014) and Kraus et al. (2016) further find that rewards should be tiered based on amount pledged in order to increase the average funding amount per investor.

Project page design Concerning the design of the campaign page, a generally strong web presence that includes video, image, and text material is argued to be perceived as a signal for preparedness which in turn serves as a proxy for project quality (Courtney et al., 2017; Huang et al., 2022; Kraus et al., 2016). The provision of a video has been identified as the most important part of a campaign's web presence since it serves as the strongest signal for project quality (Angerer et al., 2017; Mollick, 2014). Providing video material has been found to positively affect both the number of investors (Bi et al., 2017; Koch & Siering, 2015) and the total amount collected (Josefy, Dean, Albert, & Fitza, 2017). It is argued that apart from signalling project quality through effort and preparedness, the video is also able to replace personal contacts with potential investors (Josefy et al., 2017; Moritz et al., 2015). However, Frydrych et al. (2014) caution against overestimating the impact of posting a video on funding success since it has become rather a minimal requirement than a unique selling proposition.

Regarding the text description of the project, scholars reckon that providing more detail in the description will decrease perceived uncertainty for potential investors (Lagazio & Querci, 2018). Therefore, a positive relationship between description word count and funding success has been observed (Bi et al., 2017; Koch & Siering, 2015). Furthermore, Mollick (2014) finds that spelling errors in the description indicate lacking preparedness and poor project quality and thus have a strongly negative impact on the likelihood of reaching the targeted funding amount. Scholars have even looked at the narrative styles of campaign descriptions and found that campaigns using a "results in progress" narrative style, i.e., describing the project as a progression of accomplishments, are, on average, receiving more funding (Cappa et al., 2021). In a similar study, McSweeney, McSweeney, Webb, and Devers (2022) find that investors are highly sensible to the level of assertiveness signaled in crowdfunding pitches. Initiators need to carefully balance asserting their ability to achieve outcomes while avoiding being perceived as overconfident. Furthermore, both Ahlers et al. (2015) and Koch and Siering (2019) find that

the provision of a risk disclaimer as part of the text description is signaling trustworthiness and thus increases funding success as long as there is no information overload.

3.2.1.2 Project characteristics

Apart from the design choices of the campaign, research has found that immutable project characteristics relating to both the initiators themselves and their product or business are also identified as signals by potential investors and can therefore have significant influence on campaign results (Bollaert et al., 2020; Brem & Wassong, 2014).

Initiator characteristics Regarding the initiator of a crowdfunding campaign, it has been found that both education and work experience are perceived as signals for project quality (Moritz et al., 2015). Accordingly, empirical results show a positive relationship between having an MBA and the success of a crowdfunding campaign (Ahlers et al., 2015; Brem & Wassong, 2014). The same holds for having relevant industry experience (Huang et al., 2022). Lagazio and Querci (2018) further find that investors prefer projects from larger and more diverse entrepreneurial teams over single-person ventures. There is also prior literature looking at potential gender differences in crowdfunding success which unanimously finds that campaigns initiated by women are more likely to reach their target amounts (Brem & Wassong, 2014; Frydrych et al., 2014; Josefy et al., 2017). It is argued that this is due to the fact that women tend to use inclusive and positive emotional language which signals passion and commitment whereas men tend to use more money-related language which can come across as possessive (Gorbatai & Nelson, 2015). A general study on the effects of initiator character traits on funding success has been carried out by Bollaert et al. (2020). They find that narcissistic initiators tend to set less ambitious funding targets and longer campaign durations in an attempt to avoid the humiliation of failing. Investors, however, seem to be able to recognize narcissistic tendencies of initiators and refrain from supporting them.

Product characteristics Research has shown that both product creativity and uniqueness are interpreted as signals for the passion of the entrepreneur and thus increase the overall emotional appeal of a campaign (Davis, Hmieleski, Webb, & Coombs, 2017). Emotional appeal is also higher if the campaign is in line with socially desirable trends or behaviors. For example, Calic and Mosakowski (2016) find that campaigns with an apparent sustainability orientation are

more likely to succeed. A similar positive effect has been identified for projects that stress their regional focus and contribution to the local community (Angerer et al., 2017; Brem & Wassong, 2014). Both cultural and local proximity between initiators and investors have been found to increase the likelihood of funding success (M. Lin & Viswanathan, 2016; Zheng et al., 2014). Sharing the same cultural or regional roots is thereby functioning as a signal for trustworthiness and reliability (Mollick, 2014).

Concerning the degree of innovativeness of the crowdfunded product, literature is yielding mixed conclusions. While incremental innovation has been found to increase the amount of funding pledged per investor, the contrary effect has been observed for radical innovation (Chan & Parhankangas, 2017). It is reasoned that radical innovation hinders understandability of the campaign which is in turn increasing perceived uncertainty of potential investors (Angerer et al., 2017). Understandability has also been used to explain the observation that campaigns offering products for the end-customer (B2C) tend to be more successful than campaigns targeting commercial customers (B2B) (Brem & Wassong, 2014). Lukkarinen et al. (2016) conjecture that the reason why B2C campaigns exhibit superior success rates is simply that they are offering more understandable products. Alternative explanations for the phenomenon are that B2C campaigns simply appeal to a larger target audience (Antonenko et al., 2014) or that the entire mechanism of using signals to mitigate information asymmetries is inefficient for professional investors with more knowledge and resources (Ahlers et al., 2015).

3.2.1.3 Communication

Initiators can also actively send out quality signals to potential investors through different means of communication. For example, Kraus et al. (2016) find that blog entries posted on the campaign page can convey commitment and effort and are thus positively related to funding success. Another way to communicate with investors is through posting project updates either on the campaign page or via newsletters. Scholars have found that regular provision of project updates is considered as a signal for trustworthiness and quality by potential investors and thus has a positive effect on crowd participation (Kraus et al., 2016; Kuppuswamy & Bayus, 2018; Mollick, 2014). The magnitude of an update's effect is, however, depending on its content (Block, Hornuf, & Moritz, 2018). While the strongest positive influence has been found for updates on campaign and business developments, new rewards, and social promotion, updates on the entrepreneurial team or updates answering questions have only little influence on funding success.

The latter is in contrast to findings stating that providing prompt responses to investors' questions or even proactively publishing FAQs on the campaign page can function as a signal for transparency and thus foster campaign success (Antonenko et al., 2014; Kraus et al., 2016). Third party endorsements and investor comments are also perceived as signals for project quality and therefore positively related to funding success (Huang et al., 2022). Courtney et al. (2017) find that rather than the sheer amount of comments posted by investors, it is their sentiment that is paramount to positively affect funding outcomes.

3.2.2 Social capital and crowdfunding success

In the context of business management, social capital is most prominently defined as "the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by individuals or social units" (Nahapiet & Ghoshal, 1998, p. 243). In a transaction setting, it is assumed that social ties between two contracting parties mitigate uncertainty by facilitating access to private information (Shane & Cable, 2002). Social obligation and pre-established trust on a personal level further ease reaching transaction agreements.

Consequently, prior research has found that the size of the initiators' personal network is positively related to crowdfunding success (Brem & Wassong, 2014; Lukkarinen et al., 2016; Skirnevskiy et al., 2017). This relationship holds not only for real-world connections but also for digital relationships such as social network ties (Zheng et al., 2014). For example, the number of an initiator's Facebook friends has been found to be positively associated with funding success (Koch & Siering, 2015). With the maturing of crowdfunding, platforms are no longer acting solely as financial intermediaries but are increasingly becoming social networks of their own (Skirnevskiy et al., 2017). By being regularly active on a platform, entrepreneurs can intentionally build up social capital on said platform which in turn increases their prospects of funding success (Cai, Polzin, & Stam, 2021).

For the build up of social capital, it does not matter if one is active as an initiator or as an investor. Zvilichovsky et al. (2013) find that there is direct reciprocity between project initiators on a platform, i.e., backing projects of other initiators increases the likelihood of success of one's own campaigns. The positive effect increases with the number of projects previously backed. Along the same lines, Butticè et al. (2017) find that campaigns by serial crowdfunders, i.e., initiators that have already launched multiple campaigns on the same platform, tend to be more

successful than those of first time initiators. This relationship holds irrespective of whether the previous campaigns have been successful or not (Chan & Parhankangas, 2017). The positive impact of social capital on campaign success has, however, been found to have a short lifespan (Butticè et al., 2017). Additionally, Colombo, Franzoni, and Rossi-Lamastra (2015) find that the positive impact of social capital on crowdfunding success is mediated by the amount of early backers and the amount of early capital collected. People with social ties to the initiators are functioning as accelerators since they are willing to invest in a campaign even when its associated uncertainty is still very high.

3.2.3 Definition of campaign success

Due to the investment-driven view of most prior literature on crowdfunding success, the definition of the term "success" itself is usually also focusing only on the capital allocating function of crowdfunding, i.e., success is determined by the amount of capital raised by a campaign. Many of the aforementioned quantitative papers researching different factors potentially associated with crowdfunding success operationalize success via a binary variable whose value depends on the realization of a predefined target amount (Ahlers et al., 2015; Bollaert et al., 2020; Butticè et al., 2017; Courtney et al., 2017; Koch & Siering, 2015). The ratio of amount collected to amount targeted is also frequently used to operationalize crowdfunding success (Antonenko et al., 2014; Davis et al., 2017; Frydrych et al., 2014; Huang et al., 2022; Kraus et al., 2016). Other less prominent operationalizations include the number of investors that have contributed to a campaign (Bi et al., 2017; Lukkarinen et al., 2016) or the average amount pledged per investor (Chan & Parhankangas, 2017; Kuppuswamy & Bayus, 2018).

However, from a manager's perspective, these definitions provide no information about the financial and strategic viability of a crowdfunding campaign. They lack consideration of both the associated cost of capital as well as any potential benefits in the area of marketing and company development. Especially for new ventures that desire growth, the latter might be much more important than the simple collection of external funding (Gerber & Hui, 2013).

Therefore, our research is applying a holistic success definition based on the ex-post assessment of the campaign initiators themselves. This assessment includes three different sub-dimensions: First, it considers the financial success of the campaign including the associated cost of capital in relation to other sources of external funding. The second dimension is supposed to cover

any potential impact the campaign had on the development of the initiating company. This may include an increase in brand and company awareness or customer retention as well as successful implementation of a market test or proof-of-concept. The third dimension is covering the initiators' overall satisfaction with the concept of crowdfunding in general and their campaign in particular. It is supposed to incorporate non-monetary factors like time and effort spent by the initiators before, during, and after the funding period or potential conflicts and annoyances in the interaction with investors.

3.3 Research design and method

Given the low level of prevalence crowdfunding currently has in the German craft sector and the inductive nature of the research question, we draw on qualitative interview data from campaign initiators within the craft sector. To retrieve the desired information on successful campaign configurations from the interview data, we apply fuzzy-set qualitative comparative analysis (fsQCA) (Ragin, 1987, 2000, 2008). For the research endeavor at hand, the method has several advantages. First, it is by design a means for creating empirical typologies which is exactly the aim of this study (Schneider & Wagemann, 2010). Second, the approach is able to handle the high degree of complexity that is inherent to qualitative data as it does not require the data to follow any particular distribution or relationship (Bedford & Sandelin, 2015). Third, it is able to account for the asymmetrical nature of many social phenomena by permitting the analysis of multiple causation, equifinality, and causal asymmetry (Bedford & Sandelin, 2015). This is particularly important since prior research on crowdfunding success indicates that there might be complex and asymmetrical reasons for campaign success and failure (Gerber & Hui, 2013; Huang et al., 2022). Lastly, it is particularly useful to analyze mid-sized samples and can handle limited diversity (Schneider & Wagemann, 2013). Since most of the conditions under consideration are not dichotomous in nature, we chose the fuzzy-set version of QCA (Tóth, Henneberg, & Naudé, 2017). This enables us to capture the particularization and variation of the qualitative data in more detail (Rohlfing, 2020).

3.3.1 Sample and data collection

To gain the in-depth case knowledge that is needed to execute QCA (Ragin, 1987), we conducted semi-structured interviews with project initiators from the German craft industry. To identify

cases of interest, purposive criterion sampling has been applied (Patton, 2015). In a first step, we scanned all German-speaking crowdfunding platforms for projects with a craftmanship background. To ensure that the interviewees were able to provide a holistic ex-post assessment of their campaigns' success, only projects where the collection period had already expired were eligible for inclusion in the sample. As past research has shown that donation-based crowdfunding campaigns differ from transaction-based campaigns in both initiator and investor motivations and their expected financial outcome (Hoegen et al., 2018), the scope of the analysis has been limited to equity-, lending-, and reward-based campaigns. Furthermore, all campaigns asking explicitly for support due to the Covid-19 pandemic have been excluded from the sample.

This process led to a total of 176 cases that were eligible for interviewing. A first wave of requests has been sent out to a random subsample of 88 potential interviewees which resulted in the first 14 interviews. In line with the iterative nature of a qualitative research design, a preliminary analysis has been conducted on the first sample of interviews in order to check for any necessary adjustments of the interview guideline. Thereafter, a second wave of requests has been sent out to the remaining 88 initiators which resulted in an additional 9 interviews. Since the object of interest of this research is the individual campaign and two of the interviewed initiators had already conducted multiple campaigns, the corresponding interviews resulted in three and two cases, respectively.[13] Therefore, a total of 26 unique campaign-cases form the basis of the subsequent analyses.

The qualitative interviews took place between December 2020 and May 2021. Due to the Covid-19 pandemic, all interviews have been conducted via Zoom or Microsoft Teams. All interviews were conducted in German, the native language of both the interviewer and the participants. With consent of the participants, all interviews were audio-recorded and transcribed for analysis immediately following the interview. The interviews lasted between 24 and 45 minutes, amounting to a total of 13 hours of interview material. The interview guideline is structured chronologically alongside a typical crowdfunding process and can be found in table A.2 in the appendix.

The primary interview data has been triangulated using information from the campaign pages and company websites. This includes meta data on both the campaign and company, legal

[13] This is also the reason that there are two campaigns in the sample that did not utilize a platform. The corresponding initiators had carried out campaigns both with and without the help of a platform.

documents like loan contracts and investor information sheets as well as any accessible communication with investors via blog entries, newsletters, discussion boards, and social media postings. Campaigns from eight different platforms are part of the sample. The amount of money collected ranges from 2,400 euro to 3.5 million euro. The majority of campaigns (14) applies a reward-based approach, 10 campaigns can be characterized as crowd-lending and only two campaigns offer some form of equity to their investors. Table 3.1 shows detailed demographics of the sampled campaigns.

TABLE 3.1
Demographics of campaign cases

Case	Industry	Firm size	Company stage	Platform	Campaign type	Funding goal (€)	Amount collected (€)	Campaign period	Outcome
01-1	Watchmaker	20	Mature	Seedmatch	Lending	100,000	930,000	07/18	Success
02-1	Plumber	18	Mature	Kapilendo	Lending	30,000	30,000	06/18	Failure
03-1	Confectionery	1	Seed	Startnext	Reward-based	9,000	10,500	09/18-05/19	Success
04-1	Electrician	25	Mature	Katrim	Lending	100,000	100,000	04/19	Failure
05-1	Brewery	45	Growth	None	Lending	550,000	800,000	01/18-04/18	Success
05-2	Brewery	45	Growth	Conda	Lending	1,000,000	1,200,000	09/19-12/19	Success
05-3	Brewery	45	Mature	Conda	Lending	1,000,000	3,500,000	09/20-11/20	Success
06-1	Construction	25	Seed	Conda	Equity-based	200,000	200,000	09/20-12/20	Success
07-1	Butcher	4	Seed	Startnext	Reward-based	15,000	16,600	03/18-07/18	Success
08-1	Painter	6	Mature	Geldwerk1	Lending	30,000	9,800	10/18-11/18	Failure
09-1	Brewery	4	Seed	Startnext	Reward-based	6,000	6,600	02/19-03/19	Success
10-1	Brewery	2	Growth	Startnext	Reward-based	15,000	15,600	05/18-07/18	Failure
11-1	Carpenter	5	Seed	Startnext	Reward-based	10,000	16,000	09/19-11/19	Success
12-1	Confectionery	1	Seed	Startnext	Reward-based	10,000	11,900	01/21-04/21	Success
13-1	Construction	38	Mature	Kapilendo	Lending	750,000	2,250,000	08/19	Success
14-1	Brewery	5	Growth	Startnext	Reward-based	50,000	52,000	08/20-11/20	Success
15-1	Butcher	2	Seed	VisionBakery	Reward-based	10,000	13,000	03/18-05/18	Success
16-1	Carpenter	1	Seed	Startnext	Reward-based	6,000	6,600	09/18-10/18	Success
17-1	Brewery	5	Growth	Conda	Lending	50,000	160,000	12/20	Success
18-1	Shoemaker	6	Mature	Startnext	Reward-based	25,000	7,200	02/18-03/18	Failure
19-1	Butcher	7	Mature	Startnext	Reward-based	10,000	2,400	11/18	Failure
20-1	Blacksmith	6	Seed	Startnext	Reward-based	30,000	7,300	03/18-04/18	Failure
21-1	Brewery	48	Mature	1000x1000	Reward-based	70,000	82,000	01/18-02/18	Success
21-2	Brewery	48	Mature	None	Lending	200,000	300,000	06/20-09/20	Success
22-1	Bakery	17	Growth	Kapilendo	Equity-based	150,000	150,000	05/18-06/18	Failure
23-1	Shoemaker	3	Seed	Startnext	Reward-based	7,400	12,500	10/20-12/20	Success

3.3.2 Methodology

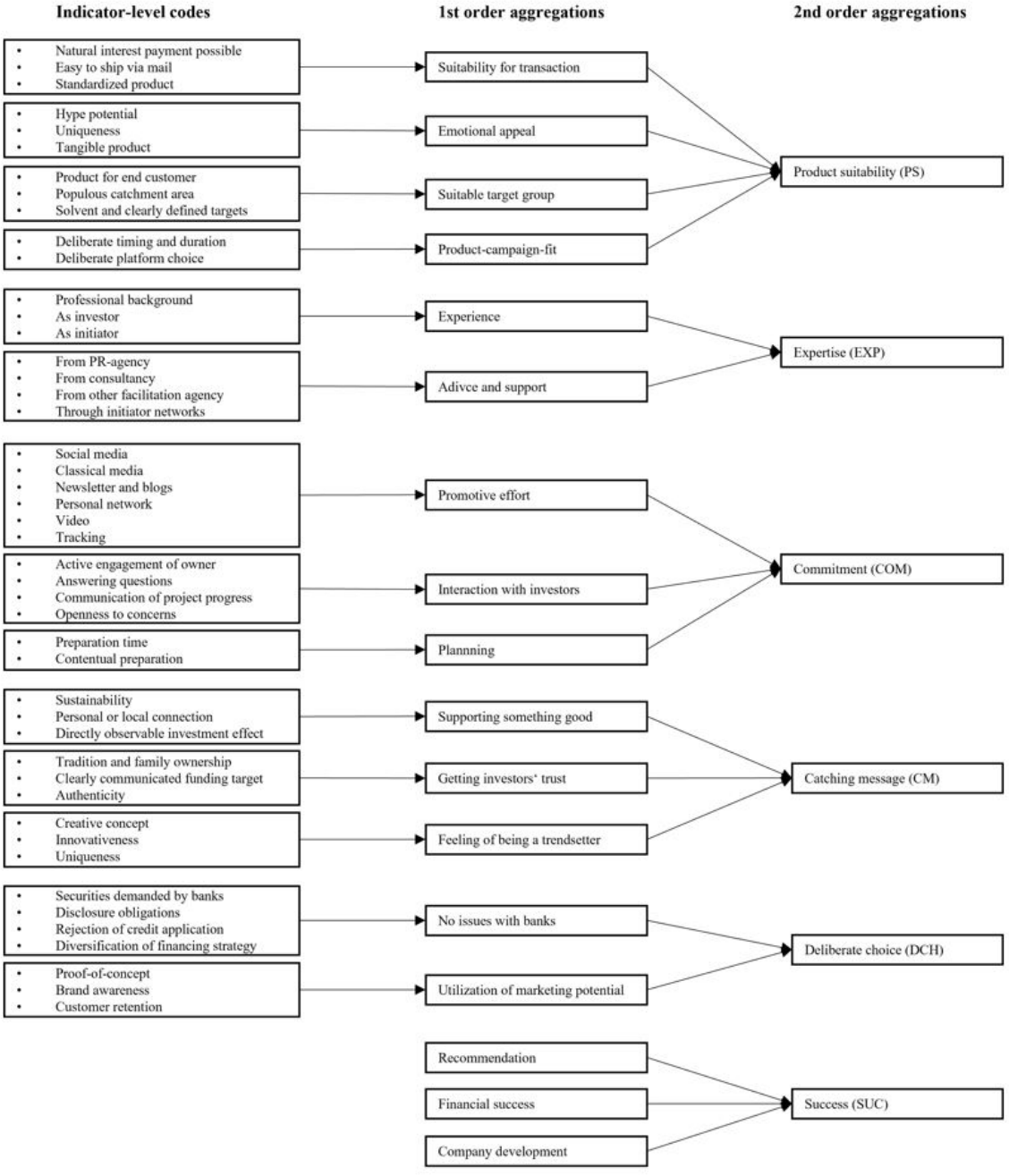
Retrieving successful campaign configurations from the raw qualitative interview data via fsQCA involves a three-step methodological process. First, the relevant success factors and drivers of success assessment need to be extracted from the data through a coding scheme. In a second step, set membership scores are calibrated for each case for all conditions as well as the outcome. In the final step, this information is then inputted to and analyzed via a QCA software tool.

3.3.2.1 Data coding

To identify the relevant conditions, the outcome, and their structural nature from the interview data, we applied a multi-step inductive coding process. We started out with what Strauss and Corbin (1990) call "open coding". This involves creating a large set of codes that classify any mention of success factors or assessment of campaign success. Using the *maxQDA* 2020 software package, this resulted in an initial, unstructured set of 676 coded text fragments. In a first step of structuring, codes that were repeated or similar between cases were organized into subordinate themes which we labeled "indicator-level codes". This resulted in a total of 68 indicator-level codes. A code description has been created for each indicator-level code. The next step of the coding analysis is called "axial coding". By looking at relations and commonalities between the indicator-level codes, the set of codes is further structured by grouping it under increasingly general higher-level categories (Gioia et al., 2013; Strauss & Corbin, 1990). The process ultimately resulted in a three-level data structure that is shown in figure 3.1.

To ensure the reliability and validity of the coding process and its resulting data structure, we brought in an additional researcher who was not previously involved in the research project. After familiarizing him with the coding framework and overall research design, we asked him to repeat the coding analysis (Miles & Huberman, 1994). This resulted in an initial inter-coder agreement of 86 percent. All initial disagreements were discussed in detail and codings were aligned until 100 percent agreement was reached. The second order aggregations are thereafter used as the conditions and outcome for the upcoming fuzzy-set QCA.

FIGURE 3.1:
Data structure



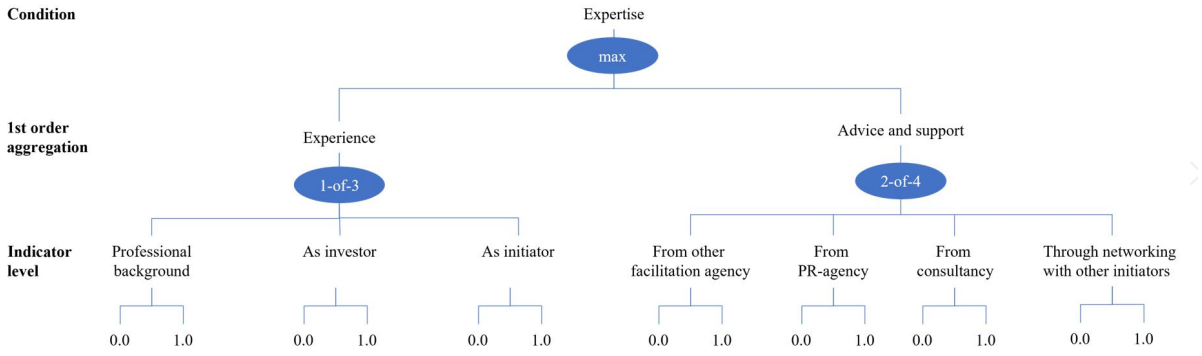
3.3.2.2 Data calibration

The transformation of raw data into membership scores and sets is especially sensitive with qualitative data since no quantitative anchor points are intuitively emerging from the data

(Basurto & Speer, 2012; Schneider & Wagemann, 2010). For the analysis at hand, we applied a process called "anchored calibration" which was first introduced by Legewie (2017) and is particularly suited for the calibration of qualitative interview data. The process consists of three steps which will be briefly outlined in the following.

The first step is constructing a calibration framework. To do so, the data structure that has emerged from the coding process is transformed into a set of so-called concept trees. This facilitates the breakdown of abstract concepts into palpable and measurable indicators. One concept tree is constructed for each second order aggregation of the data structure. Figure 3.2 shows an exemplary concept tree of the second order aggregation *Expertise*. The concept trees for the remaining second order aggregations can be found under figure A.2 in the appendix.

FIGURE 3.2:
Concept tree for 2nd order aggregation *Expertise*



Thereafter, the relevant variation at indicator level has to be determined. For each indicator, the graduation of variation is based on both theoretical knowledge and the observed variation in the data. Therefore, the scale of variation can differ between indicators. For the data at hand, there are several crisp indicators that can vary only between the two dichotomous extremes of full set-membership (1.0) and full non-membership (0.0) as well as several fuzzy indicators for which also partial set membership is possible. All fuzzy indicators are restricted to four levels of set membership (1.0, 0.67, 0.33, 0.0).

After deciding on the range of possible membership scores for each indicator, detail has to be provided to the concept tree taxonomy by verbalizing the numerical membership scores. To do so, we define what range of values (i.e., potential statements) of the qualitative interview data translates into each membership score. This results in one qualitative statement that best

describes the contentual range of each membership score of an indicator. These statements are called theoretical characteristics as they are derived solely from theory and prior work, not the empirical data itself.

In the second step of the calibration process, the calibration framework is applied to the empirical data. This is done by matching empirical data anchors (i.e., actual statements from the qualitative interview data) to the theoretical characteristics. To do so, concrete data pieces are to be identified that constitute the best example from the empirical data for a given theoretical characteristic. This results in one or two quotations from the interview data that are exemplary for the contentual range that is covered by a membership score of an indicator. Tables A.3 to A.8 in the appendix show the calibration framework and empirical data anchors.

In the final step of the calibration process, the actual membership scores are assigned to the conditions and the outcome. Therefore, the cases are first scored on indicator-level. Using the theoretical characteristics and empirical data anchors, a membership score is assigned to every case for all indicator-level dimensions. Thereafter, aggregation rules are defined to get from the indicator-level scoring to membership scores for the top-level conditions and outcome (i.e., the second order aggregations of the data structure). The aggregation rules spell out the relation between the different dimensions of a concept tree. Based on theoretical reasoning, logical AND, OR, and m-of-n aggregation rules are applied (Goertz, 2006; Goertz & Mahoney, 2005).

The aggregation of membership scores results in the final calibration of the top-level conditions and outcome. In the form of an input data matrix it shows exactly one membership score per case for each condition and the outcome. These can now be used as input variables for the upcoming QCA. The resulting data matrix is shown in table A.9 in the appendix.

3.3.2.3 Qualitative comparative analysis

The first step of conducting a QCA is to construct a truth table from the raw input data matrix. The truth table contains exactly one single row for every possible combination of conditions. By means of the minimum scoring rule, set membership scores are assigned to the cases for each truth table row so that each case has a set membership of more than 0.5 in exactly one row of the truth table. The truth table is shown in table 3.2. The truth table is the starting point for the upcoming search for necessary and sufficient conditions for the occurrence or non-occurrence of the outcome. To account for potential causal asymmetry, we undertake two separate analyses

of configurations for the success of a crowdfunding project and for its failure (Schneider & Wagemann, 2013). The QCA results presented in this paper have been computed using the *fsQCA* 3.0 software package.

TABLE 3.2
Truth table

PS	EXP	COM	DCH	CM	Number	SUC	Raw consistency
1	1	1	1	1	13	1	1.000
0	1	1	1	1	2	1	1.000
1	1	0	1	0	1	1	1.000
1	0	0	1	1	1	1	1.000
1	0	1	1	1	1	1	1.000
0	1	0	1	1	1	0	0.931
1	1	0	0	1	1	0	0.907
0	0	0	0	1	1	0	0.897
1	0	1	0	1	1	0	0.829
1	0	0	0	1	2	0	0.814
0	0	0	1	0	2	0	0.744

Only rows with at least one full-member case are depicted.
Outcome values have been calculated using a consistency threshold of 0.95.

Analysis of necessity Since the analysis of sufficiency allows no inferences on the presence of necessary conditions, the two should always be analyzed separately, with the analysis of necessity going first (Schneider & Wagemann, 2010). In QCA, necessity is analyzed by calculating consistency scores for all conditions and their combinations (Schneider & Wagemann, 2013). Consistency measures "the degree to which the cases sharing a given condition or combination of conditions [...] agree in displaying the outcome" (Ragin, 2006, p. 292). For the notion of necessity, this equals the degree to which X (a condition or combination of conditions) is a superset of Y (the outcome).[14] In line with Ragin (2006), we apply a consistency threshold of 0.9 for the presence of necessary conditions. Potential candidates are then checked for true logical contradictory cases[15] by examining their respective XY-plot (Schneider & Wagemann, 2013). For the success of a crowdfunding campaign, both DCH (0.960) and CM (0.920) show consistency scores of above 0.9. However, for CM, the XY-plot reveals that the case 15-1 (SUC = 0.67 and CM = 0.33) poses a true logical contradiction to the possibility of CM being a necessary

[14] For a detailed explanation on how to calculate and interpret consistency scores for necessary conditions, see Schneider and Wagemann (2013), pp. 139.

[15] A true logical contradictory case in fsQCA possesses a set-membership score that is qualitatively different from the postulated subset relation of either sufficiency or necessity. See Schneider and Wagemann (2013) for more details.

condition for the outcome. Therefore, having a catching message (CM) is not a necessary condition for the success of a crowdfunding campaign. For DCH on the other hand, no true logical contradictory cases are identified. Deliberate choice (DCH) can thus be regarded as a necessary condition for the success of a crowdfunding campaign.

The analysis for the non-occurrence of the outcome shows the absence of commitment (~COM, consistency = 0.964) to be the only potential candidate for a necessary condition. However, the XY-plot shows that the case 20-1 (SUC = 0.33 and COM = 0.67) is a true logical contradiction to this conjecture. Therefore, no necessary conditions for the non-occurrence of the outcome can be identified.

Analysis of sufficiency To analyze whether there are configurations of conditions that are sufficient to produce the outcome, QCA applies the Quine-McCluskey algorithm (McCluskey, 1956; Quine, 1952) to systematically identify commonalities between combinations of configurations that consistently lead to the outcome. To determine the consistency threshold for the analysis of sufficiency, we followed the procedure suggested by Schneider and Wagemann (2013) and looked for a notable gap between rows with relatively high and low consistency. This indicated 0.95 to be a suitable threshold for consistency. This is well above the minimum value of 0.75 recommended by Ragin (2008). Since we are dealing with a medium-sized N sample, the frequency threshold for including a truth table row in the analysis is set to 1 (Schneider & Wagemann, 2013). No true contradictory truth table rows were present during the minimization procedure.[16]

QCA researchers distinguish between three different solution terms that can result from the logical minimization, depending on the treatment of logical remainders. The complex solution makes no assumptions about any of the logical remainders and simply excludes them from the analysis. By making educated assumptions about logical remainders and including some of them in the analysis, two additional, simplified solution terms can be derived: the parsimonious and the intermediate solution (see Schneider and Wagemann (2013) for further information).

Based on the comparison of these three solution terms, one is able to distinguish between core and peripheral conditions (Ragin, 2008). Core conditions are present in both the parsimonious and intermediate solution and can be defined as "those causal conditions for which evidence indicates

[16] A true contradictory truth table row is defined as a configuration of conditions (i.e., a truth table row) that contains cases with different values for the outcome. The difference in outcome can therefore not be explained by the conditions at hand (Schneider & Wagemann, 2010).

a strong causal relationship with the outcome of interest" (Fiss, 2011, p. 398). Peripheral conditions, on the other hand, are eliminated in the parsimonious solution. For them, "the evidence for a causal relationship with the outcome is weaker" (Fiss, 2011, p. 398). Conditions that are present in neither of the three solution terms are called redundant conditions and are of insignificant impact on the outcome (Fiss, 2011).

To assess the empirical importance of configurations in explaining the outcome, a parameter called coverage is used in QCA research (Ragin, 2006). Coverage assesses the degree to which the outcome can be explained by the configurations under investigation. It can be calculated both on the level of a single configuration (raw coverage) and for the entire solution term (solution coverage). The results of the sufficiency analysis for the occurrence of the outcome are discussed in detail in the following section. A separate sufficiency analysis for the non-occurrence of the outcome has been conducted with a frequency threshold of 1 and a consistency threshold of 0.90. Its results are discussed in section 3.4.2.

3.4 Results

3.4.1 Configurations sufficient for success

Sufficiency analysis reveals three configurations sufficient for achieving funding success (see table 3.3). All three conditions are fully consistent with the outcome, i.e., they are perfect subsets of the outcome. The same is true for the overall solution consistency. Furthermore, the overall solution coverage of 0.822 shows that a substantial proportion of the outcome is explained by the three configurations. The complex solution formula is shown in equation 3.1.

$$\begin{aligned} PS{*} \sim EXP * DCH * CM &\rightarrow SUC\ (S1) \\ EXP * COM * DCH * CM &\rightarrow SUC\ (S2) \\ PS * EXP{*} \sim COM * DCH{*} \sim CM &\rightarrow SUC\ (S3) \end{aligned} \tag{3.1}$$

Configuration S1 states that the joint presence of high product suitability, deliberate choice and a catching message combined with the absence of expertise are sufficient to produce the outcome of campaign success. The former two conditions are core conditions while the latter two are

peripheral conditions. For S1, it does not matter whether commitment is present or absent. Configuration S2 states that the joint presence of the core conditions expertise and commitment together with the presence of the peripheral conditions deliberate choice and catching message is also leading to funding success. In the setting of configuration S2, product suitability is redundant. Lastly, configuration S3 implies that expertise and deliberate choice combined with product suitability are sufficient for campaign success as long as both commitment and catching message are absent. For S3 only expertise and deliberate choice are core conditions, while all other conditions are peripheral ones. Additionally, the results of the sufficiency analysis confirm the notion that deliberate choice is an indispensable condition for achieving funding success. Last resort types of crowdfunding campaigns with the sole purpose of making up for denied funding from other sources are therefore supposed to fail.

TABLE 3.3
Analysis of sufficiency: Successful campaign configurations

Campaign configuration	S1	S2	S3
Product suitability	●		•
Expertise	○	●	●
Commitment		●	○
Deliberate choice	●	•	●
Catching message	•	•	○
Consistency	1	1	1
Raw coverage	0.318	0.642	0.179
Unique coverage	0.100	0.424	0.040
Overall solution consistency		1	
Overall solution coverage		0.822	

Note: Solid dots (●) indicate the presence of the respective conditions while circles (○) indicate their absence. Large dots or circles refer to core conditions while small dots or circles refer to peripheral conditions. Blank spaces indicate that the condition is redundant for achieving the outcome.

3.4.2 Robustness checks

To ensure the validity and stability of the QCA results, we perform a series of robustness checks. Following prior methodological and empirical QCA literature (An, Rüling, Zheng, & Zhang, 2020; Huang et al., 2022; Skaaning, 2011) this is done by (a) changing the consistency thresholds for the analysis of sufficiency, (b) changing the calibration thresholds for the campaign success outcome, and (c) conducting a separate analysis of configurations that are sufficient for the absence of the outcome.

First, we varied the consistency threshold by steps of 0.05 and compared the resulting solution terms to the baseline scenario of 0.95 used in the main analysis. Overall, the variation of consistency thresholds did yield neither new nor logically contradicting solution terms. Increasing the consistency threshold did not change the results of the analysis at all. Lowering consistency thresholds generally increased solution complexity but led only to logical supersets of the baseline solution.

Second, we changed the calibration of the outcome variable from a mean aggregation to a logical AND aggregation. Thereby, only campaigns that achieved success in all three of the relevant outcome indicators are now considered overall successful. This decreases the number of successful crowdfunding campaigns in the sample from 18 to 11. Repeating the sufficiency analysis laid out in chapter 3.3.2 using the data with the recalibrated outcome reveals results that are almost identical to the baseline solution. The altered analysis identifies three configurations sufficient for the presence of the outcome. Conditions 1 and 2 are exactly identical to the baseline solution while for configuration 3 only DCH and CM switch their sign with the rest of the conditions remaining identical to the baseline solution. Both overall solution coverage and consistency do, however, decrease significantly compared to the baseline solution. The results of the sensitivity analysis regarding the recalibration of the outcome can be found in table A.10 in the appendix.

Lastly, we also conducted an analysis of sufficiency for the non-occurrence of the outcome, i.e., for the failure of a crowdfunding campaign. The analysis reveals two configurations that are sufficient for the absence of crowdfunding success (see equation 3.2 and table 3.4).

$$\begin{aligned} \sim EXP * \sim COM * \sim DCH * CM \rightarrow \sim SUC\ (NS1) \\ PS * \sim COM * \sim DCH * CM \rightarrow \sim SUC\ (NS2) \end{aligned} \tag{3.2}$$

According to configuration NS1, the absence of commitment, deliberate choice, and expertise combined with the presence of a catching message are sufficient for campaign failure regardless of whether product suitability is present or not. In the NS1 setting, commitment and deliberate choice are core conditions, whereas expertise and catching message are only of peripheral importance. Furthermore, NS2 states that the absence of both commitment and deliberate choice together with the presence of product suitability and a catching message are also sufficient for the non-occurrence of the outcome. For NS2 commitment and deliberate choice are core conditions

while expertise is redundant. Both configurations are logically distinct from the configurations that resulted in the occurrence of the outcome. This proves the absence of logically contradictory solutions for the occurrence and non-occurrence of the outcome, validating both the calibration and design choices made in the course of the analysis (An et al., 2020; Huang et al., 2022). With a value of 0.945, the overall solution consistency is way above the recommended threshold of 0.75 (Ragin, 2008).

TABLE 3.4
Analysis of sufficiency: Unsuccessful campaign configurations

Campaign configuration	NS1	NS2
Product suitability		●
Expertise	○	
Commitment	◯	◯
Deliberate choice	◯	◯
Catching message	●	●
Consistency	0.924	0.938
Raw coverage	0.428	0.534
Unique coverage	0.072	0.178
Overall solution consistency	0.945	
Overall solution coverage	0.606	

Note: Solid dots (●) indicate the presence of the respective conditions while circles (○) indicate their absence. Large dots or circles refer to core conditions while small dots or circles refer to peripheral conditions. Blank spaces indicate that the condition is redundant for achieving the outcome.

3.5 Discussion

3.5.1 Naming

A core principle of QCA is to always relate its results back to the empirical cases in order to allow for a meaningful interpretation (Schneider & Wagemann, 2010). In the following section, we take a closer look at the empirical cases that are part of each successful configuration and thereby name them in a comprehensible manner.

Looking at commonalities among the cases forming configuration S1 shows that all of them are offering products that are especially suitable for crowdfunding. They are facilitating transaction since they either enable a natural interest payment (e.g., case 09-1) or because they are easy to ship via mail (e.g., case 01-1). What is probably even more important is that they are,

for the most part, unique, innovative, and of high emotional appeal (e.g., case 03-1). While sparking the interest of early adopters, they are appealing to a large and diverse target group. Therefore, they have the potential to create an initial hype and subsequently a community of loyal customers. Furthermore, the interview data shows that even though most of the S1 initiators did not have relevant experience in crowdfunding, many of them stated that a large share of their investors were unknown to them and most likely recruited from the platform's regular user base. In most cases, the initiators of the S1 configuration also had no outside support in designing their campaign which indicates that the characteristics of the product itself were able to make up for potential shortcomings in campaign design. In line with the argumentation above, the configuration S1 is named *Innovators*.

In contrast, for the cases that are part of configuration S2, the product itself did not play any role in the success of their campaign. Instead, the initiators pushed their campaign through extensive promotion efforts using multiple channels including social media, classical media, newsletters, blogs, and even on-site marketing events in shopping areas (e.g., cases 05-2 and 05-3). Some of them were further carefully tracking the conversion rates of different marketing efforts in order to maximize their effectiveness (e.g., case 07-1). They also made substantial investments in the video on the campaign page to make sure of its professional appearance (e.g., case 21-1). Most of the initiators of the S2 configuration did show great effort and dedication in the communication with their investors. They made use of newsletters to communicate project progress (e.g., cases 15-1 and 23-1) and showed flexibility and openness for investors' concerns or special requests (e.g., case 14-1). Overall, for configuration S2, the initiators themselves are the campaign's center of attention, not the financed product or service. Therefore, the initiators of configuration S2 are named *Communicators*.

While configurations S1 and S2 included both novice and seasoned initiators, the thing that all initiators of configuration S3 have in common is their profound experience in the crowdfunding realm. Many of them would be characterized as serial crowdfunders by the relevant literature (Butticè et al., 2017) since they had launched at least a couple of campaigns prior to the one under study (e.g., cases 11-1 and 13-1). Therefore, they are able to rely on a large personal and professional network of both other initiators and regular investors whose investments provide them with a head start and form the cornerstone of their campaign success. Consequently, promotion efforts and product characteristics are of less importance in these cases since the investment decisions are, to a large part, motivated by personal reasons. Many initiators of the

S3 configuration also deliberately utilize reciprocity effects on crowdfunding platforms by making investments in other people's campaigns (e.g., case 06-1). The routine of the S3 initiators also allows for savings in the time and effort needed for the execution of a crowdfunding campaign. This in turn leads to significant reductions in the associated cost of capital. Since routine is the main success driver of the S3 initiators, the respective configuration is named *Routiniers*.

3.5.2 Contributions

Our study provides important insights into the factors influencing the perceived success of crowdfunding campaigns in small (craft) businesses and how these factors interact with each other in forming successful campaign setups. It thereby provides multiple contributions to extant literature and practice.

First, the analysis confirms that many of the conjectural factors theorized to be affecting funding success by prior literature are actually considered by campaign initiators in practice. It thereby adds a more practice-oriented perspective to the large string of literature investigating the drivers of crowdfunding success (Koch & Siering, 2019; Mollick, 2014). The qualitative coding confirms that initiators make deliberate choices about the timing and pledging conditions of their campaign (Frydrych et al., 2014), their campaign page design (Bi et al., 2017; Kraus et al., 2016), and communication strategy (Block, Hornuf, & Moritz, 2018; Mollick, 2014). The fact that many initiators put effort into framing their campaign in a socially appealing way and track the effectiveness of their promotion efforts also confirms that they are aware of the signaling effects their design choices have on potential investors (Ahlers et al., 2015). Extending the findings of prior work (Huang et al., 2022), our analysis uncovers the importance of initiator expertise for the success of small firms' crowdfunding campaigns, which can either be acquired through experience or external advice. Furthermore, we are able to show that initiators also consider more practical factors like the suitability for transaction of their rewards or products. Substantiating prior work, we find empirical evidence that initiators are aware of and sometimes even deliberately utilize direct funding reciprocity on platforms (Zvilichovsky et al., 2013). By showing that success is affected by platform choice, we are extending prior research that is often relying on data sets obtained from a single platform (Bollaert et al., 2020; Cappa et al., 2021; Courtney et al., 2017; Lukkarinen et al., 2016).

Second, the results of the sufficiency analysis reveal that while all of the top-level success factors extracted from the interview data are important, none of them are sufficient to produce funding success on their own. All of the configurations require at least three success factors to work together in order to pave the way to a successful fundraising campaign. Furthermore, the examples of expertise and commitment show that success factors that are positively affecting campaign prospects in one configuration might need to be absent to achieve success in other configurations. This proves that studies looking at success factors in isolation deliver not only incomplete results but might even urge campaign initiators to overinvest in some success factors, jeopardizing overall campaign viability (Huang et al., 2022; Koch & Siering, 2019). Thereby, we are making a methodological contribution to the literature on crowdfunding success factors as we show that there are complex, multi-dimensional, and equifinal interaction effects between success factors that cannot be properly investigated by regression-based statistical methods. Therefore, the use of alternative analytical tools like QCA is offering a huge potential to both crowdfunding research in particular and entrepreneurship research in general (Douglas, Shepherd, & Prentice, 2020; McSweeney et al., 2022).

Third, by relying on qualitative data regarding the success assessment of the initiators, our results confirm the notion that it falls short to measure campaign success simply via the amount of capital allocated (Junge et al., 2022; Shneor & Vik, 2020). This study features empirical cases in which the initiators were able to reach their target amount and still did not consider their campaign a success (e.g., due to excessive cost or effort). At the same time, there are empirical cases that failed to reach their target amount but had such a positive impact on the overall company development that they were nonetheless considered successful. This confirms prior research indicating that the motivations and objectives to engage in crowdfunding differ significantly across initiators (Angerer et al., 2017; Gerber & Hui, 2013). To this regard, we do not only extend prior literature on crowdfunding success by questioning the expedience of using narrow success definitions based on capital allocation (Butticè et al., 2017; Koch & Siering, 2019; Skirnevskiy et al., 2017) but also contribute to more general literature on financial decision-making in small businesses.

Lastly, by relating the results of the configurational analysis back to the sampled cases and characterizing them in a meaningful way (Furnari et al., 2021), this study provides small business managers and advisors with practical guidelines on how to increase the prospects of success of small (craft) businesses' crowdfunding campaigns. By showing how different success factors

interact with and complement or substitute each other, it becomes apparent that crowdfunding can be an attractive means of financing for small (craft) businesses with diverse sets of resources and characteristics. Our results highlight the potential of crowdfunding as a financing alternative for small enterprises and thereby contribute to the general literature on small firm financing. Furthermore, advisors can use the findings of this study to increase overall awareness of crowdfunding among small (craft) business managers and thus help to increase implementation rates and prevent small firms from being locked-in on bank financing (Hernández-Cánovas & Martínez-Solano, 2010).

3.5.3 Limitations and future research

As with any empirical work, there are also some limitations to our study that have to be considered but which, at the same time, point out avenues for future research. First, even though the fuzzy-set version of QCA is applied, the degree of variation both within the conditions and the outcome that can be covered is limited to a maximum of four distinct membership scores. Therefore, more fine-grained differences in the manifestations of success factors get lost in the analytical process. For the same reason, our study allows no assessment of the ultimate degree of success or failure in the underlying campaigns.

Second, the procedural requirements of QCA also limit the number of conditions, i.e., success factors that can be considered in the analysis. This inevitably induces aggregation of the indicator-level success factors which have been extracted from the interview data. It is, however, these indicator-level success factors that can ultimately be influenced by campaign initiators. From a practitioner's point of view, the results of the configurational analysis are therefore not as close to the real-world decision-making challenges initiators are facing as the informational granularity of the interview data would allow. We mitigate this in part by relating the results of the configurational analysis back to the original sample cases. Still, future research might be of use to explore in more detail the interrelations between different indicator-level success factors.

Third, it has to be kept in mind that the study is relying on data based on the subjective assessment of campaign initiators. While this has the advantage of being able to take on a holistic view of campaign success, it comes at the cost of potential bias in statements made about their effort and imperfections. We tried to mitigate the potential risk of initiators whitewashing their actions in hindsight by triangulating the interview data with secondary data obtained from

the campaign pages but this is only possible for measurable, hard indicators. For many soft factors, we had no choice but to rely on the primary data at hand.

Fourth, the study exclusively takes on the point of view of a project initiator, looking at factors that affect their assessment of campaign success. However, since the crowdfunding market is a two-sided market, for it to flourish in the long run it is paramount that both initiators and investors are satisfied. As investors might consider different aspects when evaluating the success of their campaign investments, future research should give special attention to the investors' view on crowdfunding success.

Lastly, regarding the generalizability of the results, it should be noted that the sample was limited to campaigns launched by small German craft ventures. While it is reasonable to assume that the results are transferable to German small businesses outside the craft sector, the situation might be different for larger corporations. Large companies differ from small enterprises both with regard to the resources they have at their disposal and in their marketing-based risk-return profile of a crowdfunding endeavor. Future research could thus replicate our study design using a sample of campaigns launched by large corporations and look for differences in the drivers of success assessment. Furthermore, since the crowdfunding market is subject to regulatory requirements that may differ significantly between countries and prior research has shown that the success prospects of a campaign are strongly affected by its underlying regulatory framework (Lazzaro & Noonan, 2021), caution should be applied when transferring the results to markets outside the regulatory framework of the EU.

3.6 Conclusion

In recent years, crowdfunding has been strongly gaining momentum both in practice and subsequently in scientific research (Cambridge Centre for Alternative Finance, 2021; Hoegen et al., 2018). Especially for informationally opaque small enterprises, crowdfunding is a promising financing alternative to counter increasing lending standards by banks and mitigate the risk of getting locked into financing relationships with a monopoly lender (Hernández-Cánovas & Martínez-Solano, 2010). At the same time, it offers non-financial benefits like increasing the firm's public outreach, gaining and retaining customers, or testing the marketability of new products and services. To increase implementation rates among small firms, scientific research

is necessary that provides managers with empirical insights on how to improve their prospects of success in the crowdfunding market.

Based on qualitative interview data, this study sheds new light on the factors that crowdfunding initiators of small German craft businesses consider when assessing the outcome of their campaigns. It thereby provides a new perspective to the measurement of success in crowdfunding literature (Junge et al., 2022; Mastrangelo et al., 2020; Shneor & Vik, 2020). The utilization of data obtained directly from campaign initiators enables the application of a holistic success definition, considering not only the amount of capital collected but also the associated monetary and non-monetary costs as well as potential benefits in terms of company development. Responding to scholars' calls to investigate crowdfunding success factors from a more integrated point of view (Hoegen et al., 2018; Koch & Siering, 2019), we use a set-theoretic approach that enables us to analyze the interrelations of different success factors and how they interact with each other in forming both successful and unsuccessful campaign configurations.

The analysis identifies three distinct campaign configurations that are sufficient for success. In the case of *Innovators*, their success is to the most part driven by the financed product itself. Due to its innovative, creative, or simply appealing nature, a significant number of investors can be recruited from the platform's regular user base. *Communicators*, on the other hand, ensure their success via extensive communication and promotion efforts through various channels. Signaling commitment and reliability to investors is supposed to make up for any weaknesses in product suitability. The last configuration is made up of *Routiniers* who particularly profit from their crowdfunding experience and know-how. Investments from their personal network give their campaigns a head start and form the cornerstone of funding success. Furthermore, the necessity analysis shows that a crowdfunding campaign can only be successful if it is not seen as a funding opportunity of last resort. Instead, the decision to launch a crowdfunding campaign should be intrinsically motivated with the aim of utilizing its unique benefits over traditional sources of external funding.

From a practical perspective, this study shows that crowdfunding is an attractive and promising way of financing for small businesses with various sets of resources. By looking at how different success factors interact with and complement or substitute each other, we show that campaign success is achievable for small enterprises even if they fail to fulfil allegedly crucial requirements like having an attractive product or pertinent expertise.

4 | Essay III - Digital finance, banking sector consolidation, and small business lending: Empirical evidence from Germany

Abstract

Small business lending is shaped by creditors' ability to cope with informational opaqueness. The conventional paradigm argues that local, single-market banks are able to make superior lending decisions under opaqueness since they are lending at shorter distances which enhances their ability to gather and assess soft information. They thus have a competitive advantage in lending to small, opaque enterprises. This paper investigates how the rise of digital financial service providers like online-only banks, P2P lenders, or credit brokerage platforms and the ongoing consolidation of the conventional banking sector are affecting small firms' lender choices. Drawing on original survey data from 463 German small businesses, the paper assesses their determinants of digital finance adoption in light of the conventional paradigm's theoretical expectations. I find that while small firms seem to acknowledge the theoretical benefits of short lending distances and value tight relationships with local lenders, they react strongly to disruptions in those ties. The likelihood of cooperating with digital financial service providers increases strongly if firms experience branch closure or loan officer turnover. On a structural level, I find that cooperation rates with digital financial service providers are higher in areas with lower branch density and high average functional distances. These results show that to retain their dominance in the small business lending market, local banks should carefully ponder over future consolidation decisions.

Author: Benedikt Tratt

Keywords: small business lending; lender distance; lender choice; conventional paradigm; digital finance; bank finance

JEL Classification: G21; G23; G30; L26

Status: Working paper

4.1 Introduction

The market for lending to small enterprises is shaped by debtors' characteristic informational opaqueness and lenders' ability to cope with it (Berger, Klapper, & Udell, 2001; T. Zhao & Jones-Evans, 2017). Academic theory argues that due to shorter lending distances, local, single-market institutions should have a competitive advantage over large, multi-market providers in lending to small businesses (Agarwal & Hauswald, 2010; Flögel, 2018). According to the conventional paradigm of small business bank financing (Berger et al., 2014; de La Torre, Martínez Pería, & Schmukler, 2010), the stable, personal, and community-based nature of their relationship with small business clients enables local banks to produce qualitative, "soft" borrower information which can be utilized to make mutually superior lending decisions (Behr et al., 2013; Flögel & Beckamp, 2020). Due to the importance of the personal relationship between lender and borrower, literature also frequently refers to local banks as relationship lenders (Berger, Bouwman, & Kim, 2017; Berger & Udell, 2002; Boot, 2000; Duqi et al., 2018; Hernández-Cánovas & Martínez-Solano, 2010; Kysucky & Norden, 2016). In contrast, the more impersonal, arms-length screening approaches of multi-market, nonlocal lenders require hard, objective, quantitative information which small enterprises are only able, if at all, to produce at significant cost (Berger et al., 2005). Thus, local banks are said to be vital for the supply of debt financing to small businesses (Alessandrini et al., 2009; Berger et al., 2017).

However, growing regulatory requirements (e.g., Basel III) and labor market frictions have significantly increased operating costs of smaller financial institutions and prompted a surge of branch closures and bank mergers (Gärtner & Flögel, 2017). The number of independent financial institutions in Germany has dropped from 2,400 in 2004 to 1,500 in 2021 and the number of bank branches has more than halved during the same period of time (Deutsche Bundesbank, 2022). Along with increasing administrative costs and capital requirements, recent financial regulations have entailed a standardization of lending processes and broad application of quantitative, data-driven rating systems - both diminishing small banks' leeway of incorporating soft information in their credit decisions (Flögel, 2018; Marek & Stein, 2022).

At the same time, advancements in information and communication technology (ICT) have triggered the so-called fintech (financial technology) revolution, leading to the emergence of various internet-based digital financial service providers (DFSP). Their forgoing of a physical branch network significantly reduces overhead costs while advancements in big data analytics

and lending technologies based on the "wisdom of the crowd" (Surowiecki, 2004) are cutting down relationship lenders' informational edge (Petersen & Rajan, 2002). This prompts the question of whether the conventional paradigm of small firm bank financing still holds given the intense consolidation pressure faced particularly by smaller banks and increasing competition from digital financial service providers.

In this paper, I tackle said question by examining the determinants of small businesses' cooperation with digital financial service providers like online-only banks, peer-to-peer (P2P) lenders, or credit brokerage platforms. In particular, I investigate the impact the structure of the local banking market and the thinning out of banks' branch networks have on the digital finance adoption choices of small enterprises. The analyses in this paper are based on original survey data from 463 small German businesses and a unique location dataset of all bank branches in Germany.

Due to its historical imprint by small, regional savings and cooperative banks, relationship banking is deeply rooted in German small business lending (Flögel, 2018; Krahnen & Schmidt, 2004). The German banking sector does not only have by far the largest number of independent financial institutions among the EU28 (Statista Research Department, 2022) but is consequently also experiencing record numbers of bank mergers and (branch) closures (Deutsche Bundesbank, 2022). Simultaneously, branch-less digital banks have been able to increase their market share to 31 percent of all primary bank relationships in 2020 (Leichsenring, 2020), compared to 23 percent in the UK (Finder Research, 2022) and 20 percent in the US (Pollini, Nicolacakis, & Lovenheim, 2021). Together with the fact that it has the second largest market for both P2P lending and crowdfunding in the euro area (Cambridge Centre for Alternative Finance, 2021), Germany is particularly suited for the research aim at hand.

To the best of my knowledge, this is the first empirical study investigating the impact of structural changes within the banking sector on small firms' digital finance adoption choices. Thereby, I am responding to scholars' call for research on how the emergence of fintech finance affects small firms' bank relationships (Flögel & Beckamp, 2020) and what makes small enterprises susceptive to the offerings of digital financial service providers (Z. Lu et al., 2022).

My research makes three important contributions to extant literature and practice. First, it extends research on small firms' lender choices by including digital financial service providers.

Existing research mainly focuses on the choice between small, local banks and large, multi-market banks, disregarding alternative sources of funding (Berger et al., 2014; Jackowicz et al., 2021; Lam & Burton, 2005). By including them in the discussion, I allow for the possibility that ICT development and bank consolidation might prompt some small businesses to look for more favorable financing opportunities outside the conventional banking sector. From a practitioner's point of view, my results thus give insights if too much cost-cutting-driven consolidation can be counterproductive because it causes borrowers to leave the conventional banking sector. Second, my research contributes to the ongoing discussion about the effects of distance on small business lending (Agarwal & Hauswald, 2010; Bellucci et al., 2019; Degryse & Ongena, 2005; DeYoung et al., 2008; Flögel, 2018; Kärnä, Manduchi, & Stephan, 2021; Petersen & Rajan, 2002). By looking at cooperation patterns with digital, branch-less financiers, I am able to uncover if and which small businesses still value relational, geographical, and functional proximity to their lender. Furthermore, existing research often uses loan-contract data provided by banks to investigate the impact of lender distance on firms' objective financing terms (Alessandrini et al., 2009; Bellucci et al., 2019; Carling & Lundberg, 2005; Degryse & Ongena, 2005; Kärnä & Stephan, 2022). However, the importance of the owner-manager's subjective gut feeling for any business decision is broadly established in small business research (Jocumsen, 2004). Drawing upon original survey data from owner-managers allows me to analyze their subjective assessment of the importance of lender distance. Third, this article advances the nascent string of research on fintech finance for small businesses (Flögel & Beckamp, 2020). While there is a large body of literature investigating internet banking adoption and behavior of consumers (Belanche et al., 2019; Chawla & Joshi, 2017; Laukkanen, 2016; Shaikh & Karjaluoto, 2015; S. Singh et al., 2020; Zhou et al., 2010), empirical evidence on the application patterns of fintech finance by small enterprises is virtually non-existent.

I find that firms with longer and more concentrated relationships with local banks are less likely to engage in digital finance. In contrast, firms that have experienced significant turnover in their responsible loan officer or have been affected by the closure of a local bank branch are more likely to seek digital finance. This shows that while small businesses still seem to value close and stable relationships to local lenders, they react strongly if those ties are disrupted. Regarding the structure of the local banking market, the analyses show higher probabilities of digital finance adoption in areas with a lower physical branch density and higher average distances between the local information collecting branch and the bank's decision-making center. I do, however, find no effect of branch closures, loan officer turnover, geographical or functional

distance on the cooperation probabilities with large, multi-market conventional banks. My results thus implicate that digital finance and traditional bank finance are substitutes rather than complements (Hodula, 2022) and that in order to retain their dominance in the small business lending market, local banks should well-consider the effect on lending distances when deciding on consolidation endeavors.

The remainder of this paper is structured as follows. Section 4.2 discusses the role of distance for small business lending in light of the conventional paradigm. In section 4.3, I establish my research hypotheses. Section 4.4 describes the data and research methodology. Section 4.5 presents the empirical results. Section 4.6 discusses the implications of my analyses in the context of existing evidence, examines their limitations, and outlines avenues for future research. Section 4.7 concludes the paper.

4.2 Lender distance and the conventional paradigm of small business bank financing

In Germany, banks account for 65 percent of all external funding provided to small businesses (KfW Research, 2022a). Similar figures have been determined for the UK (British Business Bank, 2021) and the US (Wiersch, Miseara, Marre, & Wavering Corcoran, 2023). Due to this importance of banks for the financing of small enterprises, a lot of research effort has been dedicated to the bank choices of small firms and their effect on the availability and terms of credit. From this research, the so-called "conventional paradigm" of small firm bank financing has emerged (Berger et al., 2014). It states that local, single-market banks have a competitive advantage in providing credit to informationally opaque small businesses due to their superior ability to form close and personal borrower-lender relationships (Behr et al., 2013; Scott, 2004; Udell, 2008). The degree of the competitive edge is determined by three kinds of distances: relational distance, geographical distance, and functional distance (Berger et al., 2014, 2005; Berger & Udell, 2002, 2006).

Every lending decision is determined by the lender's ability to assess the repayment capabilities of the borrower. In small business lending, this is particularly difficult since small enterprises tend to be informationally opaque (Petersen & Rajan, 2002). They are subject to lenient public disclosure requirements and their performance is strongly influenced by intangible resources such

as the capabilities and personality of the owner-manager, leading to a high level of informational asymmetry (Flögel & Beckamp, 2020). Literature on relationship lending has found that banks tend to address this issue by incorporating soft information into their credit decisions (Berger & Black, 2011). Stein (2002, p. 1892) defines soft information as "information that cannot be directly verified by anyone other than the agent who produces it". Soft information can include the assessment of the borrower's character (e.g., integrity or commitment), his managerial capabilities, knowledge about singular or unfortunate events like the unexpected cancellation of a large order, or general familiarity with the particularities of the firm's local market (Udell, 2009). It is usually obtained through a prolonged, close, and personal relationship between the bank's credit agent and the firm's owner-manager (Boot, 2000). Since soft information is non-quantifiable, it is difficult to store and transmit both within and across organizations (Knyazeva & Knyazeva, 2012; Udell, 2008). Therefore, research has found that a bank's ability to produce and process soft information is determined by the distance to its borrowers (Agarwal & Hauswald, 2010). Distance in this regard is a multidimensional measure for the disparity between lender and borrower with three main manifestations (Nitani & Legendre, 2021).

The first dimension is referring to relational distance and covers the strength of the bank's relationship with its borrowers. Theory argues that relationship strength increases access to soft information through a mutual increase of trust on both the side of the lender and the borrower (Kautonen, Fredriksson, Minniti, & Moro, 2020; Moro & Fink, 2013; Saparito, Chen, & Sapienza, 2004). On bank level, relationship strength is usually measured via length and exclusivity of the firm-bank relationship (Berger et al., 2014). However, there is also a strong personal component to relational distance which describes the social relationship between the firm's owner-manager and the bank's account manager (Lehmann & Neuberger, 2001). Common values and community ties lead to a higher perceived trustworthiness of local, single-market banks among small businesses which allows these banks to form stronger relationships and consequently enables superior access to soft information (Berger & DeYoung, 2001; Kautonen et al., 2020; Nitani & Legendre, 2021). This in turn increases the accuracy of default predictions on small business loans by single-market banks (Milani, 2014).

While some scholars have issued warnings that close and exclusive lending relationships with local banks can lead to unfavourable lending conditions for small firms due to a locked-in effect that allows monopolistic rent extraction by the lender (Angori, Aristei, & Gallo, 2019; Hernández-Cánovas & Martínez-Solano, 2010; Ioannidou & Ongena, 2010; Kysucky & Norden,

2016), most empirical evidence suggests a mutually beneficial effect of close lending relationships between small enterprises and local banks (Alessandrini et al., 2009; Behr et al., 2013; Kärnä et al., 2021; Lehmann & Neuberger, 2001; Petersen & Rajan, 1994; T. Zhao & Jones-Evans, 2017; T. Zhao et al., 2021). It has been shown that relationship strength is positively affecting access to credit for small businesses (Cole, 1998; Hernández-Cánovas & Martínez-Solano, 2010; Petersen & Rajan, 1994). This alleviating effect of strong borrower-lender relationships on credit constraints is especially pronounced during times of macro- (Beck et al., 2018; Cotugno et al., 2013; Fiordelisi et al., 2014) and microeconomic crises (Elsas & Krahnen, 1998). Furthermore, collateral requirements are decreasing with relationship length due to increasing information about borrower risk (Berger & Udell, 1990, 1995; Degryse & van Cayseele, 2000). Regarding the impact of relationship strength on interest rates, empirical evidence is inconclusive. While some scholars find that banks do indeed tend to exploit their monopolistic informational advantage and charge higher interest rates for loans to long-time borrowers (Angelini et al., 1998; Degryse & van Cayseele, 2000), others argue that the superior ability to assess default probabilities allows banks to hand out cheaper debt to relationship borrowers (Berger & Udell, 1995; Boot & Thakor, 1994). Hernández-Cánovas and Martínez-Solano (2010) find that small businesses with strong relationships to two separate financial institutions pay the least for their debt.

The second dimension regards pure geographical distance. Information theory states that due to the interpretative authority of the producing agent, the accuracy of soft information deteriorates with increasing transmission distance (Liberti & Petersen, 2019). Consequently, DeYoung et al. (2008) have shown that increasing borrower-lender distance contributes to greater loan default rates as it impedes both the collection and monitoring of soft information. Single-market banks are not only lending at shorter geographical distances on average (Brevoort & Hannan, 2006), their familiarity with local market conditions and peculiarities further facilitates the contextualization and interpretation of soft information (Agarwal & Hauswald, 2010). Empirical evidence shows that increasing distance between borrower and lender negatively affects credit availability for small businesses (Agarwal & Hauswald, 2010; Backman & Wallin, 2018). Therefore, small firms in areas with lower branch density (Alessandrini et al., 2009; Di Bonaccorsi Patti & Gobbi, 2001) or rural areas in general (Kärnä & Stephan, 2022) face more credit constraints. H.-L. Q. Nguyen (2019) finds that the closing of a local bank branch leads to a sharp and persistent decline in credit supply to small businesses in the area. Both Knyazeva and Knyazeva (2012) and Kärnä et al. (2021) further find that interest rates tend to increase with borrower-lender distance due to the cost of transmitting soft information over distances. The same relationship

has also been found for non-price loan terms like the use of financial covenants and collateral requirements (Knyazeva & Knyazeva, 2012). However, the impact of borrower-lender distance on interest rates and credit conditions in general seems to be heavily impacted by the degree of competition in a local banking market (Bellucci, Borisov, & Zazzaro, 2013; Degryse & Ongena, 2005; Herpfer, Mjøs, & Schmidt, 2023). In order to keep local banks from using their geographical advantage in the processing of soft information to price discriminate, there has to be a credible enough threat of losing business to a nearby competitor (Cerqueiro, Degryse, & Ongena, 2009). Therefore, rather than the distance to the nearest bank branch, it seems the size and diversity of the local branch network are driving loan rates (Rice & Strahan, 2010).

Functional distance constitutes the third dimension determining a bank's competitive edge in small business lending. It describes the distance between the point of information collection (i.e., the account manager in the local branch) and the credit decision authority (i.e., the loan officer at the bank's headquarters). Research has shown that multiple layers of management and fixed communication channels impede efficient processing of soft information (Cole et al., 2004). Furthermore, Liberti and Mian (2009) show that if the information-producing agent feels that they have no control over the use of their information in the actual credit decision-making, the amount and quality of the collected information decreases. In cases of strict division of roles between customer relationship management and credit decision-making, the former can even be incentivized to strategically manipulate the information they transmit through the lender's communication channels (Crawford & Sobel, 1982). As a result, Fiordelisi et al. (2014) show that borrower default rates increase with functional distance. Since separation between information collection and credit decision-making tends to increase with bank size, loan application assessment based on soft information is more costly for and consequently less common among corporate, multi-market banks (Berger & DeYoung, 2001; Flögel & Beckamp, 2020). Summing up, functional distance undermines the advantages of relational and geographical proximity (Berger et al., 2014) and disincentivizes the collection and use of soft information (T. Zhao et al., 2021).

Consequently, empirical literature provides manifold evidence for the adverse effect of functional distance on small business lending. Greater functional distance has been found to hamper small firms' overall access to credit (Alessandrini et al., 2009; Cotugno et al., 2013). In regions with a higher average functional lending distance, a larger proportion of small businesses reports difficulties in obtaining bank financing (Di Bonaccorsi Patti & Gobbi, 2001; T. Zhao & Jones-Evans, 2017; T. Zhao et al., 2021). The situation is aggravated in times of macroeconomic

distress since functionally distant multi-market banks have been shown to shift funds from their peripheral (distant) markets closer to their headquarters during crises (de Haas & van Horen, 2013; Giannetti & Laeven, 2012). Bragoli, Burlina, Cortelezzi, and Marseguerra (2022) extend this research to the overall performance of small businesses. They find that functional distance negatively impacts their return on assets, especially during periods of credit boom.

Banking sector consolidation increases all three dimensions of borrower-lender distance for small businesses, thus diminishing the benefits of lending relationships with local, single-market banks. At the same time, the availability of digital lending alternatives is increasing rapidly. Due to their forgoing a physical branch network, they operate at lower cost while claiming that superior lending technology allows them to specifically target informationally opaque businesses (Flögel & Beckamp, 2020). This prompts the research question: Are structural changes in the banking sector affecting small firms' willingness to cooperate with digital financial service providers?

4.3 Banking sector structure and digital finance adoption

As set out earlier, following the conventional paradigm, the structure of the local banking market should impact small firms' lender choices. Given the benefits of relational, geographical, and functional proximity regarding both the availability and terms of credit, an increase in any of those three distances should prompt small firms to look for alternative sources of funding and consequently make them more susceptive to the offerings of digital financial service providers.

The benefits of close, prolonged borrower-lender relationships for informationally opaque small businesses have been vastly documented in the literature (Harhoff & Körting, 1998; Petersen & Rajan, 1994). The increase in mutual trust that results from relational proximity has been found to alleviate credit constraints (Cole, 1998; Hernández-Cánovas & Martínez-Solano, 2010), ease collateral requirements (Degryse & van Cayseele, 2000), and lower the cost of credit (Berger & Udell, 1995). Jackowicz et al. (2021) show that small enterprises are aware of those relational benefits since they base their lender choices primarily on trust-related factors rather than transactional ones. Trust on the other hand has been shown to increase in the duration of the lending relationship (Saparito et al., 2004) and through a personal, social relationship between loan officer and borrower (Lehmann & Neuberger, 2001). Consequently, Lam and Burton (2006) have shown that small firms' loyalty towards their main bank increases in the duration of the relationship but that any disruption to an established relationship, like a change in the loan officer,

induces switching intentions. F. Singh and Kaur (2015) also found frequent staff turnover to be an antecedent of small firms' bank switching intentions. This leads to the following hypothesis:

H1a: *Firms with stronger (i.e., longer and more personal) relationships to a conventional bank are less likely to cooperate with digital financial service providers.*

Scholars have shown that small businesses' lending relationships are highly branch dependent and thus most likely disrupted by the closure of the respective local branch rather than being substituted by another branch of the same institution (Bonfim, Nogueira, & Ongena, 2021; Duquerroy, Mazet-Sonilhac, Mésonnier, & Paravisini, 2022; H.-L. Q. Nguyen, 2019). Consequently, local branch closings lead to a tightening of credit for small businesses in the area (H.-L. Q. Nguyen, 2019). Additionally, local branch closings also negatively impact the credit conditions of its former small business borrowers due to "the loss of information privately held by the branches that close" (Bonfim et al., 2021, p. 1215). While no empirical evidence on the impact of branch closures on small firms' intentions to switch lenders exists, research on retail banking has shown a positive relationship between branch closures and consumers' switching behavior (Clemes, Gan, & Zhang, 2010; Gerrard & Barton Cunningham, 2004; C. Zhao, Noman, & Asiaei, 2022). Therefore, I hypothesize the following:

H1b: *Firms that have been affected by a bank branch closing are more likely to cooperate with digital financial service providers.*

Empirical literature has documented a positive impact of geographical lender proximity on credit availability to small businesses (Kärnä & Stephan, 2022). Particularly the density of the local branch network has been found to positively affect both the amount and conditions of credit available (Alessandrini et al., 2009; Di Bonaccorsi Patti & Gobbi, 2001; Kärnä et al., 2021; Knyazeva & Knyazeva, 2012). At the same time, difficulties in obtaining credit and dissatisfaction with the credit offerings of the current bank have been found to drive small businesses' decisions to switch banks (Howorth, Peel, & Wilson, 2003; F. Singh & Kaur, 2015) and look for alternative means of funding (Walthoff-Borm, Schwienbacher, & Vanacker, 2018). Consequently, small firms should be more likely to cooperate with digital financial service providers in areas with lower branch density in order to make up for the lacking local supply. Research on consumer behavior substantiates this conjecture. It has been shown that "[...] the farther the customer is from the closest offline alternative, the higher the likelihood of he or she using electronic services" (de Blasio, 2009, p. 111). Early research on digital banking offerings indicates that

banks seem to anticipate this behavior to hold also for their lending business since their initial e-business offerings were focused on the local markets with the lowest branch density (Corrocher, 2006; Di Bonaccorsi Patti, Gobbi, & Mistrulli, 2004). However, approaching the matter from the demand side, Khan (2004) is unable to detect a significant relationship between consumers' online banking adoption and distance to the closest bank branch. Nonetheless, following the theoretical implications of the conventional paradigm, I set forth the following hypothesis:

H2: *Firms in areas with a lower bank branch density are more likely to cooperate with digital financial service providers.*

Similar to the impact of geographical distance on small business lending, empirical literature has also shown functional distance and the concentration of lending decisions in banks' headquarters are hampering small firms' access to credit (Alessandrini et al., 2009; T. Zhao et al., 2021). F. Singh and Kaur (2015) show that small firms are aware of the adverse effect of functional distance on their lending opportunities since they document that low perceived decision authority of the local bank branch increases switching intentions. They thus proof that functional distance is of practical relevance in small firms' lender choices. Therefore, I hypothesize the following:

H3: *Firms in areas with a higher average functional lending distance are more likely to cooperate with digital financial service providers.*

Apart from relational, geographical, and functional distance, literature has also identified several owner and firm characteristics that impact small firms' lender choices. Information systems research has shown that businesses' willingness to use e-banking options is driven by perceived security and perceived privacy of the general e-banking industry. The relationship is moderated by the perceived trustworthiness attributes of the particular bank, including benevolence, integrity, and competence (Yousafzai, Pallister, & Foxall, 2003). Yousafzai et al. (2003) label this interplay of variables "e-trust". Subsequently, e-trust has also been found to influence the perceived value and consequently adoption rates of mobile banking among private consumers (Berraies, Ben Yahia, & Hannachi, 2017; Zhou, 2011). Additionally, gender is affecting both credit availability and alternative finance adoption. Female entrepreneurs face tighter credit constraints (Bellucci, Borisov, & Zazzaro, 2010) and show lower fintech adoption rates (S. Chen, Doerr, Frost, Gambacorta, & Shin, 2023). Age is also negatively related to trust in and usage of fintech (S. Singh et al., 2020) and mobile banking services (Laukkanen, 2016).

On firm level, it has been shown that constraints in access to formal bank credit prompt small firms to look for alternative sources of external funding (H. T. Nguyen, Nguyen, Le Dang, & Nguyen, 2022). Credit constraint businesses are thus more likely to seek fintech finance (Xiang, Zhang, & Worthington, 2021). Due to variations in the degree of informational opacity and operational complexity, firm size is also affecting both the number and nature of banking relationships (Berger et al., 2014) and overall sources of funding of small businesses (Gallo & Vilaseca, 1996; Romano, Tanewski, & Smyrnios, 2001).

4.4 Data and methodology

4.4.1 Data sources

Data from two sources are combined to test the hypotheses mentioned above. Information on the structure of the local banking market is based on web-scraped geolocation data of all bank branches in Germany as of end of 2022. Information on digital finance adoption, firms' relationships to conventional banks as well as several owner and firm characteristics originates from a unique survey instrument. The respective questionnaire (see figure A.4 in the appendix) is structured into four parts. The first part surveys demographic data on the firm and its owner-manager, while the second part contains questions about the number, type, and nature of the firm's relationships with conventional banks. The third part is concerned with the firm's financial situation and financing conditions. The ultimate part surveys the firm's experience with and attitude towards several digital financial service providers. These include online-only banks[17], crowdfunding and P2P lending platforms, as well as credit comparison or brokerage platforms.

The survey instrument has been distributed to an industry-balanced random sample of 15,000 German small firms[18] via email in late November 2022.[19] Participants had the option to fill out the questionnaire online or in analog form. This led to a total of 466 online and 45 analog responses. However, 46 responses had to be disregarded from further analysis due to excessive missing data. Furthermore, two responses had to be excluded since they no longer fulfilled the criteria to qualify as a small enterprise, i.e., their size had grown above 50 employees. This led

[17] Financial institutions and fintechs without a physical branch network.

[18] I define small businesses according to the specification of the European Commission (EU Recommendation 2003/361) as enterprises having less than 50 employees and either an annual turnover or a balance sheet total of less than 10 million euro.

[19] Sample firms have been identified via the registries of the 53 German chambers of crafts.

to a total of 463 usable observations, equalling an effective response rate of 3.1 percent. This is within the expected range for surveys targeting small business owner-managers (Newby, Watson, & Woodliff, 2003; Seshadri & Broekemier, 2022) and comparable to similar studies on small firm management and financing (Gnan, Montemerlo, & Huse, 2015; Hernández-Cánovas & Martínez-Solano, 2010; Lardon, Deloof, & Jorissen, 2017).[20] I applied three different tests for non-response bias. Following the approach of Widener (2007), I first compared early (first quartile) and late (last quartile) respondents. Thereafter, I compared participants who completed the entire survey to partially non-responsive participants (Jackowicz et al., 2021). Lastly, I compared answers recorded online to those recorded in analog form. None of the three tests yielded significant differences in any of the variables under investigation.

4.4.2 Variables and method

I investigate the impact of banking sector structure (i.e., geographical and functional distance) and relational distance on small firms' digital finance adoption by running a set of logit regressions. Equation 4.1 presents the general structure of the models:

$$DF.ADOPTION_i = f(M.STRUCTURE_p; BANK.REL_i; OWNER_i; FIRM_i; ind) \quad (4.1)$$

The dependent variable $DF.ADOPTION_i$ is a binary variable that takes on the value 1 if the i-th firm declared in the questionnaire that they are cooperating with any of the surveyed digital financial service providers. The vector $M.STRUCTURE_p$ contains a set of explanatory variables describing the structure of the banking market in ZIP-code area p. These include branch density based on surface area ($B.DENSITY.AREA_p$) and population ($B.DENSITY.POP_p$) as well as the average functional lending distance ($FUNC.DIST_p$) of all branches in the respective area. $BANK.REL_i$ subsumes several regressors for the type and strength of the conventional bank relationships of firm i. These include a dummy variable for the main bank type that takes on the value 1 if the main bank is a local lender ($MB.LOCAL_i$), the length of the relationship with the main bank ($REL.LENGTH_i$), the loan officer turnover over the duration of said relationship ($LO.TURNOVER_i$), and a measure for the overall number of banking relationships

[20] The sample size is furthermore well above the average of similar publications in small business and family-firm research (Pielsticker & Hiebl, 2020). It is further large enough to ensure that the maximum margin of error for the estimate of proportion is less than 0.05 given a confidence level of 95 percent.

($CONCENTRATION_i$). It further includes a dummy variable indicating whether the firm has been affected by a bank branch closure in the past five years ($CLOSURE_i$).

The vector $OWNER_i$ contains a set of owner-level control variables, including owner age ($O.AGE_i$) and gender ($GENDER.F_i$), a dummy variable indicating whether the firm's owner-manager has experience with digital financial service providers as a private consumer ($EXP.PRIVATE_i$), and their general attitude towards and trust in digital financial service providers ($DF.ATTITUDE_i$). Furthermore, $FIRM_i$ comprises several firm-level control variables like firm size regarding number of employees ($EMP.SIZE_i$) and annual turnover ($TO.SIZE_i$), a dummy variable indicating whether the respective firm is financially constraint ($FIN.CONSTRAINT_i$), and two dummy variables measuring the level of personal guarantees ($GUARANTEES_i$) and collateral ($COLLATERAL_i$) the firm has to supply to obtain credit. Lastly, every model incorporates a set of industry dummies. Table 4.1 displays the definitions of all variables used in the upcoming analyses. Variance inflation factors (VIF) have been calculated for every regression model to ensure that the results are not affected by multicollinearity. No VIF values above 2 have been detected in any of the regression models displayed in this paper (see tables A.11 to A.13 in the appendix). All analyses presented in this paper have been computed using *R* version 4.2.2.

Since the dependent variable and some of the regressors originate from the same survey instrument, one needs to beware of potential common method bias affecting the results (Podsakoff et al., 2003). However, with the exception of $DF.ATTITUDE_i$, none of the variables reflect respondents' opinions but survey objective properties that do not leave leeway for interpretation.[21] In such a setup, the severity of the potential common method bias is naturally reduced (MacKenzie & Podsakoff, 2012). Nevertheless, I additionally applied Harman's Single-Factor Test (Harman, 1976) to ensure that there is indeed no common method variance biasing the results of my analyses. The test shows that there is no general factor emerging that accounts for the majority of the covariance (Schriesheim, 1979). On the contrary, the first unrotated factor accounts for only 13 percent of the overall variance.

[21] For example, the dependent variable $DF.ADOPTION_i$ reflects the objective fact of whether the firm is or is not cooperating with any of the surveyed digital financial service providers. There is no reason to believe that any form of social desirability bias may distort the honesty of respondents' disclosures regarding their bank relations.

TABLE 4.1
Variable definitions

Variable	Defintion
DF.ADOPTION	Dummy variable for digital finance adoption; 1 if firm is or has been cooperating with any DFSP and 0 otherwise.
DF.BANK	Dummy variable taking on the value of 1 if firm is or has been cooperating with an online-only bank and 0 otherwise.
DF.ALT	Dummy variable taking on the value of 1 if firm is or has been utilizing alternative lending (crowdfunding, P2P lending) and 0 otherwise.
DF.PF	Dummy variable taking on the value of 1 if firm is or has been active on a credit comparison or brokerage platform and 0 otherwise.
MMB.USED	Dummy variable taking on the value of 1 if firm is cooperating with a large, multi-market, conventional bank and 0 otherwise.
B.DENSITY.AREA	Branch density per square km of ZIP-code area.
B.DENSITY.POP	Branch density per population (1,000 inhabitants) of ZIP-code area.
FUNC.DIST	Functional distance measure according to Alessandrini et al. (2009). $$FUNC.DIST_p = \frac{\sum_{b=1}^{B_p}(Branches_b \times ln(1 + Dist_{pz_b})}{\sum_{b=1}^{B_p} Branches_b} \quad (4.2)$$
CLOSURE	Dummy variable indicating if firm has been affected by the closure of a bank branch in the past 5 years; 1 if firm has been affected by branch closure and 0 otherwise.
REL.LENGTH	Duration of longest lasting relationship with a bank. Measured on 4-step ordinal scale: "up to 2 years", "3 to 5 years", "6 to 10 years", and "more than 10 years".
REL.LONG	Dummy variable taking on the value of 1 if longest bank relationship is above sample mean and 0 otherwise.
LO.TURNOVER	Dummy variable indicating if firm has experienced loan officer turnover in its bank relationships; 1 if firm has experienced more than one change in loan officer per 10 years of lending relationship and 0 otherwise.
CONCENTRATION	Log of number of concurrent bank relationships maintained by firm. Measure according to Hernández-Cánovas and Martínez-Solano (2010).
MB.LOCAL	Dummy variable indicating if main bank is local lender; 1 if lender is local institution and 0 otherwise.
COLLATERAL	On a scale from 1 (totally disagree) to 5 (totally agree) manager indicates opinion about following statement: "Banks grant credit only on the basis of collateral."; dummy coded variable taking on the value of 1 if response exceeds sample median and 0 otherwise. Measure according to Hernández-Cánovas and Martínez-Solano (2010).

Variable definitions (cont.)

Variable	Defintion
GUARANTEES	On a scale from 1 (totally disagree) to 5 (totally agree) manager indicates opinion about following statement: "Banks grant credit only on the basis of personal guarantees."; dummy coded variable taking on the value of 1 if response exceeds sample median and 0 otherwise. Measure according to Hernández-Cánovas and Martínez-Solano (2010).
TRUST	On a scale from 1 (totally disagree) to 5 (totally agree) manager indicates opinion about following statement: "Trust in the firm's management plays a large role in banks' decisions to grant credit."; dummy coded variable taking on the value of 1 if response exceeds sample median and 0 otherwise. Measure according to Hernández-Cánovas and Martínez-Solano (2010).
EXP.PRIVATE	Dummy variable taking on the value of 1 if owner has private experience in cooperation with any DFSP and 0 otherwise.
DF.ATTITUDE	Average score of manager's opinion of the following three statements, each measured on a scale from 1 (totally disagree) to 5 (totally agree): 1) "DFSPs have appropriate safeguarding measures in place to ensure the security of my private information and data." 2) "DSFPs act with trust and honesty in dealing with their customers." 3) "DSFPs are controlled by the authorities at least as strictly as traditional credit institutions." Measure adapted from Duane, O'Reilly, and Andreev (2014).
DF.SCEPTIC	Dummy variable taking on the value of 1 if respondent's score of $DF.ATTITUDE$ is below the sample median and 0 otherwise.
O.AGE	Age of firm owner-manager in years.
GENDER.F	Dummy variable taking on the value of 1 if firm owner-manager is female and 0 otherwise.
FIN.CONSTRAINT	Dummy variable taking on the value of 1 if the respondent answers yes to the question "In the past 5 years, would your firm have wished a larger amount of loans at the prevailing interest rate agreed with the bank?", and yes to at least one of the following two questions: "In the past 5 years, did your firm demand more credit than it was able to obtain?" or "In the past 5 years, would you have been willing to pay a higher interest rate in order to obtain more credit?" and 0 otherwise. Measure according to Bartoli et al. (2013).
EMP.SIZE	Ordinal measure indicating firm's number of employees grouped according to the German Federal Statistical Office.
TO.SIZE	Ordinal measure indicating firm's annual turnover grouped according to the German Federal Statistical Office.

4.4.3 Sample demographics

Table 4.2 provides the descriptive statistics of the sample variables. It shows that almost half of the surveyed firms have already cooperated with some kind of digital financial service provider, with online-only banks (40 percent) being the most prominent. However, the vast majority (90 percent) of firms in the sample still maintain relationships with local lenders and thus act in accordance with the conventional paradigm. The fact that the responding firms only cooperate with 1.86 banks on average and are maintaining the lending relationship with their main bank for more than 10 years further indicates that the firms in the sample, while open to digital lenders, still seem to value traditional relationship banking. This is underlined by the high importance which is attributed to trust in the firm-bank relationship (median value of 4 on the respective 5-point scale). However, more than 30 percent of the firms have been affected by the closure of a local bank branch in the past 5 years and 69 percent have experienced more than one change in their responsible loan officer per 10 years of their lending relationship. The average branch density is 2.16 branches per square kilometer of ZIP-code area. However, the distribution of branches is severely skewed resulting in 86 percent of the sample firms having only 1 or less local branches in their vicinity. In contrast, firms located in one of Germany's financial centers are served by up to 76.5 branches. Based on population, the average branch density is 0.74 per thousand inhabitants with a median value of only 0.33. The measure for functional distance exhibits similar amounts of spread. Consequently, the sample covers local banking markets with various levels of concentration and development. Thus, the explanatory variables should show sufficient variation for the upcoming regression analyses.

Furthermore, the descriptive analysis shows that the sample is mostly made up of micro firms with less than 10 employees and an annual turnover of around 250,000 euro. Since informational opacity has been found to be inversely correlated with firm size (Petersen & Rajan, 2002), the conventional paradigm conjectures that such firms should particularly benefit from relationship banking with local lenders. The sample is thus well suited to challenge these theoretical implications in light of the banking sector's structural changes. Regarding the characteristics of the firms' owners, statistics show they are rather old (median age is 53 years) and predominantly male (78 percent). Notably, private cooperation with digital financial service providers among owners (35 percent) is less prevalent than business cooperation. This coincides with a substantial level of scepticism regarding the trustworthiness, security, and governance of digital financial service providers – for all three subcategories more than 50 percent of firms score 3 or lower on

TABLE 4.2
Summary statistics

Variable	N	Mean	St. Dev.	Min	Median	Max
DF.ADOPTION	393	0.47	0.50	0.00	0.00	1.00
DF.BANK	393	0.40	0.49	0.00	0.00	1.00
DF.ALT	393	0.11	0.31	0.00	0.00	1.00
DF.PF	393	0.25	0.43	0.00	0.00	1.00
MMB.USED	461	0.32	0.47	0.00	0.00	1.00
B.DENSITY.AREA	497	2.16	8.75	0.00	0.12	76.51
B.DENSITY.POP	497	0.74	2.41	0.00	0.33	43.80
FUNC.DIST	472	563.97	593.84	0.00	339.50	4,644.67
CLOSURE	461	0.31	0.46	0.00	0.00	1.00
REL.LENGTH	455	3.37	1.18	0.00	4.00	4.00
LO.TURNOVER	452	0.69	0.46	0.00	1.00	1.00
CONCENTRATION	458	1.01	0.29	0.00	1.10	1.79
MB.LOCAL	461	0.90	0.30	0.00	1.00	1.00
COLLATERAL	401	4.05	1.08	1.00	4.00	5.00
GUARANTEES	405	3.93	1.15	1.00	4.00	5.00
TRUST	403	3.93	1.11	1.00	4.00	5.00
EXP.PRIVATE	404	0.35	0.48	0.00	0.00	1.00
DF.ATTITUDE	382	3.17	0.77	1.00	3.00	5.00
DF.SCEPTIC	382	0.55	0.50	0.00	1.00	1.00
O.AGE	373	51.54	10.51	27.00	53.00	78.00
GENDER.F	396	0.22	0.42	0.00	0.00	1.00
FIN.CONSTRAINT	407	0.12	0.32	0.00	0.00	1.00
EMP.SIZE	402	2.20	1.27	1.00	2.00	5.00
TO.SIZE	388	3.92	1.38	1.00	4.00	6.00

the respective 5-point scale. This indicates that the decision to cooperate with digital financial service providers is likely not intrinsically motivated but driven by external pressure such as the supply-side disruption of traditional lending relationships and a general difficulty to obtain debt financing for opaque small businesses. Yet, only 12 percent of firms qualify as being substantially credit constraint by the standards of the measure introduced by Bartoli et al. (2013).

Table 4.3 displays the correlations between the variables included in the regression models. It shows a negative and significant correlation between digital finance adoption and branch density based on both surface area and population. Furthermore, branch closure, loan officer turnover, and concentration are significantly positively correlated with digital finance adoption while relationship length exhibits a significant negative correlation. Therefore, the correlation analysis substantiates my conjecture that banking sector structure in the form of geographical and relational distance is linked to the digital finance adoption patterns of small businesses. Additionally, the correlation matrix shows that there are no worryingly high correlations among any of the explanatory variables included in the same regression model.

TABLE 4.3
Correlation matrix

	DF.ADOPTION	DF.BANK	DF.ALT	DF.PF	MMB.USED	B.DENSITY.AREA	B.DENSITY.POP	FUNC.DIST	CLOSURE	REL.LENGTH	LO.TURNOVER
DF.ADOPTION	1.00										
DF.BANK	0.86***	1.00									
DF.ALT	0.37***	0.25***	1.00								
DF.PF	0.61***	0.40***	0.30***	1.00							
MMB.USED	0.18***	0.20***	0.03	0.03	1.00						
B.DENSITY.AREA	−0.16**	−0.13**	−0.05	−0.10*	−0.06	1.00					
B.DENSITY.POP	−0.12*	−0.10*	−0.04	−0.08	−0.06	0.78***	1.00				
FUNC.DIST	0.04	0.03	−0.04	−0.05	0.04	−0.05	−0.04	1.00			
CLOSURE	0.16**	0.14**	0.06	0.12*	0.16***	−0.09	−0.07	−0.05	1.00		
REL.LENGTH	−0.23***	−0.19***	−0.24***	−0.21***	−0.17***	0.07	0.06	0.00	−0.06	1.00	
LO.TURNOVER	0.14**	0.14**	0.08	0.12*	0.07	−0.23***	−0.17***	−0.05	0.11*	−0.08	1.00
CONCENTRATION	0.19***	0.19***	0.05	0.10*	0.45***	−0.13**	−0.10*	0.04	0.25***	0.04	0.15**
MB.LOCAL	−0.20***	−0.24***	−0.08	−0.04	−0.44***	0.05	0.06	−0.08	−0.10*	0.27***	0.07
COLLATERAL	0.06	0.04	0.02	0.02	0.07	−0.01	0.00	−0.12*	0.11*	0.01	0.13*
GUARANTEES	0.17***	0.17***	0.06	0.06	0.09	−0.10*	−0.05	0.01	0.05	−0.05	0.14**
TRUST	−0.07	−0.09	−0.09	−0.03	−0.17***	0.09	0.08	−0.06	−0.13*	0.17***	−0.04
EXP.PRIVATE	0.35***	0.36***	0.16**	0.20***	0.19***	0.05	0.07	−0.04	0.07	−0.19***	0.01
DF.ATTITUDE	0.24***	0.26***	0.17***	0.20***	0.09	−0.16**	−0.11*	−0.00	0.06	−0.21***	0.08
O.AGE	−0.26***	−0.22***	−0.27***	−0.23***	−0.11*	0.14**	0.13*	0.04	−0.16**	0.37***	−0.05
GENDER.F	−0.10	−0.10*	−0.01	−0.05	−0.10*	0.07	0.12*	−0.03	0.03	0.05	−0.06
FIN.CONSTRAINT	0.10*	0.11*	0.15**	0.11*	−0.02	−0.05	−0.04	−0.02	0.03	−0.10	0.02
EMP.SIZE	−0.04	−0.04	−0.04	−0.08	0.25***	−0.07	−0.06	−0.02	0.12*	0.11*	0.07

continued	CONCENTRATION	MB.LOCAL	COLLATERAL	GUARANTEES	TRUST	EXP.PRIVATE	DF.ATTITUDE	O.AGE	GENDER.F	FIN.CONSTRAINT	EMP.SIZE
CONCENTRATION	1.00										
MB.LOCAL	0.07	1.00									
COLLATERAL	0.11*	0.01	1.00								
GUARANTEES	0.09	−0.02	0.61***	1.00							
TRUST	−0.11*	0.14**	0.10*	0.03	1.00						
EXP.PRIVATE	0.13*	−0.19***	0.02	0.01	−0.11*	1.00					
DF.ATTITUDE	0.07	−0.16**	0.06	0.00	0.03	0.35***	1.00				
O.AGE	−0.07	0.15**	0.04	−0.00	0.25***	−0.27***	−0.17**	1.00			
GENDER.F	−0.08	0.10*	0.01	−0.06	0.14**	−0.08	−0.04	0.06	1.00		
FIN.CONSTRAINT	0.05	0.03	0.12*	0.15**	−0.01	−0.00	0.01	−0.09	−0.07	1.00	
EMP.SIZE	0.26***	−0.01	0.07	−0.01	0.07	0.01	0.08	0.01	0.04	0.00	1.00

*, **, *** indicates significance at the 10%, 5% and 1% level, respectively.

4.5 Results

Table 4.4 presents the main results of the logit regressions. Multiple model specifications are shown to corroborate the robustness of the findings. To ease interpretation of effect sizes, all estimates are presented in the form of odds ratios, which are the exponentiated logit coefficients. An odds ratio greater/less than one for any explanatory variable indicates that an increase in said variable increases/decreases the likelihood of the dependent variable taking on the value of one. In this case, an odds ratio above one for any predictor implies that an increase in said predictor increases the likelihood of a small firm cooperating with a digital financial service provider. Robust z-statistics for testing equality to one are presented in parenthesis underneath each estimate.

4.5.1 Main regression results

The results of the main regressions show that firms who have been affected by the closing of a local bank branch in the past five years are more likely to be cooperating with digital financial service providers. The coefficient for $CLOSURE$ is positive and significant across all model specifications with odds ratios between 1.88 and 2.03. Thus, firms that have been affected by a branch closing have almost twice the odds of cooperating with a digital financial service provider. This shows that supply-side disruptions in lending relationships are indeed positively related to digital finance adoption rates of small businesses. H1b is thus confirmed.

Furthermore, the regression results also confirm H1a, showing that strong, i.e., prolonged, exclusive, and personal ties to local lenders decrease the likelihood of small businesses cooperating with digital financial service providers. Loan officer turnover is increasing the likelihood of digital finance adoption, although the coefficient is only significant in model specifications (1), (3), and (4). Significant odds ratios range around 1.8. Furthermore, relationship length is significantly negatively related to digital finance adoption across all model specifications with an odds ratio around 0.75. Since $REL.LENGTH$ is measured on an ordinal scale, this implies that a 1-step ordinal increase in relationship length diminishes the odds of cooperating with a digital financial service provider by approximately 25 percent. Additionally, concentration is significantly positively related to digital finance adoption across all model specifications, indicating that firms that have less exclusive bank relationships, i.e., cooperate with multiple lenders,

are more likely to also cooperate with digital financial service providers. Overall, the findings for hypotheses 1a and 1b corroborate the conjecture that relational distance is affecting small businesses' lender choices. While the results regarding H1a show that, in accordance with the conventional paradigm, small businesses seem to value close lending relationships, the findings for H1b indicate that they react strongly to disruptions in those ties.

Regarding the impact of local branch density on digital finance adoption, I find a negative and significant association for both surface area-based (2) and population-based (3) branch density. However, the latter is only significant at the 10 percent level. Looking at the odds ratios indicates that an additional physical branch per square kilometer of ZIP-code surface area or per 1,000 inhabitants decreases the odds of cooperating with a digital financial service provider by 11 percent and 37 percent, respectively. This implies that small businesses are more likely to cooperate with digital financial service providers if they are located in areas with a low supply of local bank branches. H2 is thus confirmed, showing that geographical distance is impacting small firms' likelihood to seek digital finance. Furthermore, model specification (4) shows that firms in areas with a greater average functional lending distance are more likely to cooperate with digital financial service providers.[22] This confirms H3 and shows that apart from relational and geographical distance, functional distance is impacting small firms' digital finance adoption probabilities as well.

Concerning the owner-level control variables, table 4.4 shows that owner-managers with private experience regarding the cooperation with digital financial service providers are significantly more likely to also seek commercial digital finance. An odds ratio above 3 for all model specifications shows that the effect is also economically substantial. Consistently, owner-managers with a more positive attitude towards the trustworthiness, security, and governance of digital financial service providers are also significantly more likely to have their businesses cooperate with them. The respective estimator of $DF.ATTITUDE$ is positive and significant at the 5 percent level for all model specifications. Concerning the owner's personal characteristics, I find slight indication that younger owners might be more likely to engage in digital finance. However, while the estimators of all model specifications point towards a negative association between owner age and the likelihood of digital finance adoption, the respective coefficient is only significant in one

[22] Note that due to the complexity of the functional distance measure, the interpretation of the respective odds ratio of 1.2 is not straightforward. A one-unit increase in the log average functional distance within a ZIP-code area is associated with a 20 percent increase in the odds of cooperating with a digital financial service provider. The functional distance measure increases if the branches in a ZIP-code area are located geographically far from their bank's headquarters. For the headquarters itself, the functional distance measure equals 0.

of the five model specifications. Furthermore, owner gender does not seem to impact digital finance adoption probabilities.

With regard to the firm-level control variables, the findings indicate that contrary to expectations from the conventional paradigm, smaller firms are more likely to cooperate with digital financial service providers. Across all model specifications, estimators for $EMP.SIZE$ show a negative association between firm size and digital finance adoption probability which is significant at the 5 percent level. However, it has to be kept in mind that the sample is restricted to small firms with less than 50 employees while the size implications of the conventional paradigm originate from research that includes also medium-sized firms (Berger et al., 2014) or compares the lending relationships of small firms to those of large corporations (Cotugno et al., 2013). Furthermore, financial constraints seem to induce digital finance adoption. The odds ratios for FIN.CONSTRAINT indicate that being financially constraint doubles the odds of cooperating with digital financial service providers. However, the respective estimators are only significant at the 10 percent level. Furthermore, the amount of collateral a firm has to pledge in order to obtain bank financing does not seem to affect digital finance adoption probabilities. Consequently, I find only limited evidence that difficulties in obtaining credit from conventional lenders is causing small businesses to seek digital alternatives. Controlling for potential industry differences among small firms' digital finance adoption practices did also not yield significant effects in any of the model specifications.

4.5.2 Robustness tests

The regression models in table 4.5 are estimated to test the robustness of the main regression results. Specification (1) replicates model (5) from table 4.4 using a probit estimation instead of a logit one. The results of both estimations are virtually identical. I still find evidence in favour of all hypotheses, showing that the main results are robust to changes in the estimation method.

In model specifications (2) to (5), I interchange some of the explanatory variables. Specification (2) uses the integer number of banks a small firm is cooperating with ($NB.BANKS$) instead of the $CONCENTRATION$ variable. The results corroborate the finding that the probability of cooperating with digital financial service providers is higher for firms that maintain lending relationships with multiple lenders, i.e., whose lending relationships are less exclusive. Instead of collateral, specification (3) uses the amount of personal guarantees a small firm has to provide

TABLE 4.4
Main regression results

	Dependent variable:				
	DF.ADOPTION				
	(1)	(2)	(3)	(4)	(5)
B.DENSITY.AREA		0.891**			0.875**
		(0.058)			(0.060)
B.DENSITY.POP			0.635*		
			(0.245)		
log(1 + FUNC.DIST)				1.188*	1.234**
				(0.102)	(0.103)
CLOSURE	1.877**	1.956**	1.938**	1.949**	2.028**
	(0.284)	(0.287)	(0.286)	(0.294)	(0.298)
REL.LENGTH	0.757**	0.759**	0.761**	0.771*	0.782*
	(0.136)	(0.136)	(0.135)	(0.137)	(0.137)
LO.TURNOVER	1.788**	1.588	1.657*	1.882**	1.614
	(0.282)	(0.290)	(0.289)	(0.287)	(0.294)
CONCENTRATION	3.622**	3.061**	3.151**	3.277**	2.883*
	(0.529)	(0.534)	(0.534)	(0.545)	(0.549)
MB.LOCAL	0.535	0.660	0.668	0.677	0.736
	(0.603)	(0.613)	(0.616)	(0.628)	(0.625)
COLLATERAL	1.099	1.101	1.102	1.131	1.141
	(0.121)	(0.121)	(0.121)	(0.124)	(0.124)
TRUST	1.143	1.193	1.177	1.151	1.201
	(0.122)	(0.123)	(0.123)	(0.124)	(0.125)
O.AGE	0.978	0.980	0.980	0.976*	0.978
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
GENDER.F	0.886	0.877	0.920	0.855	0.850
	(0.320)	(0.326)	(0.326)	(0.325)	(0.333)
EXP.PRIVATE	3.194***	3.517***	3.437***	3.113***	3.538***
	(0.287)	(0.295)	(0.293)	(0.290)	(0.299)
DF.ATTITUDE	1.699***	1.605**	1.594**	1.678***	1.560**
	(0.192)	(0.195)	(0.194)	(0.196)	(0.198)
EMP.SIZE	0.781**	0.777**	0.779**	0.781**	0.779**
	(0.107)	(0.108)	(0.108)	(0.111)	(0.112)
FIN.CONSTRAINT	2.129*	2.157*	2.104*	1.968*	2.025*
	(0.404)	(0.410)	(0.407)	(0.411)	(0.420)
Constant	0.144	0.138	0.162	0.044**	0.037**
	(1.325)	(1.332)	(1.328)	(1.478)	(1.489)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Nagelkerke R^2	0.328	0.351	0.346	0.310	0.339
LR-test	94.8***	102.1***	100.5***	84.2***	93.1***
(df)	(16)	(17)	(17)	(17)	(18)
Observations	335	334	334	318	318

*, **, *** indicates significance at the 10%, 5% and 1% level, respectively.
Estimates of the logit specifications are presented as odds ratios.
Standard errors of z-statistics are presented in parentheses.

in order to obtain credit. The results show that businesses that face higher personal guarantee requirements are significantly more likely to cooperate with digital financial service providers. This corroborates the notion that difficulties in obtaining credit from conventional lenders might prompt small firms to seek digital finance. Specification (4) includes a dummy variable to identify owner-managers that expressed the highest levels of scepticism regarding the trustworthiness, security, and governance of digital financial service providers. In line with the main results, it shows that sceptic owner-managers are less likely to seek digital finance for their business. Lastly, specification (5) uses annual turnover as a measure for firm size instead of number of employees. The results are consistent with the main findings indicating that smaller firms are more likely to cooperate with digital financial service providers.

In specifications (6) to (8), the dependent variable is split up into the different kinds of digital financing options that have been included in the survey. Specification (6) is restricted to cooperation with online-only banks. The main findings in favour of H1b and H2 are corroborated. Local branch closures and loan officer turnover as well as a lower physical branch density are all significantly increasing small firms' likelihood to cooperate with an online-only bank. However, there is no evidence that functional distance and length or concentration of lending relationships with conventional banks are affecting cooperation probabilities with online-only banks. The estimators for $REL.LENGTH$, $CONCENTRATION$, and $FUNC.DIST$ are statistically insignificant even though their signs are in accordance with H1a and H3. The findings for the owner- and firm-level control variables are identical to those of the unrestricted models in table 4.4. Specification (7) restricts the dependent variable to alternative sources of funding like P2P lending or crowdfunding while specification (8) focuses on credit comparison and brokerage platforms. While the mathematical signs of all estimators are in line with the expectations from hypotheses 1a, 1b, 2, and 3, they mostly lack statistical significance. In contrast to the main analyses, I do find strong evidence for a significant age effect. Younger owner-managers are significantly more likely to both seek alternative means of digital funding and make use of comparison or brokerage platforms.

4.5.3 Cooperation with conventional multi-market banks

Both the market for small business lending and the bank branch network in Germany are dominated by small local banks (Deutsche Bundesbank, 2020). Consequently, the consolidation in the German banking sector is to the most part driven by these local single-market lenders (Deutsche

TABLE 4.5
Regression results: robustness tests

	Dependent variable:							
	DF.ADOPTION					DF.BANK	DF.ALT	DF.PF
	(1) Probit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit	(7) Logit	(8) Logit
B.DENSITY.AREA	−0.133**	0.873**	0.876**	0.871**	0.882**	0.891*	0.925	0.952
	(0.060)	(0.061)	(0.061)	(0.059)	(0.061)	(0.063)	(0.068)	(0.092)
log(1 + FUNC.DIST)	0.210**	1.231**	1.235**	1.240**	1.223*	1.143	1.041	1.020
	(0.103)	(0.104)	(0.103)	(0.103)	(0.104)	(0.105)	(0.108)	(0.165)
CLOSURE	0.707**	1.991**	2.043**	2.025**	2.002**	1.920**	1.503	0.703
	(0.298)	(0.299)	(0.300)	(0.297)	(0.301)	(0.301)	(0.303)	(0.481)
REL.LENGTH	−0.246*	0.783*	0.784*	0.780*	0.830	0.898	0.862	0.804
	(0.137)	(0.137)	(0.139)	(0.136)	(0.140)	(0.135)	(0.133)	(0.170)
LO.TURNOVER	0.479	1.611	1.586	1.616*	1.625	1.882**	1.757*	1.839
	(0.294)	(0.294)	(0.297)	(0.292)	(0.297)	(0.309)	(0.324)	(0.508)
CONCENTRATION	1.059*		2.935*	2.785*	3.180**	2.180	1.769	2.275
	(0.549)		(0.553)	(0.543)	(0.562)	(0.550)	(0.552)	(0.817)
NB.BANKS		1.546**						
		(0.198)						
MB.LOCAL	−0.306	0.738	0.812	0.715	0.608	0.428	1.775	0.969
	(0.625)	(0.623)	(0.638)	(0.627)	(0.627)	(0.616)	(0.650)	(0.845)
COLLATERAL	0.132	1.138		1.140	1.106	1.065	1.023	1.364
	(0.124)	(0.124)		(0.123)	(0.125)	(0.130)	(0.134)	(0.225)
GUARANTEES			1.400***					
			(0.122)					
TRUST	0.184	1.207	1.208	1.223	1.205	1.137	1.077	0.932
	(0.125)	(0.125)	(0.126)	(0.124)	(0.127)	(0.127)	(0.130)	(0.178)
O.AGE	−0.022	0.979	0.976*	0.978	0.980	0.989	0.967**	0.930***
	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.015)	(0.015)	(0.022)

Regression results: robustness tests (cont.)

	Dependent variable:							
	DF.ADOPTION					DF.BANK	DF.ALT	DF.PF
	(1) Probit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit	(7) Logit	(8) Logit
GENDER.F	−0.163	0.859	0.909	0.847	0.810	0.798	0.991	0.957
	(0.333)	(0.333)	(0.337)	(0.330)	(0.338)	(0.347)	(0.356)	(0.559)
EXP.PRIVATE	1.264***	3.515***	3.670***	3.625***	3.600***	3.311***	1.597	1.188
	(0.299)	(0.300)	(0.305)	(0.306)	(0.301)	(0.293)	(0.305)	(0.441)
DF.ATTITUDE	0.445**	1.562**	1.576**		1.511**	1.629**	1.475*	1.438
	(0.198)	(0.199)	(0.199)		(0.201)	(0.202)	(0.204)	(0.293)
DF.SCEPTIC				0.653*				
				(0.207)				
EMP.SIZE	−0.249**	0.771**	0.776**	0.791**		0.793**	0.728**	0.710*
	(0.112)	(0.113)	(0.114)	(0.112)		(0.113)	(0.124)	(0.181)
TO.SIZE					0.753**			
					(0.110)			
FIN.CONSTRAINT	0.706*	2.030*	1.774	2.134*	2.158*	2.855**	1.742	2.231
	(0.420)	(0.421)	(0.425)	(0.421)	(0.428)	(0.413)	(0.396)	(0.541)
Constant	−3.286**	0.048**	0.016***	0.179	0.078*	0.034**	0.182	0.105
	(1.489)	(1.474)	(1.544)	(1.324)	(1.521)	(1.515)	(1.533)	(2.457)
Ind. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nagelkerke R^2	0.340	0.342	0.362	0.329	0.327	0.337	0.195	0.332
LR-test	93.6***	94.3***	100.9***	90.1***	86.9***	90.9***	45.6***	57.7***
(df)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Observations	318	318	319	318	309	318	318	318

*, **, *** indicates significance at the 10%, 5% and 1% level, respectively.
For model (1) estimates are reported as probit coefficients; for the logit models (2) – (8) estimates are presented as odds ratios.
Standard errors of z-statistics are presented in parentheses.

Bundesbank, 2022). This prompts the question of whether the resulting increases in relational, geographical, and functional distance affect not only cooperation patterns with digital lenders but also those with large conventional banks. Therefore, I replicated the analysis of table 4.4 using the cooperation with a large, multi-market conventional bank as the dependent variable ($MMB.USED$). The results are presented in table 4.6. I find no significant impact of either geographical or functional distance on the probability to cooperate with a large, multi-market lender. There is also no significant relation between local branch closures or loan officer turnover and multi-market lender cooperation. I do, however, find that length and concentration of the main bank relationship are significantly affecting multi-market bank cooperation probabilities. Small firms that have a shorter and less exclusive relationship with their main bank are significantly more likely to cooperate with a large, multi-market financial institution. The respective odds ratios further show that this effect is also economically substantial.

This indicates that, while small businesses still seem to value relationship banking and thus necessarily appreciate lender proximity, there seems to be a tipping point at which it might no longer be of relevance in small firms' lender choices. If the lending relationship to a local bank is disrupted by the closure of a local branch or a change in the loan officer, small firms do not seem to automatically choose the second closest lender available but base their lender choice on other criteria (e.g., cost or collateral) which prompt them to cooperate with digital financial service providers. The variables measuring geographical and functional distance indicate the same effect. In areas with a low supply of physical bank branches or a large average functional lender distance, small firms do not automatically choose the lending option with the shortest distance but tend to look for funding outside the conventional banking sector.

TABLE 4.6
Regression results: multi-market bank cooperation

	Dependent variable:					
	MMB.USED					
	(1)	(2)	(3)	(4)	(5)	(6)
B.DENSITY.AREA		1.003			1.003	0.978
		(0.033)			(0.031)	(0.029)
B.DENSITY.POP			0.943			
			(0.221)			
log(1 + FUNC.DIST)				0.984	0.984	1.015
				(0.111)	(0.112)	(0.102)
CLOSURE	1.011	1.020	1.021	1.001	1.000	1.492
	(0.307)	(0.308)	(0.307)	(0.317)	(0.317)	(0.286)
REL.LENGTH	0.619***	0.618***	0.620***	0.651***	0.650***	0.740**
	(0.141)	(0.141)	(0.140)	(0.146)	(0.146)	(0.123)
LO.TURNOVER	1.020	1.039	1.026	0.968	0.972	1.115
	(0.320)	(0.325)	(0.323)	(0.327)	(0.331)	(0.299)
CONCENTRATION	107.513***	105.936***	102.855***	94.387***	95.437***	
	(0.717)	(0.725)	(0.719)	(0.729)	(0.738)	
COLLATERAL	1.069	1.066	1.067	1.073	1.073	1.115
	(0.137)	(0.137)	(0.137)	(0.144)	(0.144)	(0.132)
TRUST	0.804	0.809	0.811	0.764*	0.764*	0.726***
	(0.136)	(0.137)	(0.136)	(0.138)	(0.138)	(0.123)
O.AGE	1.003	1.003	1.004	1.009	1.008	1.010
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.014)
GENDER.F	0.604	0.606	0.609	0.631	0.632	0.598
	(0.387)	(0.386)	(0.387)	(0.394)	(0.394)	(0.349)
EXP.PRIVATE	1.775*	1.751*	1.767*	1.799*	1.795*	2.036**
	(0.321)	(0.323)	(0.322)	(0.328)	(0.329)	(0.300)
DF.ATTITUDE	1.022	1.028	1.020	0.935	0.936	0.895
	(0.198)	(0.198)	(0.199)	(0.204)	(0.204)	(0.190)
EMP.SIZE	1.341**	1.339**	1.338**	1.350**	1.350**	1.603***
	(0.115)	(0.115)	(0.115)	(0.119)	(0.119)	(0.109)
FIN.CONSTRAINT	0.428*	0.431*	0.432*	0.510	0.510	0.705
	(0.484)	(0.483)	(0.482)	(0.487)	(0.487)	(0.435)
Constant	0.011***	0.011***	0.011***	0.012***	0.012***	0.444
	(1.472)	(1.475)	(1.476)	(1.614)	(1.617)	(1.323)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Nagelkerke R^2	0.423	0.419	0.419	0.388	0.388	0.210
LR-test	120.8***	118.9***	119.0***	101.2***	101.2***	51.4***
(df)	(15)	(16)	(16)	(16)	(17)	(16)
Observations	336	335	335	319	319	321

*, **, *** indicates significance at the 10%, 5% and 1% level, respectively.
Estimates of the logit specifications are presented as odds ratios.
Standard errors of z-statistics are presented in parentheses.

4.6 Discussion

To the best of my knowledge, the study at hand is the first to investigate the drivers of digital finance adoption by small firms both in general and in light of the ongoing structural changes in the conventional banking sector. My analyses yield two main conclusions about the lender choices of small businesses. First, I find that, as long as the structural environment of the banking sector allows it, small firms tend to act in accordance with the conventional paradigm, i.e., maintain tight relationships with nearby local lenders (Berger et al., 2014). The theoretical implications of the conventional paradigm thus seem to match small business owner-managers' practical preferences and actions. The second finding is that small firms react strongly to any supply-side disruptions of those ties and that the structure of the local banking market is therefore significantly affecting their lender choices. Increases in relational, geographical, and functional lending distance all raise the likelihood of seeking funding outside the conventional banking sector by cooperating with digital financial service providers.

In particular, I find that relationship strength is negatively associated with digital finance adoption. This finding can be interpreted in different ways. On one hand, it could indicate that small firms still value close and personal relationships to local lenders and thus seem to acknowledge the theoretical benefits of relationship banking for informationally opaque borrowers (Berger & Udell, 2002; Boot, 2000; Stein, 2002). On the other hand, it could imply that in very tight lending relationships, the amount of private information collected by the bank increases the switching costs for the firms to a degree that effectively locks them into the relationship (Angori et al., 2019; Ioannidou & Ongena, 2010; Sharpe, 1990). A third possible interpretation is that small business owner-managers are simply unaware of the impact that a regular critical review of their lending relationships has on the firm's prosperity and are thus clinging to local lenders out of pure convenience. I leave it up to future research that would need to combine survey data with loan contract data to unravel the causal link behind the uncovered association between firm-bank relationship strength and digital finance adoption. As far as my research goes, it can be said that even though the benefits of very tight relationships with local lenders are – at least regarding credit conditions – empirically disputed (Bellucci et al., 2019; Brick & Palia, 2007; Duqi et al., 2018; Hernández-Cánovas & Martínez-Solano, 2010), small business owner-managers still either deliberately or under compulsion tend to pursue them as long as the local banking sector structure allows for it.

Regarding geographical lender distance, the firms in my study are also acting in accordance with the expectations of the conventional paradigm. The fact that digital financial service providers become a more attractive option in areas with low physical branch supply indicates that small businesses still prefer short distance lending. In this regard, my research also corroborates findings from existing literature on small firms' bank choices which repeatedly found geographical proximity, i.e., branch location, to be an important selection criterion (Lam & Burton, 2005; Mitter, 2012; Trayler et al., 2000). Lastly, my empirical findings regarding the impact of functional distance on lender choices are in line with the theoretical implications of the conventional paradigm as well. Small firms are more likely to engage in digital finance in areas where conventional banks lend at larger functional distances.

By showing that relational, geographical, and functional distance are affecting small firms' lender choices, I expand conventional paradigm literature to include the subjective firm perspective. Existing work mainly takes on a macroeconomic perspective by empirically testing whether the paradigm's theoretical assumptions hold for broad samples of small business loan-contract data (Alessandrini et al., 2009; Bellucci et al., 2019; Degryse & Ongena, 2005; Kärnä & Stephan, 2022). Thereby, it disregards how the individual small business owner-manager actually perceives and evaluates their lending relationships and whether this subjective assessment makes them act in accordance with the conventional paradigm's implications. Furthermore, since I find no impact of geographical and functional distance on the cooperation patterns with conventional, multi-market banks, there seems to be a tipping point at which those two forms of distance lose significance in small firms' lender choices. Beyond some threshold of geographical and functional distance, small firms do not automatically opt for the closest lending option available but tend to broaden their financing portfolio by including alternative sources of funding that might offer superior financing conditions. Additionally, these findings show that research on small firms' external funding choices must incorporate funding alternatives outside the conventional banking sector. Research that simplifies small business credit financing to a dichotomous choice between small, local lenders and large, multi-market institutions (Berger et al., 2014; Jackowicz et al., 2021; Lam & Burton, 2005) thus lacks empirically important alternatives.

The second main finding of my research is that small firms react strongly to disruptions in their conventional lending relationships. Local branch closures and changes in the responsible loan officer are significantly increasing firms' likelihood of cooperating with digital financial service providers. In this regard, my findings are in line with scholarly work investigating the bank

switching decisions of small firms. Both Lam and Burton (2006) and F. Singh and Kaur (2015) find that frequent staff turnover or dissatisfaction with a newly assigned loan officer are inducing banking disloyalty and increase small firms' intention to switch banks. In addition, Garri (2019) finds that when a small firm's main bank closes its relevant local branch, the probability that the entire relationship with said bank terminates increases significantly. However, I find no impact of branch closures and loan officer turnover on the cooperation probabilities with multi-market, conventional banks. In line with prior research (Howorth et al., 2003), this implicates that small firms are taking these disruptions in their lending relationships as a cause to look for funding outside the conventional banking sector. They thereby act in accordance with recent scholarly work by Bonfim et al. (2021) who find that small enterprises who, following a closing of their local bank branch, hurriedly transfer to another local conventional bank receive inferior credit conditions.

In the emerging scientific debate whether fintech finance and traditional finance are complements or substitutes (Cole, Cumming, & Taylor, 2019; Flögel & Beckamp, 2020; Hodula, 2022; Murinde et al., 2022; Tang, 2019; Thakor, 2020), my results indicate the latter. Especially since a reduction in the offerings of local, single-market banks is not leading to higher usage of traditional, multi-market commercial banks but only to higher digital finance adoption rates. My results are thus in line with the findings of Hodula (2022), who claims that digital finance can act as a direct substitute for traditional bank credit. By providing evidence that fintech expansion leads to an increase in local branch closures, Yuan et al. (2023) further show that digital finance offerings might even crowd out conventional bank financing. While my research, due to its cross-sectional design, is unable to corroborate such a causal relation, it does nonetheless imply that for conventional and especially local banks to retain their dominance in the small business lending market, they must not push consolidation endeavors too far. Instead, they should well-consider every decision on a local branch closing, taking into account the severity of its effect on lending distance for the small business customers they want to retain.

Regarding the impact of owner-level control variables on digital finance adoption, I find that adoption probabilities are strongly associated with the owner-manager's perceived trustworthiness, security, and governance of digital financial service providers. This is in line with both findings from information systems research on small firms' general use of e-banking options (Yousafzai et al., 2003) and literature investigating the mobile banking (Zhou, 2011) and fintech (Belanche et al., 2019) adoption behavior of private consumers. Belanche et al. (2019) further

find that the impact of trust on mobile banking adoption is moderated by age. Consequently, I find some evidence that younger owner-managers are more likely to cooperate with digital financial service providers. This, too, is in line with research on consumer behavior that finds a negative relation between age and both the usage of fintech (S. Singh et al., 2020) and mobile banking services (Laukkanen, 2016). Contrary to existing literature (S. Chen et al., 2023), I do not find a significant relation between owner gender and digital finance adoption.

On firm level, my results show that smaller firms are more likely to seek fintech finance. Given that informational opacity is negatively related to firm size, these findings are in contrast to the expectations of the conventional paradigm (Berger et al., 2014). This could be due to the fact that my sample is restricted to small firms with less than 50 employees whereas significant variation in informational opacity might only be found in samples with more size heterogeneity. The inverse size effect in my sample is most likely driven by larger general difficulties to obtain bank financing for smaller firms (Beck, Demirguc-Kunt, & Maksimovic, 2008). In line with that, I find that firms which are credit constrained or face higher demands for personal guarantees are more likely to cooperate with digital financial service providers. My findings thus support those of de Roure, Pelizzon, and Thakor (2022), who report that digital financial service providers might try to increase their market share by "bottom fishing", i.e., catering to borrowers with higher default probabilities.

As with any empirical study, especially on a novel subject, there are some limitations that have to be considered when interpreting my results but which at the same time can offer interesting opportunities for future research. First, due to the cross-sectional research design, I cannot make claims about the direction or causality of the relationship between structural changes in the local banking market and small firm digital finance adoption. Panel data analysis, difference-in-difference, or other endogeneity-robust research designs need to be applied in order to test whether changes in the local market prompt small firms to cater to digital financial service providers or if, as Yuan et al. (2023) suggest, the exogenous expansion of fintech providers causes debranching of conventional lenders. Furthermore, my sample is restricted to Germany whose financial system is heavily bank-oriented (La Porta et al., 1997). Future research could conduct similar analyses in, for example, Anglo-Saxon countries where capital markets are more dominant and small business financing is thus already less reliant on conventional banks (Karmel, 2002). Lastly, since my research is based on conventional paradigm theory, it focuses on supply-side drivers of small firm digital finance adoption. While I do control for several potential owner- and

firm-level drivers, a more detailed investigation of the demand-side antecedents of digital finance usage by small firms is needed to paint a complete picture. Additionally, there is no scholarly work to date that investigates the outcome of lending relationships with digital financial service providers. Following research on small firm bank relationships (Angori et al., 2019; Fiordelisi et al., 2014; Hernández-Cánovas & Martínez-Solano, 2010), scholars could investigate the impact of digital finance adoption on the availability and terms of funding.

4.7 Conclusion

This study investigates how the structure of the local banking market is affecting small firms' decisions to cooperate with digital financial service providers like online-only banks, P2P lenders, or credit brokerage platforms. Drawing on conventional paradigm literature, I argue that digital finance adoption rates are affected by the relational, geographical, and functional distance at which credit is available in the local banking market. Given that lender proximity eases the collection and assessment of soft borrower information (Agarwal & Hauswald, 2010) and thus creates a competitive advantage in lending to opaque small businesses (Berger & Udell, 2002), digital financial service providers should be a more attractive option in areas where conventional banks are lending at larger distances.

Combining original survey data from 463 German small businesses and geolocation data of all bank branches in Germany, I find that increases in relational, geographical, and functional distances of conventional bank lending all increase the likelihood that small firms cooperate with digital financial service providers. In particular, my results show that firms with longer and more concentrated relationships to local banks are less likely to engage in digital finance, while firms that have experienced significant turnover in their responsible loan officer or have been affected by the closure of a local bank branch are more likely to seek digital finance. This shows that while small businesses still seem to value close and stable relationships with local lenders, they react strongly if those ties are disrupted. Regarding the structure of the local banking market, the analyses show higher probabilities of digital finance adoption in areas with a lower physical branch density and higher average distances between the bank's local information collecting branch and its decision-making center. I do, however, find no effect of branch closures, loan officer turnover and geographical or functional distance on the cooperation probabilities with large, multi-market conventional banks. My results thus implicate that digital finance and

traditional bank finance are substitutes rather than complements and that in order to retain their dominance in the small business lending market, local banks should well-consider the effect on lending distances when deciding on consolidation endeavors.

5 | Conclusion

5.1 Main results and contribution

"First, the most severe problem facing small organizations is raising capital." (Aldrich & Auster, 1986, p. 181). Extensive informational opacity often impedes small firms' ability to accumulate the financial resources needed for survival and growth (Beck & Demirguc-Kunt, 2006; Berger & Udell, 1995; Wagenvoort, 2003). In addition to their inherent constraints on internal financial capabilities, agency costs obstruct the accumulation of external capital (Kale & Arditi, 1998; Lefebvre, 2022). Unaffected by these "liabilities of smallness" (Aldrich & Auster, 1986), larger corporations are maintaining entire departments with specialized personnel to develop and execute their financing strategy. Contrary to that, many small business owners conduct the entire business administration on their own – often in addition to significant participation in the firm's operational processes. It is thus left up to academia to develop promising financial management strategies for small businesses and make them available to owners and managers. This dissertation aims to do just that. Partitioned into three independent essays, strategies to acquire internal, mezzanine, and external funding for micro and small enterprises with less than 50 employees are outlined and discussed.

Starting with internal financing, essay I investigates the drivers of the dissemination of working capital management (WCM) routines in small enterprises and their efficacy. Pertinent prior research usually focuses on the relation between reported working capital (WC) figures like the cash conversion cycle and corporate performance (Aktas et al., 2015; Baños-Caballero et al., 2012; Ebben & Johnson, 2011). This approach sheds no light on how these WC figures are achieved or managed and is therefore of little practical value to small business managers and advisors. Therefore, I draw on original survey data to explicitly investigate the routines small firms undertake to manage their working capital. I am thus responding to calls for research on the drivers and efficacy of control system implementation by small enterprises (Lavia López & Hiebl, 2015). Based on the argumentations of asset orchestration theory and the resource-based view framework, factor and cluster analysis are applied to identify four distinct types of small

businesses with regard to their working capital management approach. Thereupon, regression analysis is used to determine the drivers of this differentiation and their impact on firm liquidity and performance.

Rather than pure firm size, I find that financial education and skill of key personnel are driving WCM routine implementation rates among small enterprises. The resource-based view framework is thus only able to explain WCM routine implementation in small firms on an individual employee level. Consequently, it falls short to approximate human resource availability in small firms simply by the number of people employed. Furthermore, I find that the targeted use of WCM routines is significantly positively associated with liquidity and profitability, even in the smallest enterprises. For small business managers, my results show that through foresighted hiring and training, the working capital management of their business can be improved even under significant (human) resource constraints. Additionally, providing empirical evidence for the efficacy of WCM routine implementation in (very) small businesses is especially important since many small firm managers tend to underestimate the importance of business administration for the viability of their enterprise and focus too much of their attention on operational tasks (Padachi, 2012).

With essay II, we explore the potential of crowdfunding as an alternative source of funding for small enterprises. Based on set-theoretic analysis of qualitative interview data, we investigate (1) what factors influence the perceived success of crowdfunding campaigns in small businesses and (2) how these success factors interact with each other in forming successful campaign setups. We show that crowdfunding success is driven by product suitability, initiators' expertise, commitment, and motivation as well as the chosen communication and marketing strategy. Configurational analysis, however, reveals that it is the complex, equifinal, and sometimes asymmetrical interrelations between these factors that are ultimately responsible for campaign success. Prior research considering success factors in isolation (Huang et al., 2022; Koch & Siering, 2019; Mollick, 2014) can thus result in misleading conclusions. Our methodological approach allows us to unravel these interrelations and identify three distinct campaign setups sufficient for success. We thereby comply with calls for research to provide a more integrated view of the genesis of crowdfunding success (Hoegen et al., 2018).

Additionally, our research advances prior work on crowdfunding success factors by proposing a more differentiated and holistic framework of campaign success that also incorporates non-financial and contextual factors (Koch & Siering, 2019). Drawing on data collected directly

from campaign initiators instead of secondary platform data allows us to move beyond campaign configuration and project page design and uncover potential inter-platform variation (Bi et al., 2017; Frydrych et al., 2014; Mollick, 2014). We thus contribute to the scarce string of literature investigating how success in small business crowdfunding should be defined and measured (Shneor & Vik, 2020). By relating the results of the configurational analysis back to the sampled cases, our study provides small business owner-managers with practical guidelines on how they can conduct a successful crowdfunding campaign tailored to their firm's respective set of resources and capabilities. The practical applicability of our work should help to raise overall awareness of crowdfunding among small businesses, increase implementation and success rates, and alleviate their dependence on bank financing.

In essay III, I investigate how structural changes in the conventional banking sector, like mergers of small local institutions and the accompanying thinning of their branch network, affect small businesses' digital finance adoption choices. Conventional small business bank financing literature states that small local banks should have a competitive advantage in lending to small, informationally opaque businesses due to their superior ability to produce, assess, and monitor soft, proprietary borrower information (Berger et al., 2014, 2005; Udell, 2008). Drawing on original survey data from German small firms, I empirically challenge these theoretical conjectures in light of the changing competitive environment due to the recent market entry of digital financial service providers like online-only banks, P2P lenders, or credit brokerage platforms. My results show that while small businesses still seem to value close and stable relationships with local lenders, they react strongly if those ties are disrupted. In particular, I find that small businesses that have experienced frequent staff turnover at their local bank or even the closure of a local branch are significantly more likely to seek digital finance. On a structural level, my analyses show higher digital finance adoption probabilities in areas with a lower physical branch density and higher average distances between the local account manager and the bank's credit decision-making center. However, I find no effect of branch closures, loan officer turnover, and banking sector structure on the cooperation probabilities with large, multi-market conventional banks. This implies that digital finance can act as a substitute for conventional bank finance if lending distances increase.

My research extends prior work on small businesses' lender choices to include financing alternatives outside the conventional banking sector (Berger & Black, 2011; Berger et al., 2014; Cole et al., 2004; Jackowicz et al., 2021). Advancing the nascent string of research on fintech finance for

small businesses, I respond to scholars' call for research on how the emergence of digital financial service providers affects small firms' bank relationships (Flögel & Beckamp, 2020; Z. Lu et al., 2022). For conventional and especially local banks, my research implies that to retain their dominance in the small business lending market, they must not push consolidation endeavors too far and well-consider how every decision to close a local branch impacts the lending relationships with their small business clients. For small business owner-managers, my research provides valuable insights into the advantages and disadvantages of lending relationships with small local banks. It offers impetus to re-evaluate their housebank dependency as they might well be able to find more favorable financing conditions outside the conventional banking sector.

5.2 Avenues for future research

As with any empirical work, the analyses presented throughout this dissertation are not without limitations. However, these limitations raise interesting questions and opportunities for future research. First, all three essays are based on data obtained exclusively from small businesses located in Germany. Therefore, they all operate within the continental, bank-oriented financial system where capital markets are hard to access and most external funding is channeled through financial intermediaries (La Porta et al., 1997). This limits small firms' access to external capital providers and increases their reliance on internal financing options like financial bootstrapping (Niederöcker, 2002). Outside capital is almost exclusively obtained through trade credit (Demirguc-Kunt & Maksimovic, 2001) and bank loans (Audretsch & Elston, 1997). The latter is usually provided by a single relationship lender, commonly referred to as the firm's housebank - a concept much less prominent in Anglo-Saxon countries (Harhoff & Körting, 1998). I thus encourage future researchers to conduct similar analyses in Anglo-Saxon countries where capital markets are more dominant and small business financing is thus already less reliant on financial intermediaries and more open to direct investor participation. Alternatively, future research could opt for a cross-country setting, contrasting the financing practices of small enterprises within the Anglo-Saxon and Continental-European financial system.

In essay I, I employ a cross-sectional research design to investigate firm characteristics associated with higher degrees of WCM routine implementation in small businesses. Methodologically I am thus unable to make claims about the direction and causality of these associations. However, these causal linkages need to be explored in detail to be able to provide managers with targeted

recommendations for action. Since the endogeneity-robust quantitative methods necessary to do so would likely fail due to the very limited data available on micro firms, I encourage future scholars to approach the matter using qualitative research designs. Such qualitative work could also yield insights into the main barriers deterring small enterprises from taking-up WCM routines. The findings of essay I lead to the conjecture that the drivers and deterrents for WCM routine implementation cannot be entirely mirror-inverted and should thus be investigated separately.

Essay II utilizes qualitative comparative analysis based on primary interview data to unravel the success factors of crowdfunding campaigns launched by small enterprises and their interrelations. While this configurational approach has several methodological advantages explained in detail in section 3.3 of this dissertation, the data aggregation necessary to conduct the analysis limits the granularity with which both the success factors and outcome can be measured. From a practitioner's point of view, the results are therefore not as close to the real-world decision-making challenges initiators are facing as the informational detail of the interview data would allow. We mitigate this in part by relating the results of the configurational analysis back to the sampled cases, but still, future research could expand our work by investigating each of the campaign setups we have identified in more detail. In particular, quantitatively approximating an importance ranking of all indicator-level success factors within a campaign setup would enable initiators to increase their prospects of campaign success at minimal cost. Considering the two-sided nature of the crowdfunding market, our study focuses on the project initiator and their view of campaign success. As investors might consider different aspects when evaluating the success of their campaign investments, we urge future scholars to expand the scarce literature string on crowdfunding success assessment by providing an investors' perspective to the picture.

With essay III, I provide first scientific insights on the drivers of digital finance adoption among small enterprises. However, since my research is motivated by the structural changes in the conventional banking sector, I focus my attention on supply-side drivers. Future research is encouraged to investigate firm- and manager-inherent, demand-side characteristics affecting the digital finance adoption choices of small businesses. While there is exhaustive literature on the internet banking and fintech adoption behavior of private consumers (Belanche et al., 2019; Chawla & Joshi, 2017; Laukkanen, 2016; Shaikh & Karjaluoto, 2015; S. Singh et al., 2020; Zhou et al., 2010), similar evidence for small enterprises is virtually non-existent. Additionally, there is also no scholarly work to date investigating the outcomes of digital lending relationships. Following research on conventional bank relationships (Angori et al., 2019; Fiordelisi et al., 2014;

Hernández-Cánovas & Martínez-Solano, 2010), it should be investigated how the cooperation with digital financial service providers affects the availability and terms of credit for small businesses.

5.3 Concluding remarks

Ninety-seven percent of all businesses worldwide have less than 50 employees (Global Entrepreneurship Research Association, 2023). Accounting for a lion's share of global value creation, micro and small enterprises are indispensable contributors to job creation, economic development, and innovation (Acs & Audretsch, 1993). However, given their empirical and economic importance, micro and small enterprises are severely underrepresented in finance and business research – even within the SME realm (Gherhes et al., 2016; Kelliher & Reinl, 2009; Perren, 1999). The remarks in the introduction to this dissertation have shown why this is particularly unfortunate given the "liabilities of smallness" (Aldrich & Auster, 1986) with which particularly the smallest of companies are confronted. Due to informational frictions, the most significant of these liabilities is their limited access to funding.

Therefore, drawing on original survey and interview data, this dissertation aims to provide micro and small business managers with options and strategies to secure and actively shape their financing. With essay I, I show how a structured working capital management system can be implemented even under significant (human) resource constraints and provide empirical evidence that such a system is securing liquidity and enhancing performance even in the smallest companies. Essay II provides managers with a set of blueprints showing how crowdfunding campaigns can be successfully implemented in small businesses. Its focus on the interaction of individual success factors demonstrates that crowdfunding is a promising way of financing for small businesses with various sets of resources and that it can be successfully implemented even if the business fails to fulfill some allegedly crucial success factors identified by prior literature (Butticè et al., 2017; Calic & Mosakowski, 2016; Koch & Siering, 2019; Mollick, 2014). The third essay is intended to encourage managers to critically examine their conventional banking relationships by demonstrating that digital financial service providers can be attractive lender substitutes as structural and regulatory changes in the banking sector increase average lending distances and curtail the benefits of relationship banking.

I would like to end this dissertation by encouraging future scholars to explicitly address the interests and challenges of very small businesses in their research projects. It is the task of business research to equip small business managers with the strategic and operational insights they need to survive and thrive in an ever-changing competitive environment.

Appendix

TABLE A.1
Variance inflation factors for essay I

This table shows variance inflation factors, tolerance values, and the respective R-squared values for all independent variables included in the multinomial logit and OLS regression models of essay I.

Variable	VIF	Tolerance	R-squared
Multinomial logit model (see equation 2.2)			
EMP	1.21	0.8258	0.1742
AGE	1.06	0.9414	0.0586
GROW	1.19	0.8410	0.1590
SKILL	1.22	0.8224	0.1776
CRC	1.25	0.8030	0.1970
INVR	1.37	0.7323	0.2677
RECR	1.28	0.7801	0.2199
PAYR	1.24	0.8046	0.1954
CASHR	1.28	0.7831	0.2169
ROTA	1.42	0.7028	0.2972
CONS	2.42	0.4125	0.5875
MANU	2.34	0.4274	0.5726
OLS models (see equation 2.3)			
HIGH	3.37	0.2967	0.7033
INV	2.06	0.4851	0.5149
CREDIT	2.26	0.4430	0.5570
EMP	1.64	0.6115	0.3885
SKILL	1.33	0.7491	0.2509
AGE	1.13	0.8855	0.1145
GROW	1.20	0.8308	0.1692
DR	1.06	0.9467	0.0533
CRC	1.77	0.5647	0.4353
TA	1.74	0.5736	0.4264
CONS	1.26	0.7910	0.2090
SERV	1.35	0.7386	0.2614

TABLE A.2
Interview guideline for essay II

Intro: Please tell me something about the key facts of your company and your overall financing situation.

Prior to the campaign: How did you come up with the idea of using crowdfunding to finance your business? Why did you choose it over other alternatives?

- Did you also consider other, more conventional sources of financing like a bank loan?
- What exactly did you use the money you collected for?
- Did you have any other motivation to use crowdfunding apart from raising capital?

During the campaign: Please guide me through the operational process of the campaign. What was a typical day during the collection period like?

- How much time did you spend on the organisation of the campaign?
- What were the tasks you had to fulfill and what was done by the platform?
- How did you decide on the actual design of the campaign? *(campaign page, reward scheme, pledging conditions, ...)*
- Did you interact with investors during the time?
- Which marketing efforts did you engage in to support the campaign? *(channels, tracking, ...)*
- Can you estimate the cost that were associated with your entire campaign? *(cost of capital and marketing, rewards,...)*

After the campaign: Looking at your campaign in hindsight - how would evaluate its outcome?

- To what degree have the expectations you had prior to launching the campaign been fulfilled?
- What would you tell your colleagues in the craft industry if they are thinking about launching a campaign on their own? *(recommendation? why?)*
- Is there anything you would do differently next time?
- Would you consider launching another campaign in the future?

Conclusion: We are now already at the end of the interview, thank you very much for your time! Is there anything that you might want to add? Do you have any further remarks you would consider important about your campaign?

TABLE A.3
Calibration framework for 2nd order dimension *Product suitability* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Suitability for transaction	Natural interest payment possible	1.00	Product is suited to arrange some form of natural interest payment.	"See, our production costs are relatively low compared to what we would have to pay in cash interest [...] and that's why it works very well for us to pay off people in beer."
		0.00	Product is not suited for natural interest payment.	"The thing is that the interest you have to pay is just very high. And we don't have a fancy product that we can give investors instead of cash, like the guys from [brewery] [...], so unfortunately that's just not an option for us."
	Easy to ship via mail	1.00	Product or giveaways can be easily shipped to the customer via mail, i.e., they are not too big or fragile.	"The good thing was that our watches are relatively small and thus easy and cheap to ship via mail."
		0.00	Product is expensive or impossible to ship via mail.	"That was a real big problem for us that many bottles broke during the shipping."
	Standardized product	1.00	Product or giveaways are highly standardized and can be easily produced at a larger scale.	"You need products that are at least somewhat standardized, otherwise you make your life hell during the settlement."
		0.00	Product is living on its uniqueness or individuality and has to be produced for each customer separately.	"I severely underestimated the time it took me to produce the thank-you giveaways since I needed to personalize everything, and I also left too many options to choose from. That's something I'd do differently next time."
Suitable target group	n.a.	1.00	Large, clearly defined target group with deep pockets; product for end-customer.	"You need a product that is intended for the end customer, and you need a clearly defined target group."
		0.67	There is a clearly defined target group; product for end-customer.	"You have to know that our customers simply are people who are usually not that into modern technology."
		0.33	There is no clearly defined target group; small regional catchment area.	"On Startnext, it is very important where your campaign is located."
		0.00	There is no clearly defined target group; B2B product.	"If your targeting companies it gets very difficult, you have to address them in a completely different fashion [...]."

Calibration framework for 2nd order dimension *Product suitability* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Emotional appeal	Hype potential	1.00	Strong community is existing already prior to the start of the campaign.	"Every campaign is still building on the same community, people who say, hey, I know this thing is working, that's all going to go smoothly."
		0.67	No prior community existing but product is in the spirit of time, disruptive and appealing to a large audience.	"For companies that have a product which is really catching people, crowdfunding is a very good opportunity [...]."
		0.33	Off-the-rack product that is needed repeatedly by a larger number of customers.	"If you don't have the most innovative product, you at least need a product that people need repeatedly."
		0.00	Off-the-rack product that is only needed on rare occasions.	"It is very difficult in the niche in which we are making knives to get people hooked [...]."
	Uniqueness	1.00	Product is unique and not available anywhere else.	"You have to communicate, hey, that's a unique opportunity, if the campaign fails then the product will never come into existence."
		0.67	Product is unique, similar products are only available at inferior quality.	"You need a good product which is fairly unique and not generic, it needs to convey a feeling of quality."
		0.33	Product is well-known but difficult to get at similar quality.	"The most important point is that we are selling something that is available everywhere but not in the quality which we provide."
		0.00	Product is off-the-rack and easily available elsewhere.	"If you think about it, beer is just not a good crowdfunding product, it is available everywhere."
	Tangible product	1.00	Product is tangible, quality and fit are easily assessable via internet.	"For us it was a great advantage that people can imagine that sublime watches have a certain value, that is something tangible, you can assess its value [via internet]."
		0.67	Product is tangible but quality and fit need to be assessed in person.	"For someone who is selling custom-made shoes it is advantageous that the product is highly emotional and tangible."
		0.33	Product is intangible (e.g., a service) but differences in quality can be assessed by laymen.	"I know someone in the business of gardening and landscaping and for him it worked well because there is a qualitative difference between his work and others' and the difference is clearly visible."
		0.00	Product is intangible and quality cannot be easily assessed by laymen.	"I think for someone offering a service it is very difficult, if you are for example a plumber."

Calibration framework for 2nd order dimension *Product suitability* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Product-campaign-fit	Platform choice	1.00	Deliberate choice, fit compared for different platforms, large reach.	"We looked at a lot of platforms and then we chose Conda because they are most suited for small firms."
		0.67	Platform chosen with some consideration but no comparison of different platforms.	"I chose Startnext because I had also funded my food truck with them earlier and everything went smoothly back then. And I also know their founder."
		0.33	Platform chosen inconsiderately or arbitrarily.	"I simply chose them because they were the only ones I knew."
		0.00	Campaign done single-handedly without platform cooperation.	"We did it without any platform because I thought I could save the 7 or 8 percent which the platform takes."
	Deliberate timing and duration of campaign	1.00	Timing chosen according to seasonality of product, funding period between 4 and 8 weeks.	"We said we wanted to do the campaign during barbecue season. And for the funding period, our advisor at Startnext recommended us to take 6 weeks so we did that."
		0.67	Campaign timing according to seasonality of product, funding period between 2 to 4 or 8 to 10 weeks.	"Timing is everything, we always collect money between October and December because that is the time when people are spending the most money."
		0.33	Campaign timed inconsiderately or funding period too short or too long.	"The funding period was over half a year."
		0.00	Campaign timed inconsiderately and funding period too short or too long.	"We didn't get things done in time so unfortunately our campaign slipped into the holiday season - that turned out to be bad. The funding period was also the absolute maximum with 120 days."

TABLE A.4
Calibration framework for 2nd order dimension *Expertise* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Experience	Professional background	1.00	Initiator has either practical experience as consultant or relevant academic background.	"I am working as a part-time IT consultant."
		0.00	Initiator has no relevant professional experience or academic background.	"I have only ever worked in my shoemaker trade."
	As investor	1.00	Initiator did engage in at least one crowdfunding campaign as an investor prior to starting their own campaign.	"There are some 10 or 20 projects in which I am invested with a couple hundred euros, just to look, how is their communication?"
		0.00	Initiator has never engaged in any crowdfunding campaign as an investor.	"You know, that was my first excursion into the crowdfunding world."
	As initiator	1.00	Initiator has launched at least one crowdfunding campaign prior to the one under consideration.	"I have already done two campaigns prior to that one."
		0.00	Campaign under investigation is the first one started by the interviewee.	"This was the first time I tried crowdfunding [...]."
Advice and support	From PR-agency	1.00	Initiators did (for a fee) cooperate with a professional PR-agency.	"Obviously we got our press releases on the way together with a PR-agency."
		0.00	No professional PR-agency was involved in the campaign.	"You are asking here and there if people are willing to share it but I did not receive any kind of professional external services or anything."
	From consultancy	1.00	Initiators did hire a professional consultant or advisor to help with campaign planning and execution.	"You need a consultant who is experienced in these kinds of things."
		0.00	Initiators did not cooperate with any kind of professional consultant or advisor.	"I dislike external consultants. Whoever thinks advisors are advising companies must also be thinking that butterflies are folding lemons [German wordplay]."
	From other facilitation agency	1.00	Initiators did receive some form of support or advice from a governmental or honorary facilitation agency.	"I participated in an accelerator of my university, that is a kind of start-up aid and they also offer consulting services."
		0.00	Initiators did not receive any unpaid support or advice from a facilitation agency.	"No none at all. We did that all by ourselves."
	Through exchange and networking with other initiators	1.00	Initiators did actively seek contact with other initiators or attend relevant networking events.	"[...]Then you obviously do benchmarking, that is, we went to a colleague who is currently launching already his fourth campaign."
		0.00	Initiators had no contact to or exchange with other initiators prior to starting the campaign.	"I did teach everything to myself."

TABLE A.5
Calibration framework for 2nd order dimension *Commitment* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Promotion effort	Tracking	1.00	Initiator is able to track the conversion of their communication and marketing efforts.	"The thing is, no one can tell you which channel is working for your product, which means you have to prepare a couple of channels and test them. And when you see which one converts and which doesn't you have to adjust."
		0.00	Initiator has no knowledge about the effectiveness of their promotion efforts.	"For us it was impossible to tell whether our marketing money was well spent."
	Social media	1.00	Initiators are actively promoting their campaign through company's or their own social media profiles.	"We did much advertising on our social media channels and always pushed people to share it."
		0.00	Campaign information is not shared via social media, no company profiles exist.	"We did not use social media at all."
	Classical media	1.00	Campaign was promoted via newspaper articles, radio and TV spots, flyers, or giveaways.	"We were advertising in the local newspapers. And we printed coasters and passed them out all over the city."
		0.00	No classical media and marketing tools were used to promote the campaign.	"Next time, I would more actively involve the press and local media."
	Newsletters and blog	1.00	Initiators promoted the campaign via mailing lists, newsletters, or blog entries.	"Today we have a large newsletter of people who have already invested prior and when we launch a new campaign, we can easily contact all of them."
		0.00	No newsletter or mailing list was built up to promote the campaign.	"We did not do anything of the kind. I think Kapilendo has a newsletter, maybe our campaign was mentioned there but I am not sure."
	Personal network	1.00	Initiators deliberately used personal and professional contacts as potential investors and multipliers.	"Our professional network and contacts were of great help for the campaign."
		0.00	No effort to involve personal or professional contacts or they were deliberately excluded.	"We deliberately excluded our personal environment because they had supported us so much already prior to the campaign and we did not want to involve them in it."
Video	n.a.	1.00	The video used for the campaign was purchased professionally for a significant amount of money.	"So, the video was actually pretty expensive, I think it was a four-digit amount [...] but it was a very good one in the end, very professional."
		0.67	The video used for the campaign was produced by the initiators themselves but in a semi-professional way.	"I am shooting movies for over 10 years now and I also asked for help from two colleagues."
		0.33	The video used for the campaign was either already existing or produced in a very simple manner.	"I simply mounted my camera on a tripod and said a couple of words [...], I did not invest much in it."
		0.00	No video was used during the promotion of the campaign at all.	"We had no video for the campaign."

Calibration framework for 2nd order dimension *Commitment* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Interaction with investors	Answering questions	1.00	Initiators try to proactively engage with investors and clear up potential questions in advance, for additional questions there is a template way of contacting the initiators and timely response is given.	"Whenever I receive a question that I think might interest also other investors, I answer them also in a blog entry."
		0.67	There is a template way of asking questions directly to the initiator, active communication with investors is welcomed but has to be initiated by the investor.	"[...] It is very important that you react quickly on peoples' questions. It simply doesn't go down well if you're taking too long."
		0.33	No template for asking questions, direct contact to initiator possible but not intended.	"I hardly had any direct contact with investors, maybe one or two reached out to me."
		0.00	No template for questions, direct contact to initiator is not intended and only possible through platform operator.	"I had no direct contact to any investor, that was all handled exclusively by Kapilendo."
	Communication with investors	1.00	Regular and comprehensive information about project progress is provided and actively communicated to investors.	"I put great effort into communicating with my investors. I regularly write a large newsletter with any possible information about the project and its progress."
		0.67	Regular and rather comprehensive information on project progress is provided but has to be searched for by investors.	"I am not one to leave the campaign be after it is running, so I try to communicate with investors, mainly through regular blog entries."
		0.33	Limited information on project progress provided but has to be actively searched for by interested investors.	"A couple of times I wrote a blog entry but I don't think that this was appreciated by people, it had only very few readers."
		0.00	No communication of project progress at all, no newsletters, no blog entries or updates on campaign page.	"No, there was no need for me to communicate anything."
	Openness for investor's concerns	1.00	Initiators show flexibility and openness to investors' concerns and special wishes also after they have already invested in the campaign.	"We are not splitting hairs regarding the contract, so if someone comes to me and says he needs like 500 or 2,000 back, he gets it back."
		0.67	Initiator shows flexibility and openness to potential investors' concerns mainly to get them involved.	"I had a friend who is doing catering and he was like, if I am supporting your campaign would you be willing to give a patisserie lesson for my chefs? And I was like of course I will and we arranged it."
		0.33	Initiators can be contacted directly but no deviations from the default contract are possible.	"There was one single case where someone wanted to get out his money early. But then I wrote him and explained the situation and we were able to reach an agreement."
		0.00	Investors have no way of contacting the initiators directly and thus no possibility to articulate any special wishes or concerns.	"I had no direct contact to any investor, that was all handled exclusively by Kapilendo."

Calibration framework for 2nd order dimension *Commitment* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Active engagement of owner	n.a.	1.00	Owner is actively and visibly engaged in promoting and exercising the campaign.	"I was involved in everything; I think it is important that your investors know that you as the owner of the company are really behind this project."
		0.00	Execution of the campaign is outsourced to the platform or an external service provider, neither the owner nor any employees are actively engaged in the campaign.	"I outsourced the whole thing and I am very thankful that everything was processed for me."
Planning	Preparation time	1.00	The amount of time granted to prepare the campaign is well thought through, planning process started at least 6 months prior to the beginning of the funding period.	"The whole thing is nothing you want to rush; the project had a lead time of over 6 months."
		0.67	The amount of time to prepare the campaign is arbitrary but planning process started early enough not to put initiators under time pressure (2-6 months).	"Difficult to say what the right amount of preparation time is. For us, 4 months turned out to be ok."
		0.33	Initiators acknowledge that preparation time was too short, which put them under strong time pressure.	"I think you need at least 2 months of preparation time, we did it in 2 weeks. That was madness, you get no sleep at all."
		0.00	Initiators had almost no preparation time at all, no deliberate planning process prior to start of funding period.	"Actually, the whole thing was very hastily cobbled together, which means we were not well prepared."
	Contentual preparation	1.00	There is a well thought through strategy for the whole campaign including the settlement procedure; marketing content is already prepared in advance.	"I would plan and pre-produce the Instagram content and then, with start of the campaign, I'd only need to hit the play button and the posts are released automatically every day."
		0.67	Marketing content and settlement process not prepared in advance but following a previously laid out, thought-through strategy.	"We always plan great collecting days where people come to us, receive their interest and ideally spend it directly on beer."
		0.33	No comprehensive strategy existing, both media content and settlement are organized on the fly.	"We were more or less driving by sight, so it was very spontaneous, now I post that thing, now I have this idea and so on."
		0.00	No campaign strategy existing and no contentual preparations whatsoever.	"To be honest, we more or less stumbled blindly into the whole thing."

TABLE A.6
Calibration framework for 2nd order dimension *Deliberate choice* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
No impact of issues with banks on decision	n.a.	1.00	Choice unaffected by any issues or concerns with bank financing; deliberate and intrinsically motivated decision for crowdfunding.	"I had heard a lot about crowdfunding already and I just wanted to know if it would work for my company as well."
		0.67	Choice largely unaffected by issues with banks; mentioning of problems with bureaucracy.	"The good thing about crowdfunding is that you only have limited disclosure obligations."
		0.33	Crowdfunding chosen because initiators were unwilling to provide the collateral demanded by banks.	"Our main concern was with liability, for a company of our size banks always force you into being personally liable."
		0.00	Crowdfunding only chosen because banks were not willing to grant loan; crowdfunding is obvious makeshift solution.	"The truth is that simply no bank was willing to finance our project."
Intention to utilize marketing potential	n.a.	1.00	Main driver is to utilize customer retention and visibility potential of crowdfunding campaign.	"For us, the campaign was in the first place a means of promoting our brand, to make our beer known beyond our immediate neighborhood."
		0.67	Crowdfunding campaign used mainly as a proof of concept or seed financing for a new product or business idea.	"The reason why I engaged in crowdfunding was simply to validate the product, to see if there really is a market for it."
		0.33	Main driver was to raise money, marketing impact turned out to be a pleasant side effect.	"Actually, that was not that important to me, I really just wanted to gather money. The media attention my campaign received actually came surprising to me."
		0.00	Marketing effects did not play a role in the decision, goal was only to raise money.	"Marketing played no role at all, it was simply about interim financing. I went to the platform and told them I needed money [...]."

TABLE A.7
Calibration framework for 2nd order dimension *Catching message* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Suporting something good	Project sustainability	1.00	Either the company or the project fulfills all dimensions of sustainability which is also apparent to investors and promoted during the campaign.	"All of our products are highly sustainable; we also only use sustainable materials."
		0.67	Either the company or the project fulfills all dimensions of sustainability but does not actively promote it during the campaign.	"We wanted to finance a photovoltaic system. And we explicitly decided to finance that with the crowd because we are convinced that people want to invest in something that is viable for society."
		0.33	Company or project is not explicitly sustainable but tries to jump on the bandwagon.	"The best thing is you cling lock, stock, and barrel to topics like sustainability - even if your company is not considered too green."
		0.00	Sustainability plays no role in the campaign or product at all.	"Sustainability just doesn't come natural with our product, so we tried to avoid that topic during the campaign."
	Personal or local connection	1.00	Company has strong regional roots and is actively promoting the benefit of the project for the immediate neighborhood.	"It was obvious that people who had a connection to my business were more willing to give money."
		0.67	Company has strong regional roots and is only regionally active.	"As a local craftsman, I have to concentrate on the regional focus of my campaign and stress the great importance of my service for the local community."
		0.33	Company has strong regional roots but there is no special benefit for local investors.	"People just prefer to support someone from their neighborhood instead of giving their money to an anonymous hedge fund. And that's irrespective of whether the product or service they are investing in has actual merit for them."
		0.00	Company is operating nationwide and has no specific regional roots.	"We have customers from all over the world and actually I'm planning on going public with the company soon, so it's important that we have an international image."
	Directly observable effect of investment	1.00	The effect of the investment is directly observable to investors and immediately usable; e.g., a specific product is financed.	"The good thing was that people could actually taste our beer afterwards and see their money put to good use."
		0.67	The effect of the investment is directly observable to investors but not usable; e.g., a construction project is financed.	"The message [...] was, hey, we have a nice store here selling this excellent cheese but the store is simply too small to increase our product range. And if you want to taste cheese of other excellent dairies you can help us by contributing to our campaign."
		0.33	The effect of the investment is not directly observable to investors but clearly defined.	"We used the campaign to finance our new storage site."
		0.00	The effect of the investment is neither directly observable nor clearly defined; money raised has no clear intended use.	"We just wanted to raise some interim financing, so we did not have any special project or something as the funding target."

Calibration framework for 2nd order dimension *Catching message* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Getting investor's trust	Family tradition and family ownership	1.00	The funding company has a long tradition and is family owned; owners actively communicate that they vouch for their business with their name.	"I am convinced that people have trust in established, hundreds of years old companies and craftsmen. I think that's why our campaign worked so well."
		0.67	The funding company has either a long tradition or is family owned.	"Despite our size, we are still 100 percent family owned and are proud of that."
		0.33	The company is existing for some time but has experienced changes of ownership or name.	"Our company is existing for hundreds of years but we have a really eventful history."
		0.00	The funding company is relatively new or operating nationwide and perceived as anonymous.	"We are just in the very startup phase of our company."
	Clearly communicated funding target	1.00	The funding goal is clearly communicated and the numbers behind the campaign are transparent and plausible.	"You have to communicate exactly what the money will be used for. And we were very transparent about that."
		0.67	The funding goal is clearly communicated; however, the exact numbers of the campaign remain undisclosed.	"So, the money was all for my foodtruck, yes, but obviously the 10k of the campaign did not suffice for that. But I didn't communicate that because I did not want to discourage people."
		0.33	It is not clearly communicated what the money will be used for.	"We used the 12,000 euro from the crowdfunding to increase our equity."
		0.00	Investors are intentionally deceived about the funding goal.	"Yes, the platform asks you to put some intended use on the campaign page but we didn't really feel accountable to anyone about the money. The money came in and we felt free to use it for whatever we wanted."
	Authenticity of initiator or company	1.00	Initiators are able to convey that they are really behind the project with their heart and soul and have a personal connection with it; investors are getting to know faces and contact persons.	"People need to be sympathetic to you, they need to see names and faces."
		0.67	Initiators are able to convey that they really put a lot of effort into both the product and the campaign.	"As a potential investor, I need the feeling that I give my money to someone who is doing this with all his heart and passion."
		0.33	Initiators are not personally visible to investors; financial aspects of investment are paramount.	"That was the central problem with the campaign that we were not believed to be authentic."
		0.00	Campaign is anonymous, investors might be under the impression that the purpose of the campaign is only to make money.	"Our campaign was really all about the money, so we did not really bother with these kinds of soft factors."

Calibration framework for 2nd order dimension *Catching message* of essay II (cont.)

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Feeling of being a trend-setter	Creative concept	1.00	The product or service advances an existing one in a creative manner.	"I am a scaffolder and during summertime, I build a kind of climbing scaffold where everyone that supported the campaign can come and have a fun day with their kids."
		0.00	The product or service is not particularly creative or already existing multiple times.	"If you don't have a creative idea or concept it is very difficult to get attention from the crowdfunding community."
	Uniqueness	1.00	The product is unique in some way, e.g., quality, production method, look, size.	"That's also a factor, the uniqueness, having something that is difficult to compare [...]. That's something elementary to stand out on a platform."
		0.00	The product is more or less off-the-rack and can be obtained in similar fashion from various sources.	"To this regard, I think I'd have to admit that we are simply selling ordinary beer."
	Innovative product or concept	1.00	The product or service is either something completely new or a significant development of a familiar product.	"So, we came up with a completely new way of tiling a roof, I think that's why crowdfunding also worked for us."
		0.00	The product is well-known and similar products are existing for some time.	"To this regard, I think I'd have to admit that we are simply selling ordinary beer."

TABLE A.8
Calibration framework for outcome *Success* of essay II

1st order	Indicator	Score	Theoretical characteristic	Data anchor
Recommendation	n.a.	1.00	Initiator fully recommends crowdfunding to other small firms and is also planning to launch another campaign in the future.	"Yes, we will definitely do it again, next year at the latest there will be a second large financing round."
		0.67	Initiator attaches some qualifying conditions to both their recommendation and own intention to launch another campaign.	"I think it depends on a few things, the industry you're working in but also your customer base."
		0.33	Initiator is reluctant to launch another campaign and recommends crowdfunding only under a favorable set of conditions.	"At the moment, I am very reluctant to launch another campaign and consequently also to recommend others to do so, simply because it is just a huge effort."
		0.00	Initiator is neither planning to launch another campaign nor recommending it to other small businesses.	"In my personal opinion, crowdfunding is at the moment not suited for small firms and I can't imagine doing it again."
Financial success	n.a.	1.00	The funding goal was reached and the cost was similar to or below alternative sources of funding.	"We had costs of about 5,500 but a lot of that was for coupons for our meat. And we were able to collect 17,000, so we definitely made a large profit with the campaign."
		0.67	The funding goal was reached and the cost deemed affordable by the initiators even though above that of alternative sources of funding.	"All the smaller campaigns usually are breaking-even and that is totally ok, I calculated it like that."
		0.33	The funding goal was reached but the cost of the money was too high for the campaign to be a beneficial source of funding to the company.	"We had no money left in the end, I even had to put in another 2,000 euro myself."
		0.00	The campaign did not reach the funding goal, the initiators did not receive any money.	"We were planning to reach at least 15,000 and hoping for up to 50,000. And in the end the campaign only reached 7,000 euro, so the money was transferred back to the people who had contributed."
Marketing success	n.a.	1.00	The campaign had a sustainable impact on the publicity and customer base of the company, a community has been created.	"We were really able to build a community of die-hard fans of our products, that was amazing."
		0.67	The campaign was able to create significant publicity but no real community building.	"We had the local press here who advertised us, so the campaign really had a positive impact on our brand awareness."
		0.33	The campaign had a very limited impact on the firm's public image or degree of awareness but was also not directly aiming at publicity increase.	"Yes, we were told by the platform that we can also use the campaign to advertise our product and I think we even sent out an info sheet once but that didn't result in any noticeable increase in sales."
		0.00	Even though the initiators aimed for an effect on firm publicity and awareness, the desired impact could not be realized.	"It was not the success we expected, we simply were not able to get the reach and level of awareness we wanted, I think we simply lacked the necessary network."

Table A.9
QCA input data matrix for essay II

Case ID	Conditions					Outcome
	PS	EXP	COM	DCH	CM	SUC
01-1	1.00	0.33	0.00	1.00	0.67	0.67
02-1	0.33	0.00	0.00	0.33	0.67	0.33
03-1	0.67	0.67	0.67	0.67	0.67	0.67
04-1	0.33	0.00	0.00	0.67	0.33	0.33
05-1	0.67	0.67	0.67	0.67	0.67	1.00
05-2	0.67	1.00	1.00	1.00	0.67	1.00
05-3	1.00	1.00	1.00	1.00	0.67	1.00
06-1	0.33	1.00	0.67	0.67	1.00	0.67
07-1	1.00	1.00	0.67	1.00	1.00	1.00
08-1	0.00	0.33	0.00	0.67	0.33	0.33
09-1	0.67	0.33	0.67	1.00	1.00	0.67
10-1	0.67	0.33	0.33	0.33	1.00	0.33
11-1	0.67	0.67	0.67	1.00	1.00	0.67
12-1	0.67	0.67	0.67	1.00	1.00	0.67
13-1	0.67	1.00	0.00	0.67	0.33	0.67
14-1	0.33	1.00	0.67	0.67	0.67	0.67
15-1	1.00	1.00	0.67	1.00	0.67	0.67
16-1	1.00	0.67	0.67	1.00	1.00	0.67
17-1	1.00	0.67	0.67	1.00	0.67	0.67
18-1	0.67	0.67	0.00	0.00	1.00	0.33
19-1	0.33	1.00	0.00	0.67	1.00	0.33
20-1	0.67	0.00	0.67	0.33	1.00	0.33
21-1	0.67	1.00	0.67	1.00	1.00	1.00
21-2	0.67	1.00	0.67	1.00	1.00	1.00
22-1	0.67	0.33	0.00	0.33	0.67	0.33
23-1	1.00	0.67	0.67	0.67	1.00	0.67

TABLE A.10
Analysis of sufficiency with recalibrated outcome for essay II

Campaign configuration	S'1	S'2	S'3
Product suitability	●	○	•
Expertise	○	●	●
Commitment		●	○
Deliberate choice	●	•	○
Catching message	•	•	●
Consistency	0.872	0.886	0.907
Raw coverage	0.323	0.370	0.231
Unique coverage	0.138	0.116	0.023
Overall solution consistency		0.823	
Overall solution coverage		0.555	

Note: Solid dots (●) indicate the presence of the respective conditions while circles (○) indicate their absence. Large dots or circles refer to core conditions while small dots or circles refer to peripheral conditions. Blank spaces indicate that the condition is redundant for achieving the outcome.

TABLE A.11
Variance inflation factors for main models of essay III

	Model				
	(1)	(2)	(3)	(4)	(5)
B.DENSITY.AREA		1.043			1.076
B.DENSITY.POP			1.052		
FUNC.DIST				1.068	1.200
CLOSURE	1.107	1.119	1.116	1.149	1.159
REL.LENGTH	1.190	1.200	1.194	1.190	1.194
LO.TURNOVER	1.061	1.061	1.058	1.061	1.058
CONCENTRATION	1.294	1.291	1.295	1.326	1.323
MB.LOCAL	1.125	1.130	1.129	1.124	1.129
COLLATERAL	1.083	1.084	1.084	1.089	1.092
TRUST	1.108	1.116	1.110	1.111	1.130
O.AGE	1.164	1.167	1.161	1.167	1.171
GENDER.F	1.089	1.090	1.091	1.092	1.095
EXP.PRIVATE	1.154	1.166	1.164	1.130	1.153
DF.ATTITUDE	1.122	1.141	1.149	1.110	1.120
EMP.SIZE	1.183	1.192	1.188	1.195	1.207
FIN.CONSTRAINT	1.066	1.067	1.067	1.067	1.072
IND	1.175	1.194	1.196	1.182	1.201

TABLE A.12
Variance inflation factors for robustness tests of essay III

	Model							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
B.DENSITY.AREA	1.070	1.076	1.073	1.071	1.076	1.066	1.045	1.046
FUNC.DIST	1.095	1.099	1.099	1.095	1.094	1.086	1.096	1.077
CLOSURE	1.147	1.159	1.143	1.161	1.168	1.157	1.138	1.189
REL.LENGTH	1.193	1.186	1.189	1.183	1.185	1.204	1.310	1.302
LO.TURNOVER	1.054	1.056	1.050	1.042	1.063	1.071	1.060	1.088
CONCENTRATION	1.292		1.310	1.293	1.294	1.302	1.238	1.236
NB.BANKS		1.302						
MB.LOCAL	1.123	1.122	1.129	1.129	1.158	1.134	1.153	1.203
COLLATERAL	1.088	1.092		1.072	1.094	1.091	1.111	1.128
GUARANTEES			1.062					
TRUST	1.125	1.130	1.127	1.134	1.161	1.119	1.159	1.157
O.AGE	1.181	1.166	1.167	1.176	1.173	1.196	1.230	1.203
GENDER.F	1.093	1.094	1.200	1.062	1.088	1.096	1.108	1.178
EXP.PRIVATE	1.157	1.153	1.165	1.201	1.155	1.141	1.200	1.145
DF.ATTITUDE	1.127	1.121	1.114		1.111	1.110	1.187	1.246
DF.SCEPTIC				1.177				
EMP.SIZE	1.182	1.218	1.207	1.194		1.171	1.141	1.119
TO.SIZE					1.239			
FIN.CONSTRAINT	1.067	1.072	1.082	1.072	1.080	1.092	1.080	1.147
IND	1.194	1.195	1.169		1.216	1.210	1.276	1.399

TABLE A.13
Variance inflation factors for MMB models of essay III

	Model					
	(1)	(2)	(3)	(4)	(5)	(6)
B.DENSITY.AREA		1.073	1.084	1.059		
B.DENSITY.POP			1.032			
FUNC.DIST				1.047	1.050	1.059
CLOSURE	1.083	1.087	1.086	1.095	1.096	1.081
REL.LENGTH	1.220	1.224	1.224	1.198	1.202	1.218
LO.TURNOVER	1.028	1.053	1.035	1.030	1.055	1.050
CONCENTRATION	1.147	1.172	1.153	1.143	1.173	
COLLATERAL	1.051	1.051	1.053	1.065	1.065	1.068
TRUST	1.128	1.137	1.131	1.139	1.146	1.137
O.AGE	1.241	1.243	1.244	1.230	1.232	1.252
GENDER.F	1.074	1.074	1.077	1.078	1.078	1.061
EXP.PRIVATE	1.205	1.213	1.211	1.181	1.187	1.215
DF.ATTITUDE	1.171	1.177	1.185	1.147	1.151	1.165
EMP.SIZE	1.113	1.114	1.114	1.131	1.131	1.106
FIN.CONSTRAINT	1.059	1.060	1.060	1.069	1.069	1.056
IND	1.136	1.148	1.151	1.163	1.170	1.185

FIGURE A.1:
Survey questionnaire of essay I

Survey on the internal financing capabilities of craft enterprises in Germany

Important information for filling out the questionnaire:

1. The survey consists of two parts and is designed to be easy and quick to complete, it should take less than 10 minutes of your time.
2. There are no right or wrong answers. Please fill out the entire questionnaire.
3. The questions are to be answered either by simple ticking or by filling in a given text field.
4. Please complete the questions in the order provided.

Information on data privacy:

1. Participation is voluntary and fully anonymous - no contact information is collected or stored.
2. The questionnaire does not include any personal data. Company-related data is only collected in generic fashion and cannot be traced back to the business completing the questionnaire.
3. The data collected will not be passed on to third parties at any time. Commercial use of any kind is excluded.
4. All collected data will be irrevocably deleted after completion of the analysis and expiration of the legal retention period. An immediate deletion of all data can also be initiated upon request at any time.

1: Information about your enterprise

1.1	How many people are currently employed by your company?	☐ less than 5 ☐ 5 - 9 ☐ 10 - 19	☐ 20 - 34 ☐ 34 – 49 ☐ 50 and more
1.2	What was your annual turnover in euros in the past fiscal year?	☐ less than 50.000 ☐ 50.000 – 125.000 ☐ 125.001 – 250.000	☐ 250.001 – 500.000 ☐ 500.001 – 5 million ☐ more than 5 million
1.3	Please indicate the year of foundation of your company.	__ __ __ __ __	
1.4	In which industry is your company mainly active?	☐ Construction ☐ Metal and electrical ☐ Manufacturing ☐ Clothing, textiles, leather	☐ Food ☐ Health ☐ Services ☐ Other:_____
1.5	Please specify the legal form of your company.	☐ Sole proprietorship ☐ GmbH ☐ GmbH & Co. KG	☐ oHG ☐ GbR ☐ AG ☐ Other: _____
1.6	Are you looking to actively grow your business (in terms of headcount and/or revenue) over the next few years?	☐ Yes	☐ No
1.7	Does at least one of your company's employees hold a degree in business administration, management, or economics?	☐ Yes	☐ No
1.8	Have you tried to take out a bank loan in the past fiscal year?	☐ Yes, the loan was granted ☐ Yes, but loan was denied ☐ No	

1.9 How do you rate your financial planning and management skills...

	Poor	Sufficient	Satisfactory	Good	Very good
... to run your business?	☐	☐	☐	☐	☐
... compared to the skills of your competitors?	☐	☐	☐	☐	☐

2: Information on your firm's internal financing practices						
2.1	How often do you review the following figures?					
		Never	Case-wise	Occasionally	Periodically	Frequently
	Inventories, finished goods, and work in progress	☐	☐	☐	☐	☐
	Standard order quantities of regularly reordered supplies and operating materials	☐	☐	☐	☐	☐
	Turnover durations of inventories and operating materials	☐	☐	☐	☐	☐
	Terms of payment for customers	☐	☐	☐	☐	☐
	Invoicing practices	☐	☐	☐	☐	☐
	Overdue notices	☐	☐	☐	☐	☐
	Bad and doubtful debts	☐	☐	☐	☐	☐
	Terms of payment to creditors	☐	☐	☐	☐	☐
	Use of cash discounts	☐	☐	☐	☐	☐
2.2	How often do you calculate the following figures?					
		Never	Case-wise	Occasionally	Periodically	Frequently
	Working capital (ratio of current assets to current liabilities)	☐	☐	☐	☐	☐
	Liquidity (ratio of cash and cash equivalents to current liabilities)	☐	☐	☐	☐	☐
	Cash conversion (duration of commitment of cash and cash equivalents in current assets)	☐	☐	☐	☐	☐
2.3	Do you apply the "discounted cash flow" method when planning and calculating investments?	☐ Yes ☐ No ☐ I don't know the method				
2.4	Are you using other methods of active liquidity management such as factoring, leasing or similar?	☐ Yes		☐ No		
Thank you for your time and for answering the questionnaire!						

FIGURE A.2:
Concept trees for second order aggregations of essay II

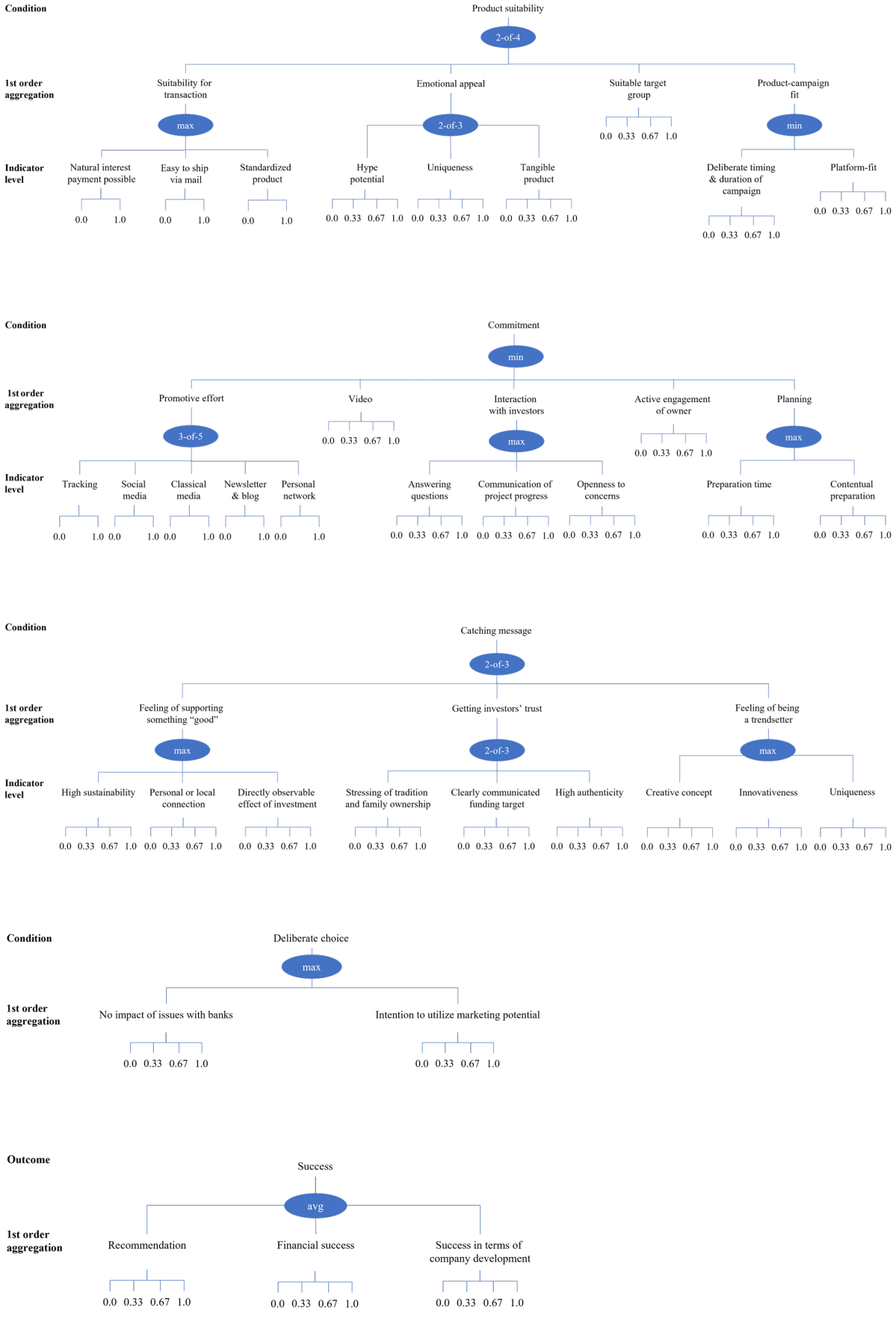


FIGURE A.3:
Declaration of co-authorship for essay II

Co-author declaration and confirmation concerning essay II

Title: Crowdfunding for small craft enterprises: A configurational approach to success

Candidate: Benedikt Tratt

Authors: Benedikt Tratt, Gunther Friedl

The contributions of the candidate (Benedikt Tratt):

1) Original idea and conception of study
2) Development of research design
3) Design and initial execution of literature review
4) Acquisition of interview data
5) Coding and analysis of interview data
6) Interpretation and discussion of results: Development of setup names, contextualization of results, identification of limitations
7) Draft of paper
8) Finalization and submission of paper

The contributions of the co-author (Gunther Friedl):

1) Critical revision of research design and methodology
2) Support of literature review
3) Feedback during coding and interpretation of the qualitative Interview data
4) Critical revision of the paper

We find the descriptions of our contribution in accordance with our view of the cooperation.

München, 10.07.2023 — [redacted]
Date — Signature of candidate

München, 10.07.2023 — [redacted]
Date — Signature of co-author

FIGURE A.4:
Survey questionnaire of essay III

Survey on the influence of digitalization on the banking relationships of small enterprises

Important information for filling out the questionnaire:

1. The survey is designed to be easy and quick to complete, it should only take 5-10 minutes of your time.
2. There are no right or wrong answers. Please fill out the entire questionnaire.
3. Participation is voluntary and fully anonymous - no contact information is collected or stored.
4. The questionnaire does not include any personal data. Company-related data is only collected in generic fashion and cannot be traced back to the business completing the questionnaire.
5. The data collected will not be passed on to third parties at any time. Commercial use of any kind is excluded.
6. All collected data will be irrevocably deleted after completion of the analysis and expiration of the legal retention period. An immediate deletion of all data can also be initiated upon request at any time.

1: Information about your enterprise

1.1	How many people are currently employed by your company?	☐ less than 5 ☐ 5 - 9 ☐ 10 - 19	☐ 20 - 34 ☐ 34 – 49 ☐ 50 and more
1.2	What was your annual turnover in euros in the past fiscal year?	☐ less than 50.000 ☐ 50.000 – 125.000 ☐ 125.001 – 250.000	☐ 250.001 – 500.000 ☐ 500.001 – 5 million ☐ more than 5 million
1.3	Where is your company's headquarters located?	ZIP-code: __ __ __ __ __	(This information is needed to draw conclusions about the branch network in your area.)
1.4	In which industry is your company mainly active?	☐ Construction ☐ Metal and electrical ☐ Manufacturing ☐ Clothing, textiles, leather	☐ Food ☐ Health ☐ Services ☐ Other:_____
1.5	Please indicate your gender.	☐ Female ☐ Diverse	☐ Male ☐ N/A
1.6	Please enter your year of birth.	__ __ __ __	
1.7	What is the significance of digitalization for your company and your business field as a whole?	☐ Very high significance ☐ High significance	☐ Rather low significance ☐ No significance

2: Information on your firm's relationships with conventional banks

2.1	How many different banks do you currently have business relationships with?	☐ 0 ☐ 1	☐ 2 ☐ 3 or more
2.2	In the past 5 years, have you been affected by a branch closure of a financial institution with which you maintain a business relationship?	☐ Yes	☐ No
2.3	With which of these types of credit institutions do you maintain business relationships? (Multiple selection is possible)	☐ Local savings banks (Sparkasse) ☐ Community financial institution (e.g., Volksbank, Raiffeisenbank) ☐ Domestic commercial bank (e.g., Commerzbank, Deutsche Bank) ☐ Foreign commercial bank (e.g., Santander, BNP, Credit Suisse) ☐ Online-only bank (e.g., ING, DKB, Consorsbank)	
2.4	Would you call one of these financial institutions your "housebank"?	☐ Yes: _____	☐ No → Continue with question 3.1
2.5	For how many years are you maintaining the business relationship to your housebank?	☐ Up to 2 years ☐ 3 – 5 years	☐ 6 – 10 years ☐ more than 10 years
2.6	How many times has your responsible loan officer / contact person changed in the course of your relationship with the housebank?	☐ Never ☐ Once	☐ Twice ☐ At least three times
2.7	Since the founding of your enterprise, have you ever changed your housebank or at least seriously considered such a change?	☐ Yes, change completed ☐ Yes, change considered but never completed ☐ No	

3: Information on your firm's financing conditions

3.1 Referring to your experience with banks over the past 5 years, how much do you agree with the following statements?

	Fully disagree 1	2	3	4	Fully agree 5
Banks usually grant loans only against personal guarantees of the owners.	☐	☐	☐	☐	☐
Banks usually grant loans only against the provision of company collateral (e.g., land charges or other physical collateral).	☐	☐	☐	☐	☐
When banks make lending decisions, the confidence of the loan officer in the company's management plays a major role.	☐	☐	☐	☐	☐
A good personal relationship with the loan officer positively influences credit decisions.	☐	☐	☐	☐	☐
Current, short-term liabilities are automatically renewed or extended upon maturity.	☐	☐	☐	☐	☐
At the terms available (regarding interest rates, collateral, etc.), we should have borrowed more than we did.	☐	☐	☐	☐	☐

3.2 In your estimation, how have the following financing conditions changed for your company in the last 5 fiscal years?

	Considerably worsened 1	2	3	4	Considerably improved 5
Interest rates	☐	☐	☐	☐	☐
Available credit lines and loans	☐	☐	☐	☐	☐
Duration of available credit lines and loans	☐	☐	☐	☐	☐
Collateral requirements	☐	☐	☐	☐	☐
Availability and terms of trade credit	☐	☐	☐	☐	☐

3.3	In the last 5 fiscal years, did you have higher capital needs than you were granted credit funds by banks?	☐ Yes	☐ No
3.4	Would you have been willing to pay higher interest rates for additional loan funds in the past 5 fiscal years?	☐ Yes	☐ No

4: Information on the cooperation with digital financial service providers

4.1 Which of the following digital financing options and providers have you already used or at least seriously considered using?

	Already used	Usage considered	Neither used nor considered	Not known
Online-only banks (e.g., ING, DKB, Consors)	☐	☐	☐	☐
Fintechs (e.g., N24, Revolut)	☐	☐	☐	☐
Crowdfunding	☐	☐	☐	☐
Credit comparison and brokerage platforms (e.g., Finanzcheck.de, Check24, Smava)	☐	☐	☐	☐
Credit marketplaces and P2P lending (e.g., Auxmoney, FundingCircle)	☐	☐	☐	☐

4.2 How much do you agree with the following statements regarding the security of transactions with digital financial service providers?

	Fully disagree 1	2	3	4	Fully agree 5
Digital financial service providers have implemented adequate protection mechanisms to ensure the security of my confidential data and information.	☐	☐	☐	☐	☐
Digital financial service providers act honestly and trustfully in their dealings with their customers.	☐	☐	☐	☐	☐
Authorities monitor digital financial service providers at least as strictly as they monitor conventional lenders.	☐	☐	☐	☐	☐

4.3	Have you ever used a digital financial service provider in your personal life?	☐ Yes	☐ No

Thank you for your time and for answering the questionnaire!

References

Abdulsaleh, A. M., & Worthington, A. C. (2013). Small and medium-sized enterprises financing: A review of literature. *International Journal of Business and Management*, *8*(14), 36–54. doi: 10.5539/ijbm.v8n14p36

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: The case of Jordan. *International Journal of Managerial Finance*, *8*(2), 155–179. doi: 10.1108/17439131211216620

Acs, Z. J., & Audretsch, D. B. (1993). *Small firms and entrepreneurship: An east-west perspective* (1st ed.). Cambridge: Cambridge University Press.

Afrifa, G., & Tingbani, I. (2017). Working capital management, cash flow and SMEs' performance. *MPRA*. Retrieved 23.06.2023, from `https://mpra.ub.uni-muenchen.de/82894/`

Afrifa, G. A., Tauringana, V., & Tingbani, I. (2014). Working capital management and performance of listed SMEs. *Journal of Small Business & Entrepreneurship*, *27*(6), 557–578. doi: 10.1080/08276331.2015.1114351

Afza, T., & Nazir, M. S. (2008). Working capital approaches and firm's returns in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, *1*, 25–36.

Agarwal, S., & Hauswald, R. (2010). Distance and private information in lending. *Review of Financial Studies*, *23*(7), 2757–2788. doi: 10.1093/rfs/hhq001

Aghion, P., Fally, T., & Scarpetta, S. (2007). Credit constraints as a barrier to the entry and post-entry growth of firms. *Economic Policy*, *22*(52), 732–779. doi: 10.1111/j.1468-0327.2007.00190.x

Agrawal, A., Catalini, C., & Goldfarb, A. (2011). *The geography of crowdfunding.* NBER Working Papers (No. 16820). Cambridge, MA: National Bureau of Economic Research. doi: 10.3386/w16820

Agyei-Mensah, B. (2011). Financial management practices of small firms in Ghana: An empirical study. *African Journal of Business Management*, *5*(10), 3781–3793.

Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in equity crowdfunding. *Entrepreneurship Theory and Practice*, *39*(4), 955–980. doi: 10.1111/etap.12157

Aitamurto, T. (2011). The impact of crowdfunding on journalism. *Journalism Practice*, *5*(4), 429–445. doi: 10.1080/17512786.2010.551018

Aktas, N., Croci, E., & Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance*, *30*, 98–113. doi: 10.1016/j.jcorpfin.2014.12.008

Aldrich, H., & Auster, E. R. (1986). Even dwarfs started small: Liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, *8*, 165–198.

Alessandrini, P., Presbitero, A. F., & Zazzaro, A. (2009). Banks, distances and firms' financing constraints. *Review of Finance*, *13*(2), 261–307. doi: 10.1093/rof/rfn010

Allen, F., & Gale, D. (1995). A welfare comparison of intermediaries and financial markets in Germany and the US. *European Economic Review*, *39*(2), 179–209. doi: 10.1016/0014-2921(94)00095-H

Allison, T. H., Davis, B. C., Short, J. C., & Webb, J. W. (2015). Crowdfunding in a prosocial microlending environment: Examining the role of intrinsic versus extrinsic cues. *Entrepreneurship Theory and Practice*, *39*(1), 53–73. doi: 10.1111/etap.12108

Altig, D., Barrero, J. M., Bloom, N., Davis, S. J., Meyer, B., & Parker, N. (2022). Surveying business uncertainty. *Journal of Econometrics*, *231*(1), 282–303. doi: 10.1016/j.jeconom.2020.03.021

An, W., Rüling, C.-C., Zheng, X., & Zhang, J. (2020). Configurations of effectuation, causation, and bricolage: Implications for firm growth paths. *Small Business Economics*, *54*(3), 843–864. doi: 10.1007/s11187-019-00155-8

Ang, J. S. (1991). Small business uniqueness and the theory of financial management. *The Journal of Entrepreneurial Finance*, *1*(1), 11–13. doi: 10.57229/2373-1761.1108

Ang, J. S. (1992). On the theory of finance for privately held firms. *Journal of Small Business Finance*, *1*(3), 185–203.

Angelini, P., Di Salvo, R., & Ferri, G. (1998). Availability and cost of credit for small businesses: Customer relationships and credit cooperatives. *Journal of Banking & Finance*, *22*(6-8), 925–954. doi: 10.1016/S0378-4266(98)00008-9

Angerer, M., Brem, A., Kraus, S., & Peter, A. (2017). Start-up funding via equity crowdfunding in Germany – A qualitative analysis of success factors. *The Journal of Entrpreneurial Finance*, *19*(1), 1–34. doi: 10.57229/2373-1761.1290

Angori, G., Aristei, D., & Gallo, M. (2019). Lending technologies, banking relationships, and firms' access to credit in Italy: The role of firm size. *Applied Economics*, *51*(58), 6139–6170. doi: 10.1080/00036846.2019.1613503

Anshari, M., Arine, M. A., Nurhidayah, N., Aziyah, H., & Salleh, M. H. A. (2021). Factors

influencing individual in adopting ewallet. *Journal of Financial Services Marketing*, *26*(1), 10–23. doi: 10.1057/s41264-020-00079-5

Anton, S., & Afloarei Nucu, A. (2021). The impact of working capital management on firm profitability: Empirical evidence from the Polish listed firms. *Journal of Risk and Financial Management*, *14*(1), 9. doi: 10.3390/jrfm14010009

Antonenko, P. D., Lee, B. R., & Kleinheksel, A. J. (2014). Trends in the crowdfunding of educational technology startups. *TechTrends*, *58*(6), 36–41. doi: 10.1007/s11528-014-0801-2

Appuhami, B. A. R. (2008). The impact of firm's capital expenditure on working capital management: An empirical study across industries in Thailand. *International Management Review*, *4*(1), 11–24.

Aragón-Sánchez, A., & Sánchez-Marín, G. (2005). Strategic orientation, management characteristics, and performance: A study of Spanish SMEs. *Journal of Small Business Management*, *43*(3), 287–308. doi: 10.1111/j.1540-627X.2005.00138.x

Archer, S. H., & Faerber, L. G. (1966). Firm size and the cost of externally secured equity capital. *The Journal of Finance*, *21*(1), 69–83. doi: 10.1111/j.1540-6261.1966.tb02955.x

Arena, M. P., & Dewally, M. (2012). Firm location and corporate debt. *Journal of Banking & Finance*, *36*(4), 1079–1092. doi: 10.1016/j.jbankfin.2011.11.003

Arthur, D., & Vassilvitskii, S. (2006). *k-means++: The advantages of careful seeding.* Stanford, CA: Stanford University.

Artola, C., & Genre, V. (2011). *Euro area SMEs under financial constraints: Belief or reality?* CESifo Working Paper (No. 3650). München: CESifo GmbH.

Audretsch, D. B., & Elston, J. A. (1997). Financing the German Mittelstand. *Small Business Economics*, *9*(2), 97–110. doi: 10.1023/A:1007963621438

Audretsch, D. B., & Guenther, C. (2023). SME research: SMEs' internationalization and collaborative innovation as two central topics in the field. *Journal of Business Economics*. doi: 10.1007/s11573-023-01152-w

Backman, M., & Wallin, T. (2018). Access to banks and external capital acquisition: Perceived innovation obstacles. *The Annals of Regional Science*, *61*(1), 161–187. doi: 10.1007/s00168-018-0863-8

Baker, H. K., Kumar, S., & Singh, H. P. (2019). Working capital management: Evidence from Indian SMEs. *Small Enterprise Research*, *26*(2), 143–163. doi: 10.1080/13215906.2019.1624386

Baker, T., & Dellaert, B. (2018). Regulating robo advice across the financial services industry. *Iowa Law Review*, *103*, 713–750. doi: 10.2139/ssrn.2932189

Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2010). Working capital management in SMEs. *Accounting & Finance*, *50*(3), 511–527. doi: 10.1111/j.1467-629X.2009.00331.x

Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2012). How does working capital management affect the profitability of Spanish SMEs? *Small Business Economics*, *39*(2), 517–529. doi: 10.1007/s11187-011-9317-8

Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, *67*(3), 332–338. doi: 10.1016/j.jbusres.2013.01.016

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. doi: 10.1177/014920639101700108

Bartoli, F., Ferri, G., Murro, P., & Rotondi, Z. (2013). SME financing and the choice of lending technology in Italy: Complementarity or substitutability? *Journal of Banking & Finance*, *37*(12), 5476–5485. doi: 10.1016/j.jbankfin.2013.08.007

Basurto, X., & Speer, J. (2012). Structuring the calibration of qualitative data as sets for Qualitative Comparative Analysis (QCA). *Field Methods*, *24*(2), 155–174. doi: 10.1177/1525822X11433998

Becchetti, L., & Trovato, G. (2002). The determinants of growth for small and medium sized firms. The role of the availability of external finance. *Small Business Economics*, *19*(4), 291–306. doi: 10.1023/A:1019678429111

Beck, T., Degryse, H., de Haas, R., & van Horen, N. (2018). When arm's length is too far: Relationship banking over the credit cycle. *Journal of Financial Economics*, *127*(1), 174–196. doi: 10.1016/j.jfineco.2017.11.007

Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, *30*(11), 2931–2943. doi: 10.1016/j.jbankfin.2006.05.009

Beck, T., Demirguc-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? *The Journal of Finance*, *60*(1), 137–177. doi: 10.1111/j.1540-6261.2005.00727.x

Beck, T., Demirguc-Kunt, A., & Maksimovic, V. (2008). Financing patterns around the world: Are small firms different? *Journal of Financial Economics*, *89*(3), 467–487. doi: 10.1016/

j.jfineco.2007.10.005

Beck, T., Demirguc-Kunt, A., & Pería, M. S. M. (2011). Bank financing for SMEs: Evidence across countries and bank ownership types. *Journal of Financial Services Research*, *39*(1-2), 35–54. doi: 10.1007/s10693-010-0085-4

Bedford, D. S., & Sandelin, M. (2015). Investigating management control configurations using qualitative comparative analysis: An overview and guidelines for application. *Journal of Management Control*, *26*(1), 5–26. doi: 10.1007/s00187-015-0204-3

Behr, P., Norden, L., & Noth, F. (2013). Financial constraints of private firms and bank lending behavior. *Journal of Banking & Finance*, *37*(9), 3472–3485. doi: 10.1016/j.jbankfin.2013.05.018

Belanche, D., Casaló, L. V., & Flavián, C. (2019). Artificial intelligence in fintech: Understanding robo-advisors adoption among customers. *Industrial Management & Data Systems*, *119*(7), 1411–1430. doi: 10.1108/IMDS-08-2018-0368

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2010). *Crowdfunding: An industrial organization perspective.* Louvain-la-Neuve: Louvain School of Management, Université catholique de Louvain.

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2013). Individual crowdfunding practices. *Venture Capital*, *15*(4), 313–333. doi: 10.1080/13691066.2013.785151

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2014). Crowdfunding: Tapping the right crowd. *Journal of Business Venturing*, *29*(5), 585–609. doi: 10.1016/j.jbusvent.2013.07.003

Bellucci, A., Borisov, A., Giombini, G., & Zazzaro, A. (2019). Collateralization and distance. *Journal of Banking & Finance*, *100*, 205–217. doi: 10.1016/j.jbankfin.2019.01.011

Bellucci, A., Borisov, A., & Zazzaro, A. (2010). Does gender matter in bank–firm relationships? Evidence from small business lending. *Journal of Banking & Finance*, *34*(12), 2968–2984. doi: 10.1016/j.jbankfin.2010.07.008

Bellucci, A., Borisov, A., & Zazzaro, A. (2013). Do banks price discriminate spatially? Evidence from small business lending in local credit markets. *Journal of Banking & Finance*, *37*(11), 4183–4197. doi: 10.1016/j.jbankfin.2013.06.009

Bendel, D., Demary, M., & Voigtländer, M. (2016). *Entwicklung der Unternehmensfinanzierung in Deutschland.* Vierteljahresschrift zur Empirischen Wirtschaftsforschung (No. 43). Köln: Institut der deutschen Wirtschaft Köln.

Ben-Nasr, H. (2016). State and foreign ownership and the value of working capital management.

Journal of Corporate Finance, *41*, 217–240. doi: 10.1016/j.jcorpfin.2016.09.002

Berger, A. N., & Black, L. K. (2011). Bank size, lending technologies, and small business finance. *Journal of Banking & Finance*, *35*(3), 724–735. doi: 10.1016/j.jbankfin.2010.09.004

Berger, A. N., Bouwman, C. H. S., & Kim, D. (2017). Small bank comparative advantages in alleviating financial constraints and providing liquidity insurance over time. *Review of Financial Studies*, *30*(10), 3416–3454. doi: 10.1093/rfs/hhx038

Berger, A. N., & DeYoung, R. (2001). The effects of geographic expansion on bank efficiency. *Journal of Financial Services Research*, *19*(2/3), 163–184. doi: 10.1023/A:1011159405433

Berger, A. N., Goulding, W., & Rice, T. (2014). Do small businesses still prefer community banks? *Journal of Banking & Finance*, *44*, 264–278. doi: 10.1016/j.jbankfin.2014.03.016

Berger, A. N., Klapper, L. F., & Udell, G. F. (2001). The ability of banks to lend to informationally opaque small businesses. *Journal of Banking & Finance*, *25*(12), 2127–2167. doi: 10.1016/S0378-4266(01)00189-3

Berger, A. N., Miller, N. H., Petersen, M. A., Rajan, R. G., & Stein, J. C. (2005). Does function follow organizational form? Evidence from the lending practices of large and small banks. *Journal of Financial Economics*, *76*(2), 237–269. doi: 10.1016/j.jfineco.2004.06.003

Berger, A. N., & Udell, G. F. (1990). Collateral, loan quality and bank risk. *Journal of Monetary Economics*, *25*(1), 21–42. doi: 10.1016/0304-3932(90)90042-3

Berger, A. N., & Udell, G. F. (1995). Relationship lending and lines of credit in small firm finance. *The Journal of Business*, *68*(3), 351–381. doi: 10.1086/296668

Berger, A. N., & Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance*, *22*(6-8), 613–673. doi: 10.1016/S0378-4266(98)00038-7

Berger, A. N., & Udell, G. F. (2002). Small business credit availability and relationship lending: The importance of bank organisational structure. *The Economic Journal*, *112*(477), F32-F53. doi: 10.1111/1468-0297.00682

Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance*, *30*(11), 2945–2966. doi: 10.1016/j.jbankfin.2006.05.008

Berraies, S., Ben Yahia, K., & Hannachi, M. (2017). Identifying the effects of perceived values of mobile banking applications on customers. *International Journal of Bank Marketing*, *35*(6), 1018–1038. doi: 10.1108/IJBM-09-2016-0137

Bhattacharya, A. K., Coleman, J. L., & Brace, G. (1995). Re-positioning the supplier: An SME perspective. *Production Planning & Control*, *6*(3), 218–226. doi: 10.1080/

09537289508930274

Bhattacharya, S., & Thakor, A. V. (1993). Contemporary banking theory. *Journal of Financial Intermediation*, *3*(1), 2–50. doi: 10.1006/jfin.1993.1001

Bi, S., Liu, Z., & Usman, K. (2017). The influence of online information on investing decisions of reward-based crowdfunding. *Journal of Business Research*, *71*, 10–18. doi: 10.1016/j.jbusres.2016.10.001

Blanchflower, D. G., Levine, P. B., & Zimmerman, D. J. (2003). Discrimination in the small-business credit market. *Review of Economics and Statistics*, *85*(4), 930–943. doi: 10.1162/003465303772815835

Blinder, A. S., & Maccini, L. J. (1991). The resurgence of inventory research: What have we learned? *Journal of Economic Surveys*, *5*(4), 291–328. doi: 10.1111/j.1467-6419.1991.tb00138.x

Block, J. H., Colombo, M. G., Cumming, D. J., & Vismara, S. (2018). New players in entrepreneurial finance and why they are there. *Small Business Economics*, *50*(2), 239–250. doi: 10.1007/s11187-016-9826-6

Block, J. H., Hornuf, L., & Moritz, A. (2018). Which updates during an equity crowdfunding campaign increase crowd participation? *Small Business Economics*, *50*(1), 3–27. doi: 10.1007/s11187-017-9876-4

Bollaert, H., Leboeuf, G., & Schwienbacher, A. (2020). The narcissism of crowdfunding entrepreneurs. *Small Business Economics*, *55*(1), 57–76. doi: 10.1007/s11187-019-00145-w

Bonfim, D., Nogueira, G., & Ongena, S. (2021). "Sorry, we're closed": Bank branch closures, loan pricing, and information asymmetries. *Review of Finance*, *25*(4), 1211–1259. doi: 10.1093/rof/rfaa036

Boot, A. W. A. (2000). Relationship banking: What do we know? *Journal of Financial Intermediation*, *9*(1), 7–25. doi: 10.1006/jfin.2000.0282

Boot, A. W. A., & Thakor, A. V. (1994). Moral hazard and secured lending in an infinitely repeated credit market game. *International Economic Review*, *35*(4), 899–920. doi: 10.2307/2527003

Botoc, C., & Anton, S. G. (2017). Is profitability driven by working capital management? Evidence for high-growth firms from emerging Europe. *Journal of Business Economics and Management*, *18*(6), 1135–1155. doi: 10.3846/16111699.2017.1402362

Bottazzi, G., Secchi, A., & Tamagni, F. (2014). Financial constraints and firm dynamics. *Small Business Economics*, *42*(1), 99–116. doi: 10.1007/s11187-012-9465-5

Bouncken, R. B., Komorek, M., & Kraus, S. (2015). Crowdfunding: The current state of research. *International Business & Economics Research Journal (IBER)*, *14*(3), 407–416. doi: 10.19030/iber.v14i3.9206

Boylan, D. H., Nesson, D., & Philipps, J. (2018). Understanding crowdfunding for business funding: A legal and platform review. *Journal of Accounting & Organizational Change*, *14*(3), 273–290. doi: 10.1108/JAOC-10-2017-0098

Boyle, R. D., & Desai, H. B. (1991). Turnaround strategies for small firms. *Journal of Small Business Management*, *29*(3), 33–42.

Bragoli, D., Burlina, C., Cortelezzi, F., & Marseguerra, G. (2022). Banking proximity and firm performance. The role of small businesses, community banks and the credit cycle. *Applied Economics*, *54*(57), 6605–6624. doi: 10.1080/00036846.2022.2073959

Brem, A., & Wassong, N. (2014). Wer investiert warum? Eine Analyse von Investment-Entscheidungen bei Crowdfunding-Projekten. *Zeitschrift für KMU & Entrepreneurship*, *62*(1), 31–56.

Brevoort, K. P., & Hannan, T. H. (2006). Commercial lending and distance: Evidence from community reinvestment act data. *Journal of Money, Credit, and Banking*, *38*(8), 1991–2012. doi: 10.1353/mcb.2007.0000

Brick, I. E., & Palia, D. (2007). Evidence of jointness in the terms of relationship lending. *Journal of Financial Intermediation*, *16*(3), 452–476. doi: 10.1016/j.jfi.2007.01.001

British Business Bank. (2021). *Small business finance markets 2020/21.* Sheffield: British Business Bank.

Brito, P., & Mello, A. S. (1995). Financial constraints and firm post-entry performance. *International Journal of Industrial Organization*, *13*(4), 543–565. doi: 10.1016/0167-7187(95)00504-8

Bundesregierung. (2015). *Rede von Bundeskanzlerin Merkel anlässlich des Tags des deutschen Familienunternehmens am 12. Juni 2015.* Berlin. Retrieved 20.06.2023, from `https://www.bundesregierung.de/breg-de/aktuelles/rede-von-bundeskanzlerin-merkel-anlaesslich-des-tags-des-deutschen-familienunternehmens-am-12-juni-2015-443596`

Burtch, G., Ghose, A., & Wattal, S. (2013). An empirical examination of the antecedents and consequences of contribution patterns in crowd-funded markets. *Information Systems Research*, *24*(3), 499–519. doi: 10.1287/isre.1120.0468

Butkowski, O., Hoffmann, M., Nielen, S., & Schröder, C. (2019). *Einflüsse auf die KMU*

Finanzierung: Ein Vergleich ausgewählter Euroländer. IfM-Materialien (No. 275). Bonn: IfM Bonn.

Butticè, V., Colombo, M. G., & Wright, M. (2017). Serial crowdfunding, social capital, and project success. *Entrepreneurship Theory and Practice*, *41*(2), 183–207. doi: 10.1111/etap.12271

Cabral, L. M. B., & Mata, J. (2003). On the evolution of the firm size distribution: Facts and theory. *American Economic Review*, *93*(4), 1075–1090. doi: 10.1257/000282803769206205

Cai, W., Polzin, F., & Stam, E. (2021). Crowdfunding and social capital: A systematic review using a dynamic perspective. *Technological Forecasting and Social Change*, *162*, 120412. doi: 10.1016/j.techfore.2020.120412

Caldeira, M. M., & Ward, J. M. (2003). Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises. *European Journal of Information Systems*, *12*(2), 127–141. doi: 10.1057/palgrave.ejis.3000454

Calic, G., & Mosakowski, E. (2016). Kicking off social entrepreneurship: How a sustainability orientation influences crowdfunding success. *Journal of Management Studies*, *53*(5), 738–767. doi: 10.1111/joms.12201

Cambridge Centre for Alternative Finance. (2021). *The 2nd global alternative finance market benchmarking report.* Cambrigde: Cambridge Centre for Alternative Finance. Retrieved 28.06.2023, from `https://www.jbs.cam.ac.uk/wp-content/uploads/2021/06/ccaf-2021-06-report-2nd-global-alternative-finance-benchmarking-study-report.pdf`

Cappa, F., Pinelli, M., Maiolini, R., & Leone, M. I. (2021). "Pledge" me your ears! The role of narratives and narrator experience in explaining crowdfunding success. *Small Business Economics*, *57*(2), 953–973. doi: 10.1007/s11187-020-00334-y

Carling, K., & Lundberg, S. (2005). Asymmetric information and distance: An empirical assessment of geographical credit rationing. *Journal of Economics and Business*, *57*(1), 39–59. doi: 10.1016/j.jeconbus.2004.07.002

Carpenter, R. E., & Petersen, B. C. (2002a). Capital market imperfections, high–tech investment, and new equity financing. *The Economic Journal*, *112*(477), F54-F72. doi: 10.1111/1468-0297.00683

Carpenter, R. E., & Petersen, B. C. (2002b). Is the growth of small firms constrained by internal finance? *Review of Economics and Statistics*, *84*(2), 298–309. doi: 10.1162/

003465302317411541

Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing*, *19*(2), 261–283. doi: 10.1016/S0883-9026(03)00029-6

Cenni, S., Monferrà, S., Salotti, V., Sangiorgi, M., & Torluccio, G. (2015). Credit rationing and relationship lending. Does firm size matter? *Journal of Banking & Finance*, *53*, 249–265. doi: 10.1016/j.jbankfin.2014.12.010

Cerqueiro, G., Degryse, H., & Ongena, S. (2009). Distance, bank organizational structure, and lending decisions. In P. Alessandrini (Ed.), *The changing geography of banking and finance* (pp. 57–74). Heidelberg: Springer.

Chan, C. S. R., & Parhankangas, A. (2017). Crowdfunding innovative ideas: How incremental and radical innovativeness influence funding outcomes. *Entrepreneurship Theory and Practice*, *41*(2), 237–263. doi: 10.1111/etap.12268

Chang, C.-C. (2018). Cash conversion cycle and corporate performance: Global evidence. *International Review of Economics & Finance*, *56*, 568–581. doi: 10.1016/j.iref.2017.12.014

Chawla, D., & Joshi, H. (2017). Consumer perspectives about mobile banking adoption in India - A cluster analysis. *International Journal of Bank Marketing*, *35*(4), 616–636. doi: 10.1108/IJBM-03-2016-0037

Chen, C., & Kieschnick, R. (2018). Bank credit and corporate working capital management. *Journal of Corporate Finance*, *48*, 579–596. doi: 10.1016/j.jcorpfin.2017.12.013

Chen, S., Doerr, S., Frost, J., Gambacorta, L., & Shin, H. S. (2023). The fintech gender gap. *Journal of Financial Intermediation*, *54*, 101026. doi: 10.1016/j.jfi.2023.101026

Chiou, J.-R., Cheng, L., & Wu, H.-W. (2006). The determinants of working capital management. *The American Academy of Business Journal*, *10*(1), 149–155.

Chittenden, F., Hall, G., & Hutchinson, P. (1996). Small firm growth, access to capital markets and financial structure: Review of issues and an empirical investigation. *Small Business Economics*, *8*(1), 59–67. doi: 10.1007/BF00391976

Chiu, I. H.-Y. (2016). Fintech and disruptive business models in financial products, intermediation and markets — policy implications for financial regulators. *Journal of Technology Law and Policy*, *21*(1), 55–112.

Cholakova, M., & Clarysse, B. (2015). Does the possibility to make equity investments in crowdfunding projects crowd out reward–based investments? *Entrepreneurship Theory and Practice*, *39*(1), 145–172. doi: 10.1111/etap.12139

Clatworthy, J., Buick, D., Hankins, M., Weinman, J., & Horne, R. (2005). The use and reporting of cluster analysis in health psychology: A review. *British Journal of Health Psychology*, *10*(Pt 3), 329–358. doi: 10.1348/135910705X25697

Clemes, M. D., Gan, C., & Zhang, D. (2010). Customer switching behaviour in the Chinese retail banking industry. *International Journal of Bank Marketing*, *28*(7), 519–546. doi: 10.1108/02652321011085185

Cole, R. A. (1998). The importance of relationships to the availability of credit. *Journal of Banking & Finance*, *22*(6-8), 959–977. doi: 10.1016/S0378-4266(98)00007-7

Cole, R. A., Cumming, D. J., & Taylor, J. (2019). Does fintech compete with or complement bank finance? *SSRN Electronic Journal*. doi: 10.2139/ssrn.3302975

Cole, R. A., Goldberg, L. G., & White, L. J. (2004). Cookie cutter vs. character: The micro structure of small business lending by large and small banks. *The Journal of Financial and Quantitative Analysis*, *39*(2), 227–251. doi: 10.1017/S0022109000003057

Cole, R. A., & Sokolyk, T. (2016). Who needs credit and who gets credit? Evidence from the surveys of small business finances. *Journal of Financial Stability*, *24*, 40–60. doi: 10.1016/j.jfs.2016.04.002

Colombo, M. G., Franzoni, C., & Rossi-Lamastra, C. (2015). Internal social capital and the attraction of early contributions in crowdfunding. *Entrepreneurship Theory and Practice*, *39*(1), 75–100. doi: 10.1111/etap.12118

Corrocher, N. (2006). Internet adoption in Italian banks: An empirical investigation. *Research Policy*, *35*(4), 533–544. doi: 10.1016/j.respol.2006.02.004

Cosh, A., Cumming, D., & Hughes, A. (2009). Outside enterpreneurial capital. *The Economic Journal*, *119*(540), 1494–1533. doi: 10.1111/j.1468-0297.2009.02270.x

Cotugno, M., Monferrá, S., & Sampagnaro, G. (2013). Relationship lending, hierarchical distance and credit tightening: Evidence from the financial crisis. *Journal of Banking & Finance*, *37*(5), 1372–1385. doi: 10.1016/j.jbankfin.2012.07.026

Courtney, C., Dutta, S., & Li, Y. (2017). Resolving information asymmetry: Signaling, endorsement, and crowdfunding success. *Entrepreneurship Theory and Practice*, *41*(2), 265–290. doi: 10.1111/etap.12267

Craig, S. G., & Hardee, P. (2007). The impact of bank consolidation on small business credit availability. *Journal of Banking & Finance*, *31*(4), 1237–1263. doi: 10.1016/j.jbankfin .2006.10.009

Crawford, V. P., & Sobel, J. (1982). Strategic information transmission. *Econometrica*, *50*(6),

1431–1451. doi: 10.2307/1913390

CrowdfundingHub. (2021). *Current state of crowdfunding in Europe.* Amsterdam: CrowdfundingHub. Retrieved 28.06.2023, from `https://www.crowdfundinghub.eu/wp-content/uploads/2021/09/CrowdfundingHub-Current-State-of-Crowdfunding-in-Europe-2021.pdf`

Crowdinvest Insight GmbH. (2020). *Crowdinvest Marktreport 2020.* Berlin: Crowdinvest Insight GmbH. Retrieved 28.06.2023, from `https://www.crowdinvest.de/Crowdinvest_Marktreport_2020_Deutschland_crowdinvest.de.pdf`

Dash, M., & Ravipati, R. (2009). A liquidity-profitability trade-off model for working capital management. *SSRN Electronic Journal*. doi: 10.2139/ssrn.1408722

Davis, B. C., Hmieleski, K. M., Webb, J. W., & Coombs, J. E. (2017). Funders' positive affective reactions to entrepreneurs' crowdfunding pitches: The influence of perceived product creativity and entrepreneurial passion. *Journal of Business Venturing*, *32*(1), 90–106. doi: 10.1016/j.jbusvent.2016.10.006

de Blasio, G. (2009). Distance and internet banking. In P. Alessandrini (Ed.), *The changing geography of banking and finance* (pp. 109–130). Heidelberg: Springer.

de Buysere, K., Gajda, O., Kleverlaan, R., & Marom, D. (2012). *A framework for European crowdfunding* (1st ed.). Brussels: European Crowdfunding Network.

Degryse, H., & Ongena, S. (2005). Distance, lending relationships, and competition. *The Journal of Finance*, *60*(1), 231–266. doi: 10.1111/j.1540-6261.2005.00729.x

Degryse, H., & van Cayseele, P. (2000). Relationship lending within a bank-based system: Evidence from European small business data. *Journal of Financial Intermediation*, *9*(1), 90–109. doi: 10.1006/jfin.1999.0278

de Haas, R., & van Horen, N. (2013). Running for the exit? International bank lending during a financial crisis. *Review of Financial Studies*, *26*(1), 244–285. doi: 10.1093/rfs/hhs113

de Kok, J., & Uhlaner, L. M. (2001). Organization context and human resource management in the small firm. *Small Business Economics*, *17*(4), 273–291. doi: 10.1023/A:1012238224409

de La Torre, A., Martínez Pería, M. S., & Schmukler, S. L. (2010). Bank involvement with SMEs: Beyond relationship lending. *Journal of Banking & Finance*, *34*(9), 2280–2293. doi: 10.1016/j.jbankfin.2010.02.014

Deloitte. (2018). *Crowdlending in KMU 2018.* München: Deloitte. Retrieved 24.06.2023, from `https://www2.deloitte.com/content/dam/Deloitte/de/Documents/`

financial-services/Deloitte_Crowdlending_V2c_safe.pdf

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance & Accounting*, *30*(3-4), 573–588. doi: 10.1111/1468-5957.00008

Demirguc-Kunt, A., & Maksimovic, V. (2001). *Firms as financial intermediaries: Evidence from trade credit data.* Policy Research Working Paper (No. 2696). Washington DC.: The World Bank. doi: 10.1596/1813-9450-2696

de Roure, C., Pelizzon, L., & Thakor, A. (2022). P2P lenders versus banks: Cream skimming or bottom fishing? *The Review of Corporate Finance Studies*, *11*(2), 213–262. doi: 10.1093/rcfs/cfab026

Deutsche Bundesbank. (2020). *Bankenstatistik.* Frankfurt: Deutsche Bundesbank. Retrieved 01.06.2023, from https://www.bundesbank.de/resource/blob/650638/31f0e833bc6c1bd72356752c41b69dd9/mL/i014449-data.pdf

Deutsche Bundesbank. (2022). *Bankstellenbericht 2021: Entwicklung des Bankstellennetzes im Jahr 2021.* Frankfurt: Deutsche Bundesbank.

Deutscher Mittelstandsbund. (2023). *Arbeit & Bildung.* Düsseldorf: Deutscher Mittelstandsbund. Retrieved 02.06.2023, from https://www.mittelstandsbund.de/themen/arbeit-bildung

Dewatripont, M., & Maskin, E. (1995). Credit and efficiency in centralized and decentralized economies. *The Review of Economic Studies*, *62*(4), 541–555. doi: 10.2307/2298076

DeYoung, R., Glennon, D., & Nigro, P. (2008). Borrower–lender distance, credit scoring, and loan performance: Evidence from informational-opaque small business borrowers. *Journal of Financial Intermediation*, *17*(1), 113–143. doi: 10.1016/j.jfi.2007.07.002

Di Bonaccorsi Patti, E., & Gobbi, G. (2001). The changing structure of local credit markets: Are small businesses special? *Journal of Banking & Finance*, *25*(12), 2209–2237. doi: 10.1016/S0378-4266(01)00191-1

Di Bonaccorsi Patti, E., Gobbi, G., & Mistrulli, P. E. (2004). *The interaction between face-to-face and electronic delivery: The case of the Italian banking industry.* Termi di discussione del Servizio Studi (No. 508). Rome: Banca d'Italia.

Dillman, D. A. (1978). *Mail and telephone surveys: The total design method.* New York: Wiley.

Ding, S., Guariglia, A., & Knight, J. (2013). Investment and financing constraints in China: Does working capital management make a difference? *Journal of Banking & Finance*, *37*(5), 1490–1507. doi: 10.1016/j.jbankfin.2012.03.025

Douglas, E. J., Shepherd, D. A., & Prentice, C. (2020). Using fuzzy-set qualitative comparative analysis for a finer-grained understanding of entrepreneurship. *Journal of Business Venturing*, *35*(1), 105970. doi: 10.1016/j.jbusvent.2019.105970

Drucker, P. F. (2015). *Innovation and entrepreneurship: Practice and principles.* Abingdon: Routledge.

Duane, A., O'Reilly, P., & Andreev, P. (2014). Realising m-payments: Modelling consumers' willingness to m-pay using smart phones. *Behaviour & Information Technology*, *33*(4), 318–334. doi: 10.1080/0144929X.2012.745608

Ducas, E., & Wilner, A. (2017). The security and financial implications of blockchain technologies: Regulating emerging technologies in Canada. *International Journal: Canada's Journal of Global Policy Analysis*, *72*(4), 538–562. doi: 10.1177/0020702017741909

Duqi, A., Tomaselli, A., & Torluccio, G. (2018). Is relationship lending still a mixed blessing? A review of advantages and disadvantages for lenders and borrowers. *Journal of Economic Surveys*, *32*(5), 1446–1482. doi: 10.1111/joes.12251

Duquerroy, A., Mazet-Sonilhac, C., Mésonnier, J.-S., & Paravisini, D. (2022). *Bank local specialization.* SciencesPo Discussion Paper (No. 2022-06). Paris: Institut d'études politiques de Paris.

Ebben, J. J., & Johnson, A. C. (2006). Bootstrapping in small firms: An empirical analysis of change over time. *Journal of Business Venturing*, *21*(6), 851–865. doi: 10.1016/j.jbusvent .2005.06.007

Ebben, J. J., & Johnson, A. C. (2011). Cash conversion cycle management in small firms: Relationships with liquidity, invested capital, and firm performance. *Journal of Small Business & Entrepreneurship*, *24*(3), 381–396. doi: 10.1080/08276331.2011.10593545

Edmondson, A. C., & Mcmanus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, *32*(4), 1246–1264. doi: 10.5465/amr.2007.26586086

Eickhoff, M., Muntermann, J., & Weinrich, T. (2018). *What do fintechs actually do? A taxonomy of fintech business models.* Göttingen: University of Goettingen.

Ek, R., & Guerin, S. (2011). Is there a right level of working capital? *Journal of Corporate Treasury Management*, *4*(2), 137–149.

Elitzur, R., & Solodoha, E. (2021). Does gender matter? Evidence from crowdfunding. *Journal of Business Venturing Insights*, *16*, e00268. doi: 10.1016/j.jbvi.2021.e00268

Eljelly, A. M. (2004). Liquidity – profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, *14*(2), 48–61. doi: 10.1108/

10569210480000179

Elsas, R., & Krahnen, J. P. (1998). Is relationship lending special? Evidence from credit-file data in Germany. *Journal of Banking & Finance*, *22*(10-11), 1283–1316. doi: 10.1016/S0378-4266(98)00063-6

Emery, G. W. (1984). A pure financial explanation for trade credit. *The Journal of Financial and Quantitative Analysis*, *19*(3), 271–285. doi: 10.2307/2331090

Emery, G. W. (1987). An optimal financial response to variable demand. *The Journal of Financial and Quantitative Analysis*, *22*(2), 209–225. doi: 10.2307/2330713

Enqvist, J., Graham, M., & Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. *Research in International Business and Finance*, *32*, 36–49. doi: 10.1016/j.ribaf.2014.03.005

European Central Bank. (2022). *Survey on the access to finance of enterprises.* Frankfurt: European Central Bank.

European Commission. (2020). *User guide to the SME definition.* Luxembourg: European Union. doi: 10.2873/255862

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*(3), 272–299. doi: 10.1037/1082-989X.4.3.272

Fazzari, S. M., Hubbard, R. G., Petersen, B. C., Blinder, A. S., & Poterba, J. M. (1988). Financing constraints and corporate investment. *Brookings Papers on Economic Activity*, *1988*(1), 141–206. doi: 10.2307/2534426

Fazzari, S. M., & Petersen, B. C. (1993). Working capital and fixed investment: New evidence on financing constraints. *The RAND Journal of Economics*, *24*(3), 328–342. doi: 10.2307/2555961

Fiegenbaum, A., & Karnani, A. (1991). Output flexibility - A competitive advantage for small firms. *Strategic Management Journal*, *12*(2), 101–114. doi: 10.1002/smj.4250120203

Filbeck, G., & Krueger, T. M. (2005). An analysis of working capital management results across industries. *American Journal of Business*, *20*(2), 11–20. doi: 10.1108/19355181200500007

Filbeck, G., & Lee, S. (2000). Financial management techniques in family businesses. *Family Business Review*, *13*(3), 201–216. doi: 10.1111/j.1741-6248.2000.00201.x

Finder Research. (2022). *How many Brits use challenger banks?* London: Finder Research. Retrieved 31.01.2023, from `https://www.finder.com/uk/digital-banking-adoption#how-many-people-have-a-digital-bank-account-in-the-uk`

Fiordelisi, F., Monferrà, S., & Sampagnaro, G. (2014). Relationship lending and credit quality. *Journal of Financial Services Research*, *46*(3), 295–315. doi: 10.1007/s10693-013-0176-0

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, *54*(2), 393–420. doi: 10.5465/amj.2011.60263120

Flick, U. (2021). *Qualitative Sozialforschung: Eine Einführung* (10th ed.). Hamburg: Rowohlt Taschenbuch Verlag.

Flögel, F. (2018). Distance and modern banks' lending to SMEs: Ethnographic insights from a comparison of regional and large banks in Germany. *Journal of Economic Geography*, *18*(1), 35–57. doi: 10.1093/jeg/lbx017

Flögel, F., & Beckamp, M. (2020). Will fintech make regional banks superfluous for small firm finance? Observations from soft information–based lending in Germany. *Economic Notes*, *49*(2), e12159. doi: 10.1111/ecno.12159

Frydrych, D., Bock, A. J., Kinder, T., & Koeck, B. (2014). Exploring entrepreneurial legitimacy in reward-based crowdfunding. *Venture Capital*, *16*(3), 247–269. doi: 10.1080/13691066.2014.916512

Fu, J., & Mishra, M. (2022). Fintech in the time of Covid−19: Technological adoption during crises. *Journal of Financial Intermediation*, *50*, 100945. doi: 10.1016/j.jfi.2021.100945

Furnari, S., Crilly, D., Misangyi, V. F., Greckhamer, T., Fiss, P. C., & Aguilera, R. V. (2021). Capturing causal complexity: Heuristics for configurational theorizing. *Academy of Management Review*, *46*(4), 778–799. doi: 10.5465/amr.2019.0298

Gai, K., Qiu, M., & Sun, X. (2018). A survey on fintech. *Journal of Network and Computer Applications*, *103*, 262–273. doi: 10.1016/j.jnca.2017.10.011

Galak, J., Small, D., & Stephen, A. T. (2011). Microfinance decision making: A field study of prosocial lending. *Journal of Marketing Research*, *48*(SPL), 130–137. doi: 10.1509/jmkr.48.SPL.S130

Galli-Debicella, A. (2021). How SMEs compete against global giants through sustainable competitive advantages. *Journal of Small Business Strategy*, *31*(5), 13–21. doi: 10.53703/001c.29812

Gallo, M. A., & Vilaseca, A. (1996). Finance in family business. *Family Business Review*, *9*(4), 387–401. doi: 10.1111/j.1741-6248.1996.00387.x

Garcia-Teruel, P. J., & Martinez-Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, *3*(2), 164–177. doi:

10.1108/17439130710738718

Garri, I. (2019). *The effects of bank branch closures on credit relationships.* Termi di discussione del Servizio Studi (No. 1254). Rome: Banca d'Italia. doi: 10.32057/0.TD.2019.1254

Gärtner, S., & Flögel, F. (2017). Zur Bedeutung und Zukunft dezentraler Banken für die KMU-Finanzierung in Deutschland. *Zeitschrift für KMU & Entrepreneurship*, *65*(1/2), 41–60.

Gasse, Y. (1982). Elaborations on the psychology of the entrepreneur. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), *Encyclopedia of entrepreneurship* (pp. 209–233). Englewood Cliffs, NJ: Prentice-Hall.

Gelinas, R., & Bigras, Y. (2004). The characteristics and features of SMEs: Favorable or unfavorable to logistics integration? *Journal of Small Business Management*, *42*(3), 263–278. doi: 10.1111/j.1540-627X.2004.00111.x

Gerber, E. M., & Hui, J. (2013). Crowdfunding: Motivations and deterrents for participation. *ACM Transactions on Computer-Human Interaction*, *20*(6), 1–32. doi: 10.1145/2530540

Gerrard, P., & Barton Cunningham, J. (2004). Consumer switching behavior in the Asian banking market. *Journal of Services Marketing*, *18*(3), 215–223. doi: 10.1108/08876040410536512

GFL Makler- und Beratungsgesellschaft mbH. (2019). *Studie: Factoring bei KMU noch zu unbekannt.* Kirchzarten: Gesellschaften für Liquidität. Retrieved 01.06.2023, from `https://www.gfl-broker.de/2019/02/studie-factoring-bei-kmu-noch-zu-unbekannt/`

Gherhes, C., Williams, N., Vorley, T., & Vasconcelos, A. C. (2016). Distinguishing micro-businesses from SMEs: A systematic review of growth constraints. *Journal of Small Business and Enterprise Development*, *23*(4), 939–963. doi: 10.1108/JSBED-05-2016-0075

Giannetti, M., & Laeven, L. (2012). The flight home effect: Evidence from the syndicated loan market during financial crises. *Journal of Financial Economics*, *104*(1), 23–43. doi: 10.1016/j.jfineco.2011.12.006

Gibb, A. A. (2000). SME policy, academic research and the growth of ignorance, mythical concepts, myths, assumptions, rituals and confusions. *International Small Business Journal: Researching Entrepreneurship*, *18*(3), 13–35. doi: 10.1177/0266242600183001

Gimpel, H., Rau, D., & Röglinger, M. (2018). Understanding fintech start-ups – A taxonomy of consumer-oriented service offerings. *Electronic Markets*, *28*(3), 245–264. doi: 10.1007/s12525-017-0275-0

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive

research. *Organizational Research Methods*, *16*(1), 15–31. doi: 10.1177/1094428112452151

Giudici, G., Nava, R., Rossi Lamastra, C., & Verecondo, C. (2012). *Crowdfunding: The new frontier for financing entrepreneurship?* Milano: Politecnico di Milano.

Global Entrepreneurship Research Association. (2023). *Global entrepreneurship monitor.* London: Global Entrepreneurship Research Association. Retrieved 14.06.2023, from `https://www.gemconsortium.org/`

Gnan, L., Montemerlo, D., & Huse, M. (2015). Governance systems in family SMEs: The substitution effects between family councils and corporate governance mechanisms. *Journal of Small Business Management*, *53*(2), 355–381. doi: 10.1111/jsbm.12070

Goertz, G. (2006). *Social science concepts: A user's guide.* Princeton, NJ: Princeton University Press.

Goertz, G., & Mahoney, J. (2005). Two-level theories and fuzzy-set analysis. *Sociological Methods & Research*, *33*(4), 497–538. doi: 10.1177/0049124104266128

Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems*, *35*(1), 220–265. doi: 10.1080/07421222.2018.1440766

Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. *Journal of Business Economics*, *87*(5), 537–580. doi: 10.1007/s11573-017-0852-x

Gorbatai, A. D., & Nelson, L. (2015). Gender and the language of crowdfunding. *Academy of Management Proceedings*, *2015*(1), 15785. doi: 10.5465/ambpp.2015.15785abstract

Grablowsky, B. J. (1984). Financial management of inventory. *Journal of Small Business Management*, *22*(3), 59–65.

Grablowsky, B. J., & Burns, W. L. (1980). The application of capital allocation techniques by small business. *Journal of Small Business Management*, *18*(3), 50–58.

Grandon, E. E., & Pearson, J. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management*, *42*(1), 197–216. doi: 10.1016/j.im.2003.12.010

Greenbaum, S. I., Thakor, A. V., & Boot, A. W. A. (2015). *Contemporary financial intermediation* (3rd ed.). London: Academic Press.

Guercini, S., & Milanesi, M. (2016). Interaction approach and liabilities: A case analysis of start-up firms. *Journal of Business-to-Business Marketing*, *23*(4), 293–309. doi: 10.1080/

1051712X.2016.1250595

Guthmann, H. G., & Dougall, H. E. (1948). *Corporate financial policy* (2nd ed.). Hoboken, NJ: Prentice-Hall.

Haas, P., Blohm, I., & Leimeister, J. M. (2014). An empirical taxonomy of crowdfunding intermediaries. In M. D. Myers & D. W. Straub (Eds.), *Proceedings of the International Conference on Information Systems - Building a Better World through Information Systems.* Auckland, NZ: Association for Information Systems.

Haines, G., Riding, A., & Thomas, R. (1991). Small business bank shopping in Canada. *Journal of Banking & Finance*, *15*(6), 1041–1056. doi: 10.1016/0378-4266(91)90049-R

Hamilton, R. T., & Fox, M. A. (1998). The financing preferences of small firm owners. *International Journal of Entrepreneurial Behavior & Research*, *4*(3), 239–248. doi: 10.1108/13552559810235529

Hannan, M. T., & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review*, *49*(2), 149–164. doi: 10.2307/2095567

Harhoff, D., & Körting, T. (1998). Lending relationships in Germany – Empirical evidence from survey data. *Journal of Banking & Finance*, *22*(10-11), 1317–1353. doi: 10.1016/S0378-4266(98)00061-2

Harman, H. H. (1976). *Modern factor analysis* (3rd ed.). Chicago, IL: The University of Chicago Press.

Hawawini, G., Viallet, C., & Vora, A. (1986). Industry influence on corporate working capital decisions. *MIT Sloan Management Review*, *27*(4), 15–24.

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2007). *Dynamic capabilities: Understanding strategic change in organizations.* Malden, MA: Blackwell Publishing.

Hemer, J., Schneider, U., Dornbusch, F., & Frey, S. (2011). *Crowdfunding und andere Formen informeller Mikrofinanzierung in der Projekt- und Innovationsfinanzierung.* Stuttgart: Fraunhofer Verlag. ISI-Schriftenreihe Innovationspotenziale.

Hernández-Cánovas, G., & Martínez-Solano, P. (2010). Relationship lending and SME financing in the continental European bank-based system. *Small Business Economics*, *34*(4), 465–482. doi: 10.1007/s11187-008-9129-7

Herpfer, C., Mjøs, A., & Schmidt, C. (2023). The causal impact of distance on bank lending. *Management Science*, *69*(2), 723–740. doi: 10.1287/mnsc.2022.4346

Hill, M. D., Kelly, G. W., & Highfield, M. J. (2010). Net operating working capital behavior: A

first look. *Financial Management*, *39*(2), 783–805. doi: 10.1111/j.1755-053X.2010.01092.x

Hodula, M. (2022). Does fintech credit substitute for traditional credit? Evidence from 78 countries. *Finance Research Letters*, *46*, 102469. doi: 10.1016/j.frl.2021.102469

Hoegen, A., Steininger, D. M., & Veit, D. (2018). How do investors decide? An interdisciplinary review of decision-making in crowdfunding. *Electronic Markets*, *28*(3), 339–365. doi: 10.1007/s12525-017-0269-y

Howorth, C., Peel, M. J., & Wilson, N. (2003). An examination of the factors associated with bank switching in the U.K. small firm sector. *Small Business Economics*, *20*(4), 305–317. doi: 10.1023/A:1022963226621

Howorth, C., & Westhead, P. (2003). The focus of working capital management in UK small firms. *Management Accounting Research*, *14*(2), 94–111. doi: 10.1016/S1044-5005(03)00022-2

Hu, Z., Ding, S., Li, S., Chen, L., & Yang, S. (2019). Adoption intention of fintech services for bank users: An empirical examination with an extended technology acceptance model. *Symmetry*, *11*(3), 340. doi: 10.3390/sym11030340

Huang, S., Pickernell, D., Battisti, M., & Nguyen, T. (2022). Signalling entrepreneurs' credibility and project quality for crowdfunding success: Cases from the Kickstarter and Indiegogo environments. *Small Business Economics*, *58*, 1801–1821. doi: 10.1007/s11187-021-00477-6

Hughes, A. (1997). Finance for SMEs: A U.K. perspective. *Small Business Economics*, *9*(2), 151–168. doi: 10.1023/A:1007971823255

Hutchinson, J., & Xavier, A. (2006). Comparing the impact of credit constraints on the growth of SMEs in a transition country with an established market economy. *Small Business Economics*, *27*(2-3), 169–179. doi: 10.1007/s11187-005-4412-3

Ibbotson, P., & Moran, L. (2003). E–banking and the SME/bank relationship in Northern Ireland. *International Journal of Bank Marketing*, *21*(2), 94–103. doi: 10.1108/02652320310461474

IfM Bonn. (2021). *Wertschöpfung nach Unternehmensgröße im EU-Vergleich.* Bonn: Institut für Mittelstandsforschung Bonn. Retrieved 02.06.2023, from `https://www.ifm-bonn.org/fileadmin/data/redaktion/statistik/mittelstand_im_einzelnen/dokumente/Wertschoepfung_EU-27_GrKl_2021Sch.pdf`

IfM Bonn. (2022). *Auszubildende in Betrieben laut Bundesagentur für Arbeit: Alle Wirtschaftszweige der gewerblichen Wirtschaft und Freien Berufe.* Bonn: Institut für Mittelstandsforschung Bonn. Retrieved 02.06.2023, from `https://www.ifm-bonn.org/fileadmin/data/redaktion/statistik/mittelstand_im_einzelnen/dokumente/Azubis_KMB_2008-2021_D.pdf`

IMARC Group. (2022). *Crowdfunding market: Global industry trends, share, size, growth, opportunity and forecast 2023-2028.* IMARC Report (No. SR112023A2321). New York City: IMARC Group. Retrieved 02.06.2023, from `https://www.imarcgroup.com/crowdfunding-market`

Ioannidou, V., & Ongena, S. (2010). "Time for a change": Loan conditions and bank behavior when firms switch banks. *The Journal of Finance*, *65*(5), 1847–1877. doi: 10.1111/j.1540-6261.2010.01596.x

Iturralde, T., Maseda, A., & San-Jose, L. (2010). Empirical evidence of banking relationships for Spanish SMEs. *International Small Business Journal: Researching Entrepreneurship*, *28*(3), 274–295. doi: 10.1177/0266242609360706

Jackowicz, K., Kozłowski, Ł., & Strucinski, A. (2021). SMEs and their bank choices: Trust-related factors or economic calculations? *International Journal of Emerging Markets*, *16*(8), 2092–2116. doi: 10.1108/IJOEM-11-2019-0928

Jocumsen, G. (2004). How do small business managers make strategic marketing decisions? *European Journal of Marketing*, *38*(5/6), 659–674. doi: 10.1108/03090560410529277

Jose, M. L., Lancaster, C., & Stevens, J. L. (1996). Corporate returns and cash conversion cycles. *Journal of Economics and Finance*, *20*(1), 33–46. doi: 10.1007/BF02920497

Josefy, M., Dean, T. J., Albert, L. S., & Fitza, M. A. (2017). The role of community in crowdfunding success: Evidence on cultural attributes in funding campaigns to "save the local theater". *Entrepreneurship Theory and Practice*, *41*(2), 161–182. doi: 10.1111/etap.12263

Julien, P.-A. (1993). Small businesses as a research subject: Some reflections on knowledge of small businesses and its effects on economic theory. *Small Business Economics*, *5*(2), 157–166. doi: 10.1007/BF01531912

Junge, L. B., Laursen, I. C., & Nielsen, K. R. (2022). Choosing crowdfunding: Why do entrepreneurs choose to engage in crowdfunding? *Technovation*, *111*, 102385. doi: 10.1016/j.technovation.2021.102385

Jünger, M., & Mietzner, M. (2020). Banking goes digital: The adoption of fintech services by

German households. *Finance Research Letters*, *34*, 101260. doi: 10.1016/j.frl.2019.08.008

Kaddumi, T. A., & Ramadan, I. Z. (2012). Profitability and working capital management: The Jordanian case. *International Journal of Economics and Finance*, *4*(4), 217–226. doi: 10.5539/ijef.v4n4p217

Kale, S., & Arditi, D. (1998). Business failures: Liabilities of newness, adolescence, and smallness. *Journal of Construction Engineering and Management*, *124*(6), 458–464. doi: 10.1061/(ASCE)0733-9364(1998)124:6(458)

Kallunki, J.-P., Laitinen, E. K., & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems*, *12*(1), 20–39. doi: 10.1016/j.accinf.2010.02.001

Karmel, S. M. (2002). *A comparison of small and medium sized enterprises in Europe and in the USA*. London: Routledge.

Kärnä, A., Manduchi, A., & Stephan, A. (2021). Distance still matters: Local bank closures and credit availability. *International Review of Finance*, *21*(4), 1503–1510. doi: 10.1111/irfi.12329

Kärnä, A., & Stephan, A. (2022). Do firms in rural regions lack access to credit? Local variation in small business loans and firm growth. *Regional Studies*, *56*(11), 1–15. doi: 10.1080/00343404.2021.2016681

Kautonen, T., Fredriksson, A., Minniti, M., & Moro, A. (2020). Trust-based banking and SMEs' access to credit. *Journal of Business Venturing Insights*, *14*, e00191. doi: 10.1016/j.jbvi.2020.e00191

Kawai, M., Hashimoto, J., & Izumida, S. (1996). Japanese firms in financial distress and main banks: Analyses of interest-rate premia. *Japan and the World Economy*, *8*(2), 175–194. doi: 10.1016/0922-1425(96)00009-6

Kelliher, F., & Reinl, L. (2009). A resource–based view of micro–firm management practice. *Journal of Small Business and Enterprise Development*, *16*(3), 521–532. doi: 10.1108/14626000910977206

Keown, A. J., & Martin, J. D. (1977). A chance constrained goal programming model for working capital management. *The Engineering Economist*, *22*(3), 153–174. doi: 10.1080/00137917708965174

KfW Research. (2022a). *KfW Mittelstandspanel 2022.* Frankfurt am Main: KfW Bankengruppe. Retrieved 28.06.2023, from `https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-KfW-Mittelstandspanel/`

KfW-Mittelstandspanel-2022.pdf

KfW Research. (2022b). *KfW Mittelstandspanel 2022 - Tabellenband.* Frankfurt am Main: KfW Bankengruppe. Retrieved 10.07.2023, from https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-KfW-Mittelstandspanel/KfW-Mittelstandspanel-2022-Tabellenband.pdf

Khan, B. S. (2004). *Consumer adoption of online banking: Does distance matter?* Working Paper (No. E04-338). Berkeley, CA: University of California at Berkeley.

Kickstarter. (2023). *Kickstarter statistics.* New York City: Kickstarter. Retrieved 02.06.2023, from https://www.kickstarter.com/help/stats

Kieschnick, R., Laplante, M., & Moussawi, R. (2013). Working capital management and shareholders' wealth. *Review of Finance*, *17*(5), 1827–1852. doi: 10.1093/rof/rfs043

Klaebe, H., & Laycock, R. (2012). *How to work the crowd: A snapshot of barriers and motivations to crowdfunding.* Sydney: Australia Council for the Arts.

Klöhn, L., & Hornuf, L. (2012). Crowdinvesting in Deutschland. *Zeitschrift für Bankrecht und Bankwirtschaft*, *24*(4), 237–320.

Knyazeva, A., & Knyazeva, D. (2012). Does being your bank's neighbor matter? *Journal of Banking & Finance*, *36*(4), 1194–1209. doi: 10.1016/j.jbankfin.2011.11.011

Koch, J.-A., & Siering, M. (2015). Crowdfunding success factors: The characteristics of successfully funded projects on crowdfunding platforms. In J. Becker, J. vom Brocke, & M. de Marco (Eds.), *Proceedings of the 23rd European conference on information systems.* Münster: Association for Information Systems.

Koch, J.-A., & Siering, M. (2019). The recipe of successful crowdfunding campaigns. *Electronic Markets*, *29*(4), 661–679. doi: 10.1007/s12525-019-00357-8

Korus, A., Löher, J., Nielen, S., & Pasing, P. (2021). *Fintechs: Chancen für die KMU-Finanzierung?* IfM-Materialien (No. 288). Bonn: Institut für Mittelstandsforschung Bonn.

Krahnen, J. P., & Schmidt, R. H. (2004). *The German financial system.* Oxford: Oxford University Press.

Kraus, S., Richter, C., Brem, A., Cheng, C.-F., & Chang, M.-L. (2016). Strategies for reward-based crowdfunding campaigns. *Journal of Innovation & Knowledge*, *1*(1), 13–23. doi: 10.1016/j.jik.2016.01.010

Kromidha, E., & Robson, P. (2016). Social identity and signalling success factors in online crowdfunding. *Entrepreneurship & Regional Development*, *28*(9-10), 605–629. doi: 10

.1080/08985626.2016.1198425

Kuntchev, V., Ramalho, R., Rodriguez-Meza, J., & Yang, J. S. (2013). *What have we learned from the enterprise surveys regarding access to credit by SMEs?* World Bank Policy Research Working Paper (No. 6670). Washington DC: The World Bank.

Kuppuswamy, V., & Bayus, B. L. (2018). Crowdfunding creative ideas: The dynamics of project backers. In D. Cumming & L. Hornuf (Eds.), *The economics of crowdfunding* (pp. 151–182). London: Palgrave Macmillan.

Kysucky, V., & Norden, L. (2016). The benefits of relationship lending in a cross-country context: A meta-analysis. *Management Science*, *62*(1), 90–110. doi: 10.1287/mnsc.2014.2088

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. *The Journal of Finance*, *52*(3), 1131–1150. doi: 10.1111/j.1540-6261.1997.tb02727.x

Lagazio, C., & Querci, F. (2018). Exploring the multi-sided nature of crowdfunding campaign success. *Journal of Business Research*, *90*, 318–324. doi: 10.1016/j.jbusres.2018.05.031

Lam, R., & Burton, S. (2005). Bank selection and share of wallet among SMEs: Apparent differences between Hong Kong and Australia. *Journal of Financial Services Marketing*, *9*(3), 204–213. doi: 10.1057/palgrave.fsm.4770154

Lam, R., & Burton, S. (2006). SME banking loyalty (and disloyalty): A qualitative study in Hong Kong. *International Journal of Bank Marketing*, *24*(1), 37–52. doi: 10.1108/02652320610642335

Lardon, A., Deloof, M., & Jorissen, A. (2017). Outside CEOs, board control and the financing policy of small privately held family firms. *Journal of Family Business Strategy*, *8*(1), 29–41. doi: 10.1016/j.jfbs.2017.01.002

Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the internet and mobile banking. *Journal of Business Research*, *69*(7), 2432–2439. doi: 10.1016/j.jbusres.2016.01.013

Lavia López, O., & Hiebl, M. R. W. (2015). Management accounting in small and medium-sized enterprises: Current knowledge and avenues for further research. *Journal of Management Accounting Research*, *27*(1), 81–119. doi: 10.2308/jmar-50915

Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies on the Athens Stock Exchange. *Journal of Financial Management and Analysis*, *19*(1), 26–35.

Lazzaro, E., & Noonan, D. (2021). A comparative analysis of US and EU regulatory frameworks

of crowdfunding for the cultural and creative industries. *International Journal of Cultural Policy*, *27*(5), 590–606. doi: 10.1080/10286632.2020.1776270

Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, *61*(1), 35–46. doi: 10.1016/j.bushor.2017.09.003

Lee, N. (2014). What holds back high-growth firms? Evidence from UK SMEs. *Small Business Economics*, *43*(1), 183–195. doi: 10.1007/s11187-013-9525-5

Lee, Y. W., & Stowe, J. D. (1993). Product risk, asymmetric information, and trade credit. *The Journal of Financial and Quantitative Analysis*, *28*(2), 285–300. doi: 10.2307/2331291

Lefebvre, V. (2022). Performance, working capital management, and the liability of smallness: A question of opportunity costs? *Journal of Small Business Management*, *60*(3), 704–733. doi: 10.1080/00472778.2020.1735252

Legewie, N. (2017). Anchored calibration: From qualitative data to fuzzy sets. *Forum: Qualitative Social Research*, *18*(3). doi: 10.17169/fqs-18.3.2790

Lehmann, E., & Neuberger, D. (2001). Do lending relationships matter? *Journal of Economic Behavior & Organization*, *45*(4), 339–359. doi: 10.1016/S0167-2681(01)00151-2

Leichsenring, H. (2020). *50 Prozent der Deutschen arbeiten mit Direktbanken zusammen.* Lütjensee: Der Bank Blog. Retrieved 31.01.2023, from `https://www.der-bank-blog.de/direktbanken-marktanteil/direktbank/37670711/#:~:text=Eine%20exklusive%20Analyse%20zeigt%2C%20dass,bei%20den%20Deutschen%20im%20Trend.`

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The Journal of Finance*, *32*(2), 371–387. doi: 10.2307/2326770

Ley, A., & Weaven, S. K. (2011). Exploring the agency dynamics of crowdfunding in start-up capital financing. *Academy of Entrepreneurship Journal*, *17*(1), 85–110.

Liberti, J. M., & Mian, A. R. (2009). Estimating the effect of hierarchies on information use. *Review of Financial Studies*, *22*(10), 4057–4090. doi: 10.1093/rfs/hhn118

Liberti, J. M., & Petersen, M. A. (2019). Information: Hard and soft. *The Review of Corporate Finance Studies*, *8*(1), 1–41. doi: 10.1093/rcfs/cfy009

Lin, M., Prabhala, N. R., & Viswanathan, S. (2013). Judging borrowers by the company they keep: Friendship networks and information asymmetry in online peer-to-peer lending. *Management Science*, *59*(1), 17–35. doi: 10.1287/mnsc.1120.1560

Lin, M., & Viswanathan, S. (2016). Home bias in online investments: An empirical study of an online crowdfunding market. *Management Science*, *62*(5), 1393–1414. doi: 10.1287/mnsc.2015.2206

Lin, Y., Boh, W. F., & Goh, K. H. (2014). How different are crowdfunders? Examining archetypes of crowdfunders and their choice of projects. *SSRN Electronic Journal*. doi: 10.2139/ssrn.2397571

Long, M. S., Malitz, I. B., & Ravid, S. A. (1993). Trade credit, quality guarantees, and product marketability. *Financial Management*, *22*(4), 117–127. doi: 10.2307/3665582

Lopez-Gracia, J., & Aybar-Arias, C. (2000). An empirical approach to the financial behaviour of small and medium sized companies. *Small Business Economics*, *14*(1), 55–63. doi: 10.1023/A:1008139518709

Lu, W. (2018). Blockchain technology and its applications in fintech. In I. Traore, I. Woungang, S. S. Ahmed, & Y. Malik (Eds.), *Intelligent, secure, and dependable systems in distributed and cloud environments* (pp. 118–124). Basel: Springer International Publishing.

Lu, Z., Wu, J., Li, H., & Nguyen, D. K. (2022). Local bank, digital financial inclusion and SME financing constraints: Empirical evidence from China. *Emerging Markets Finance and Trade*, *58*(6), 1712–1725. doi: 10.1080/1540496X.2021.1923477

Lukkarinen, A., Teich, J. E., Wallenius, H., & Wallenius, J. (2016). Success drivers of online equity crowdfunding campaigns. *Decision Support Systems*, *87*, 26–38. doi: 10.1016/j.dss.2016.04.006

Lyngstadaas, H., & Berg, T. (2016). Working capital management: Evidence from Norway. *International Journal of Managerial Finance*, *12*(3), 295–313. doi: 10.1108/IJMF-01-2016-0012

Macht, S. A., & Weatherston, J. (2014). The benefits of online crowdfunding for fund-seeking business ventures. *Strategic Change*, *23*(1-2), 1–14. doi: 10.1002/jsc.1955

MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, *88*(4), 542–555. doi: 10.1016/j.jretai.2012.08.001

MacQueen, J. B. (1967). Some methods for classification and analysis of multivariate observations. In L. M. Le Cam & J. Neyman (Eds.), *Proceedings of the fifth Berkeley symposium on mathematical statistics and probability, volume 1: Statistics* (pp. 281–297). Berkeley, CA: Statistical Laboratory of the University of California, Berkeley.

Marek, P., & Stein, I. (2022). *Basel III and SME bank finance in Germany.* Discussion Paper (No. 37/2022). Frankfurt: Deutsche Bundesbank.

Martinez-Canas, R., Ruiz-Palomino, P., & Del Pozo-Rubio, R. (2012). Crowdfunding and social networks in the music industry: Implications for entrepreneurship. *International Business*

& Economics Research Journal (IBER), *11*(13), 1471–1476. doi: 10.19030/iber.v11i13.7449

Martínez-Sola, C., García-Teruel, P. J., & Martínez-Solano, P. (2014). Trade credit and SME profitability. *Small Business Economics*, *42*(3), 561–577. doi: 10.1007/s11187-013-9491-y

Masri, H., & Abdulla, Y. (2018). A multiple objective stochastic programming model for working capital management. *Technological Forecasting and Social Change*, *131*, 141–146. doi: 10.1016/j.techfore.2017.05.006

Mastrangelo, L., Cruz-Ros, S., & Miquel-Romero, M.-J. (2020). Crowdfunding success: The role of co-creation, feedback, and corporate social responsibility. *International Journal of Entrepreneurial Behavior & Research*, *26*(3), 449–466. doi: 10.1108/IJEBR-06-2019-0391

McCluskey, E. J. (1956). Minimization of boolean functions. *Bell System Technical Journal*, *35*(6), 1417–1444. doi: 10.1002/j.1538-7305.1956.tb03835.x

McHugh, L., & Ciaccio, J. N. (1955). External financing of small and medium-size business. *Survey of Current Business*, *35*(10), 15–22.

McSweeney, J. J., McSweeney, K. T., Webb, J. W., & Devers, C. E. (2022). The right touch of pitch assertiveness: Examining entrepreneurs' gender and project category fit in crowdfunding. *Journal of Business Venturing*, *37*(4), 106223. doi: 10.1016/j.jbusvent.2022.106223

Menard, S. (2002). *Applied logistic regression analysis*. Thousand Oaks, CA: SAGE Publications.

Menold, N., Kaczmirek, L., Lenzner, T., & Neusar, A. (2014). How do respondents attend to verbal labels in rating scales? *Field Methods*, *26*(1), 21–39. doi: 10.1177/1525822X13508270

Merville, L. J., & Tavis, L. A. (1973). Optimal working capital policies: A chance-constrained programming approach. *Journal of Financial and Quantitative Analysis*, *8*(1), 47–59. doi: 10.2307/2329747

Michiels, A., & Molly, V. (2017). Financing decisions in family businesses: A review and suggestions for developing the field. *Family Business Review*, *30*(4), 369–399. doi: 10.1177/0894486517736958

Milani, C. (2014). Borrower–lender distance and loan default rates: Macro evidence from the Italian local markets. *Journal of Economics and Business*, *71*, 1–21. doi: 10.1016/j.jeconbus.2013.09.002

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE Publishing.

Miller, K., McAdam, M., Spieth, P., & Brady, M. (2021). Business models big and small:

Review of conceptualisations and constructs and future directions for SME business model research. *Journal of Business Research*, *131*, 619–626. doi: 10.1016/j.jbusres.2020.12.036

Mitchell, F., & Reid, G. C. (2000). Editorial. Problems, challenges and opportunities: The small business as a setting for management accounting research. *Management Accounting Research*, *11*(4), 385–390. doi: 10.1006/mare.2000.0152

Mitra, D. (2012). The role of crowdfunding in entreprenerial finance. *Delhi Business Review*, *13*(2), 67–72. doi: 10.51768/dbr.v13i2.132201218

Mitter, C. (2012). Firm-bank relationships and bank selection criteria: Empirical evidence from Austrian and German companies. *European Journal of Management*, *12*(3).

Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, *29*(1), 1–16. doi: 10.1016/j.jbusvent.2013.06.005

Mollick, E., & Kuppuswamy, V. (2014). *After the campaign: Outcomes of crowdfunding.* Wharton Faculty Research Management Papers. Philadelphia: University of Pennsylvania. doi: 10.2139/ssrn.2376997

Moritz, A., & Block, J. H. (2014). Crowdfunding und Crowdinvesting: State-of-the-art der wissenschaftlichen Literatur. *Zeitschrift für KMU & Entrepreneurship*, *62*(1), 57–89.

Moritz, A., Block, J. H., & Lutz, E. (2015). Investor communication in equity-based crowdfunding: A qualitative-empirical study. *Qualitative Research in Financial Markets*, *7*(3), 309–342. doi: 10.1108/QRFM-07-2014-0021

Moro, A., & Fink, M. (2013). Loan managers' trust and credit access for SMEs. *Journal of Banking & Finance*, *37*(3), 927–936. doi: 10.1016/j.jbankfin.2012.10.023

Moscalu, M., Girardone, C., & Calabrese, R. (2020). SMEs' growth under financing constraints and banking markets integration in the euro area. *Journal of Small Business Management*, *58*(4), 707–746. doi: 10.1080/00472778.2019.1668722

Motylska-Kuzma, A. (2016). Cost of crowdfunding as a source of capital for the small company. In *Proceedings of the 3rd international multidisciplinary scientific conference on social sciences and arts SGEM.* Albena, BG: International Multidisciplinary Scientific GeoConferences (SGEM).

Murinde, V., Rizopoulos, E., & Zachariadis, M. (2022). The impact of the fintech revolution on the future of banking: Opportunities and risks. *International Review of Financial Analysis*, *81*, 102103. doi: 10.1016/j.irfa.2022.102103

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2),

187–221. doi: 10.1016/0304-405X(84)90023-0

Nadiri, M. I. (1969). The determinants of trade credit in the U.S. total manufacturing sector. *Econometrica*, *37*(3), 408–423. doi: 10.2307/1912790

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, *23*(2), 242–266. doi: 10.5465/amr.1998.533225

Nazir, M. S., & Afza, T. (2009). Working capital requirements and the determining factors in Pakistan. *ICFAI Journal of Applied Finance*, *15*(4), 29–38.

Newby, R., Watson, J., & Woodliff, D. (2003). SME survey methodology: Response rates, data quality, and cost effectiveness. *Entrepreneurship Theory and Practice*, *28*(2), 163–172. doi: 10.1046/j.1540-6520.2003.00037.x

Ng, C. K., Smith, J. K., & Smith, R. L. (1999). Evidence on the determinants of credit terms used in interfirm trade. *The Journal of Finance*, *54*(3), 1109–1129. doi: 10.1111/0022-1082.00138

Nguyen, H.-L. Q. (2019). Are credit markets still local? Evidence from bank branch closings. *American Economic Journal: Applied Economics*, *11*(1), 1–32. doi: 10.1257/app.20170543

Nguyen, H. T., Nguyen, T. T., Le Dang, X. P., & Nguyen, H. M. (2022). Informal financing choice in SMEs: Do the types of formal credit constraints matter? *Journal of Small Business & Entrepreneurship*, *34*(3), 313–332. doi: 10.1080/08276331.2019.1692441

Niederöcker, B. (2002). *Finanzierungsalternativen in kleinen und mittleren Unternehmen.* Wiesbaden: Deutscher Universitätsverlag.

Nitani, M., & Legendre, N. (2021). Cooperative lenders and the performance of small business loans. *Journal of Banking & Finance*, *128*, 106125. doi: 10.1016/j.jbankfin.2021.106125

Norton, E. (1991). Capital structure and small public firms. *Journal of Business Venturing*, *6*(4), 287–303. doi: 10.1016/0883-9026(91)90020-E

Ordanini, A., Miceli, L., Pizzetti, M., & Parasuraman, A. (2011). Crowdfunding: Transforming customers into investors through innovative service platforms. *Journal of Service Management*, *22*(4), 443–470. doi: 10.1108/09564231111155079

Orobia, L. A., Padachi, K., & Munene, J. C. (2016). Why some small businesses ignore austere working capital management routines. *Journal of Accounting in Emerging Economies*, *6*(2), 94–110. doi: 10.1108/JAEE-08-2013-0039

Ortega-Argilés, R., Vivarelli, M., & Voigt, P. (2009). R&D in SMEs: A paradox? *Small Business*

Economics, *33*(1), 3–11. doi: 10.1007/s11187-009-9187-5

Owalla, B., Gherhes, C., Vorley, T., & Brooks, C. (2022). Mapping SME productivity research: A systematic review of empirical evidence and future research agenda. *Small Business Economics*, *58*(3), 1285–1307. doi: 10.1007/s11187-021-00450-3

Padachi, K. (2006). Trends in working capital management and its impact on firm's performance: An analysis of Mauritian small manufacturing firms. *International Review of Business Research Papers*, *2*(2), 45–58.

Padachi, K. (2012). Factors affecting the adoption of formal accounting systems by SMEs. *Business and Economics Journal*, *3*(1), 1–20.

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: Sage Publications.

Peel, M. J., & Wilson, N. (1996). Working capital and financial management practices in the small firm sector. *International Small Business Journal*, *14*(2), 52–68. doi: 10.1177/0266242696142004

Peel, M. J., Wilson, N., & Howorth, C. (2000). Late payment and credit management in the small firm sector: Some empirical evidence. *International Small Business Journal*, *18*(2), 17–37. doi: 10.1177/0266242600182001

Peltoniemi, J., & Vieru, M. (2013). Personal guarantees, loan pricing, and lending structure in Finnish small business loans. *Journal of Small Business Management*, *51*(2), 235–255. doi: 10.1111/jsbm.12015

Perren, L. (1999). Factors in the growth of micro–enterprises (Part 1): Developing a framework. *Journal of Small Business and Enterprise Development*, *6*(4), 366–385. doi: 10.1108/EUM0000000006691

Perren, L., & Grant, P. (2000). The evolution of management accounting routines in small businesses: A social construction perspective. *Management Accounting Research*, *11*(4), 391–411. doi: 10.1006/mare.2000.0141

Petersen, M. A., & Rajan, R. G. (1994). The benefits of lending relationships: Evidence from small business data. *The Journal of Finance*, *49*(1), 3–37. doi: 10.2307/2329133

Petersen, M. A., & Rajan, R. G. (1997). Trade credit: Theories and evidence. *The Review of Financial Studies*, *10*(3), 661–691. doi: 10.1093/rfs/10.3.661

Petersen, M. A., & Rajan, R. G. (2002). Does distance still matter? The information revolution in small business lending. *The Journal of Finance*, *57*(6), 2533–2570. doi: 10.1111/1540-6261.00505

Petitjean, M. (2018). What explains the success of reward-based crowdfunding campaigns as they unfold? Evidence from the French crowdfunding platform KissKissBankBank. *Finance Research Letters*, *26*, 9–14. doi: 10.1016/j.frl.2017.11.005

Pfohl, H.-C. (2021). Abgrenzung der Klein- und Mittelbetriebe von Großbetrieben. In H.-C. Pfohl (Ed.), *Betriebswirtschaftslehre der Mittel- und Kleinbetriebe* (pp. 11–36). Berlin: Erich Schmidt Verlag.

Pielsticker, D. I., & Hiebl, M. R. (2020). Survey response rates in family business research. *European Management Review*, *17*(1), 327–346. doi: 10.1111/emre.12375

Piva, E., & Rossi-Lamastra, C. (2018). Human capital signals and entrepreneurs' success in equity crowdfunding. *Small Business Economics*, *51*(3), 667–686. doi: 10.1007/s11187-017-9950-y

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi: 10.1037/0021-9010.88.5.879

Pollack, J. M., Maula, M., Allison, T. H., Renko, M., & Günther, C. C. (2021). Making a contribution to entrepreneurship research by studying crowd-funded entrepreneurial opportunities. *Entrepreneurship Theory and Practice*, *45*(2), 247–262. doi: 10.1177/1042258719888640

Pollini, P., Nicolacakis, D., & Lovenheim, G. (2021). *PwC's 2021 digital banking consumer survey.* New York City: PricewaterhouseCoopers International. Retrieved 31.01.2023, from `https://www.pwc.com/us/en/industries/financial-services/library/digital-banking-consumer-survey.html`

Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation: How companies cultivate the skills and resources for growth. *Harvard Business Review*, *68*(3), 79–91.

Prasad, P., Narayanasamy, S., Paul, S., Chattopadhyay, S., & Saravanan, P. (2019). Review of literature on working capital management and future research agenda. *Journal of Economic Surveys*, *33*(3), 827–861. doi: 10.1111/joes.12299

Pregibon, D. (1981). Logistic regression diagnostics. *The Annals of Statistics*, *9*(4), 705–724. doi: 10.1214/aos/1176345513

Puschmann, T. (2017). Fintech. *Business & Information Systems Engineering*, *59*(1), 69–76. doi: 10.1007/s12599-017-0464-6

Qiu, C. (2013). Issues in crowdfunding: Theoretical and empirical investigation on Kickstarter. *SSRN Electronic Journal*. doi: 10.2139/ssrn.2345872

Quine, W. V. (1952). The problem of simplifying truth functions. *The American Mathematical Monthly*, *59*(8), 521–531. doi: 10.2307/2308219

Ragin, C. C. (1987). *The comparative method: Moving beyond qualitative and quantitative strategies*. Berkeley: University of California Press.

Ragin, C. C. (2000). *Fuzzy-set social science*. Chicago: The University of Chicago Press.

Ragin, C. C. (2006). Set relations in social research: Evaluating their consistency and coverage. *Political Analysis*, *14*(3), 291–310. doi: 10.1093/pan/mpj019

Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: The University of Chicago Press.

Raheman, A., & Nasr, M. (2007). Working capital management and profitability - Case of Pakistani listed firms. *International Review of Business Research Papers*, *3*(1), 279–300.

Rajan, R. G. (1992). Insiders and outsiders: The choice between informed and arm's-length debt. *The Journal of Finance*, *47*(4), 1367–1400. doi: 10.1111/j.1540-6261.1992.tb04662.x

Ramón-Llorens, M. C., García-Meca, E., & Duréndez, A. (2017). Influence of CEO characteristics in family firms internationalization. *International Business Review*, *26*(4), 786–799. doi: 10.1016/j.ibusrev.2017.01.007

Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2021). A systematic literature review on SME financing: Trends and future directions. *Journal of Small Business Management*, *61*(3), 1247–1277. doi: 10.1080/00472778.2021.1955123

Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology*, *16*(4), 353–385. doi: 10.1080/13594320701595438

Reid, G. C., & Smith, J. A. (2000). The impact of contingencies on management accounting system development. *Management Accounting Research*, *11*(4), 427–450. doi: 10.1006/mare.2000.0140

Rice, T., & Strahan, P. E. (2010). Does credit competition affect small-firm finance? *The Journal of Finance*, *65*(3), 861–889. doi: 10.1111/j.1540-6261.2010.01555.x

Richards, V. D., & Laughlin, E. J. (1980). A cash conversion cycle approach to liquidity analysis. *Financial Management*, *9*(1), 32–38. doi: 10.2307/3665310

Richbell, S. M., Watts, H. D., & Wardle, P. (2006). Owner-managers and business planning in the small firm. *International Small Business Journal*, *24*(5), 496–514. doi: 10.1177/0266242606067275

Rohlfing, I. (2020). The choice between crisp and fuzzy sets in qualitative comparative analysis and the ambiguous consequences for finding consistent set relations. *Field Methods*, *32*(1), 75–88. doi: 10.1177/1525822X19896258

Romano, C. A., Tanewski, G. A., & Smyrnios, K. X. (2001). Capital structure decision making: A model for family business. *Journal of Business Venturing*, *16*(3), 285–310. doi: 10.1016/S0883-9026(99)00053-1

Ruzzier, M., Hisrich, R. D., & Antoncic, B. (2006). SME internationalization research: Past, present, and future. *Journal of Small Business and Enterprise Development*, *13*(4), 476–497. doi: 10.1108/14626000610705705

Samiloglu, F., & Demirgunes, K. (2008). The effect of working capital management on firm profitability: Evidence from Turkey. *The International Journal of Applied Economics and Finance*, *2*(1), 44–50. doi: 10.3923/ijaef.2008.44.50

Santomero, A. M. (1984). Modeling the banking firm: A survey. *Journal of Money, Credit and Banking*, *16*(4), 576–602. doi: 10.2307/1992092

Saparito, P. A., Chen, C. C., & Sapienza, H. J. (2004). The role of relational trust in bank–small firm relationships. *Academy of Management Journal*, *47*(3), 400–410. doi: 10.5465/20159589

Saris, W. E., & Gallhofer, I. N. (2014). *Design, evaluation, and analysis of questionnaires for survey research* (2nd ed.). Hoboken, NJ: Wiley.

Sartoris, W. L., & Spruill, M. L. (1974). Goal programming and working capital management. *Financial Management*, *3*(1), 67–74. doi: 10.2307/3665073

Schilling, G. (1996). Working capital's role in maintaining corporate liquidity. *TMA Journal*, *16*(5), 4–7.

Schneider, C. Q., & Wagemann, C. (2010). Standards of good practice in qualitative comparative analysis (QCA) and fuzzy-sets. *Comparative Sociology*, *9*(3), 397–418. doi: 10.1163/156913210X12493538729793

Schneider, C. Q., & Wagemann, C. (2013). *Set-theoretic methods for the social sciences: A guide to qualitative comparative analysis*. Cambridge: Cambridge University Press.

Schriesheim, C. A. (1979). The similarity of individual directed and group directed leader behavior descriptions. *Academy of Management Journal*, *22*(2), 345–355. doi: 10.5465/255594

Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle* (Vol. XLVI). Cambridge, MA: Harvard University

Press.

Schwienbacher, A., & Larralde, B. (2010). Crowdfunding of small entrepreneurial ventures. *SSRN Electronic Journal*. doi: 10.2139/ssrn.1699183

Schwienbacher, A., & Larralde, B. (2012). Alternative types of entrepreneurial finance. In D. J. Cumming (Ed.), *The Oxford handbook of entrepreneurial finance* (pp. 369–391). Oxford: Oxford University Press.

Scott, J. A. (2004). Small business and the value of community financial institutions. *Journal of Financial Services Research*, *25*(2/3), 207–230. doi: 10.1023/B:FINA.0000020661.30763.fe

Scott, J. A. (2006). *Why do small firms change banks?* Working Paper. Philadelphia: Temple University, Fox School of Business.

Seshadri, S., & Broekemier, G. M. (2022). Small business executives' online survey response intentions: The effects of incentives and survey length. *Small Business Institute Journal*, *18*(2), 1–9. doi: 10.53703/001c.32575

Seth, H., Chadha, S., Sharma, S. K., & Ruparel, N. (2021). Exploring predictors of working capital management efficiency and their influence on firm performance: An integrated DEA-SEM approach. *Benchmarking: An International Journal*, *28*(4), 1120–1145. doi: 10.1108/BIJ-05-2020-0251

Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, *32*(1), 129–142. doi: 10.1016/j.tele.2014.05.003

Shane, S., & Cable, D. (2002). Network ties, reputation, and the financing of new ventures. *Management Science*, *48*(3), 364–381. doi: 10.1287/mnsc.48.3.364.7731

Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability. *Global Business Review*, *12*(1), 159–173. doi: 10.1177/097215091001200110

Sharpe, S. A. (1990). Asymmetric information, bank lending and implicit contracts: A stylized model of customer relationships. *The Journal of Finance*, *45*(4), 1069–1087. doi: 10.2307/2328715

Shin, H.-H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice & Education*, *8*(2), 37–45.

Shipley, D., & Davies, L. (1991). The role and burden-allocation of credit in distribution channels. *Journal of Marketing Channels*, *1*(1), 3–22. doi: 10.1300/J049v01n01_02

Shneor, R., & Vik, A. A. (2020). Crowdfunding success: A systematic literature review 2010–2017. *Baltic Journal of Management*, *15*(2), 149–182. doi: 10.1108/BJM-04-2019-0148

Short, J. C., Ketchen, D. J., McKenny, A. F., Allison, T. H., & Ireland, R. D. (2017). Research on crowdfunding: Reviewing the (very recent) past and celebrating the present. *Entrepreneurship Theory and Practice*, *41*(2), 149–160. doi: 10.1111/etap.12270

Simons, R. (1990). The role of management control systems in creating competitive advantage: New perspectives. *Accounting, Organizations and Society*, *15*(1-2), 127–143. doi: 10.1016/0361-3682(90)90018-P

Singh, F., & Kaur, M. (2015). Why exporting SMEs switch banks? *Global Business Review*, *16*(4), 652–664. doi: 10.1177/0972150915581109

Singh, P. H., & Kumar, S. (2014). Working capital management: A literature review and research agenda. *Qualitative Research in Financial Markets*, *6*(2), 173–197. doi: 10.1108/QRFM-04-2013-0010

Singh, S., Sahni, M. M., & Kovid, R. K. (2020). What drives fintech adoption? A multi-method evaluation using an adapted technology acceptance model. *Management Decision*, *58*(8), 1675–1697. doi: 10.1108/MD-09-2019-1318

Sirmon, D. G., Hitt, M. A., & Ireland, R. D. (2007). Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, *32*(1), 273–292. doi: 10.5465/amr.2007.23466005

Skaaning, S.-E. (2011). Assessing the robustness of crisp-set and fuzzy-set QCA results. *Sociological Methods & Research*, *40*(2), 391–408. doi: 10.1177/0049124111404818

Skirnevskiy, V., Bendig, D., & Brettel, M. (2017). The influence of internal social capital on serial creators' success in crowdfunding. *Entrepreneurship Theory and Practice*, *41*(2), 209–236. doi: 10.1111/etap.12272

Smith, K. V. (1973). State of the art of working capital management. *Financial Management*, *2*(3), 50–55. doi: 10.2307/3664987

Smith, K. V., & Sell, S. B. (1980). Working capital management in practice. In K. V. Smith (Ed.), *Readings on the management of working capital* (pp. 51–84). St. Paul: West Publishing.

Sogorb-Mira, F. (2005). How SME uniqueness affects capital structure: Evidence from a 1994–1998 Spanish data panel. *Small Business Economics*, *25*(5), 447–457. doi: 10.1007/s11187-004-6486-8

Sousa, S. D., Aspinwall, E., Sampaio, P. A., & Rodrigues, A. G. (2005). Performance measures and quality tools in Portuguese small and medium enterprises: Survey results. *Total Quality Management & Business Excellence*, *16*(2), 277–307. doi: 10.1080/14783360500054434

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374.

doi: 10.2307/1882010

Statista GmbH. (2021). *Statista digital market oulook - Fintech report 2021.* Hamburg: Statista GmbH. Retrieved 29.06.2023, from `https://de.statista.com/statistik/studie/id/44591/dokument/fintech-report/`

Statista Research Department. (2022). *Number of banks in Europe (EU28) as of july 2022, by country.* New York City: Statista Inc. Retrieved 31.01.2023, from `https://www.statista.com/statistics/940867/number-of-banks-in-europe-by-country/`

Statistisches Bundesamt. (2022). *Anteile Kleine und Mittlere Unternehmen 2020 nach Größenklassen in %.* Wiesbaden: Statistisches Bundesamt. Retrieved 01.06.2023, from `https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Kleine-Unternehmen-Mittlere-Unternehmen/Tabellen/wirtschaftsabschnitte-insgesamt.html`

Stein, J. C. (2002). Information production and capital allocation: Decentralized versus hierarchical firms. *The Journal of Finance*, *57*(5), 1891–1921. doi: 10.1111/0022-1082.00483

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review*, *71*(3), 393–410.

Stinchcombe, A. L. (1965). Social structure and organizations. In J. P. March (Ed.), *Handbook of organizations* (pp. 142–193). Chicago: Rand McNally.

Stoll, H. R., & Curley, A. J. (1970). Small business and the new issues market for equities. *The Journal of Financial and Quantitative Analysis*, *5*(3), 309–322. doi: 10.2307/2329998

Strahan, P. E., & Weston, J. P. (1996). Small business lending and bank consolidation: Is there cause for concern? *Current Issues in Economics and Finance*, *2*(3), 1–6.

Strauss, A. L., & Corbin, J. M. (1990). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (1st ed.). Newbury Park, CA: SAGE Publishing.

Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few* (1st ed.). New York City: Doubleday.

Tang, H. (2019). Peer-to-peer lenders versus banks: Substitutes or complements? *Review of Financial Studies*, *32*(5), 1900–1938. doi: 10.1093/rfs/hhy137

Tauringana, V., & Adjapong Afrifa, G. (2013). The relative importance of working capital management and its components to SMEs' profitability. *Journal of Small Business and Enterprise Development*, *20*(3), 453–469. doi: 10.1108/JSBED-12-2011-0029

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. doi: 10.1002/(SICI)1097-0266(199708)18:

7<509::AID-SMJ882>3.0.CO;2-Z

Thakor, A. V. (2020). Fintech and banking: What do we know? *Journal of Financial Intermediation*, *41*, 100833. doi: 10.1016/j.jfi.2019.100833

Tibshirani, R., Walther, G., & Hastie, T. (2001). Estimating the number of clusters in a data set via the gap statistic. *Journal of the Royal Statistical Society Series B: Statistical Methodology*, *63*(2), 411–423. doi: 10.1111/1467-9868.00293

Tomczak, A., & Brem, A. (2013). A conceptualized investment model of crowdfunding. *Venture Capital*, *15*(4), 335–359. doi: 10.1080/13691066.2013.847614

Tóth, Z., Henneberg, S. C., & Naudé, P. (2017). Addressing the 'qualitative' in fuzzy set qualitative comparative analysis: The generic membership evaluation template. *Industrial Marketing Management*, *63*, 192–204. doi: 10.1016/j.indmarman.2016.10.008

Trayler, R., Nielson, J., & Jones, R. (2000). How small business firms select a bank: Comparisons between the United States and Australia. *Journal of Financial Services Marketing*, *5*(1), 73–85. doi: 10.1057/palgrave.fsm.4770008

Udell, G. F. (2008). What's in a relationship? The case of commercial lending. *Business Horizons*, *51*(2), 93–103. doi: 10.1016/j.bushor.2007.10.005

Udell, G. F. (2009). Financial innovation, organizations, and small business lending. In P. Alessandrini (Ed.), *The changing geography of banking and finance* (pp. 15–26). Heidelberg: Springer.

Ullah, S., & Zhou, Y. (2020). Gender, anonymity and team: What determines crowdfunding success on Kickstarter. *Journal of Risk and Financial Management*, *13*(4), 80. doi: 10.3390/jrfm13040080

Viskari, S., Lukkari, E., & Kärri, T. (2011). State of working capital management research: Bibliometric study. *Middle Eastern Finance and Economics*, *5*(14), 99–108.

Vogt, W. P., & Johnson, R. B. (2016). *The SAGE dictionary of statistics & methodology: A nontechnical guide for the social sciences.* Thousand Oaks, CA: SAGE Publications.

Wagenvoort, R. (2003). Are finance constraints hindering the growth of SMEs in Europe? *European Investment Bank Papers*, *8*(2), 23–50.

Walker, D. A. (1989). Financing the small firm. *Small Business Economics*, *1*(4), 285–296. doi: 10.1007/BF00393807

Walker, E. W., & Petty, J. W. (1978). Financial differences between large and small firms. *Financial Management*, *7*(4), 61–68. doi: 10.2307/3665087

Walthoff-Borm, X., Schwienbacher, A., & Vanacker, T. (2018). Equity crowdfunding: First

resort or last resort? *Journal of Business Venturing*, *33*(4), 513–533. doi: 10.1016/j.jbusvent.2018.04.001

Wang, Y.-J. (2002). Liquidity management, operating performance, and corporate value: Evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, *12*(2), 159–169. doi: 10.1016/S1042-444X(01)00047-0

Watson, R., & Wilson, N. (2002). Small and medium size enterprise financing: A note on some of the empirical implications of a pecking order. *Journal of Business Finance & Accounting*, *29*(3&4), 557–578. doi: 10.1111/1468-5957.00443

Weinraub, H. J., & Visscher, S. (1998). Industry practices relating to aggressive conservative working capital policies. *Journal of Financial and Strategic Decisions*, *11*(2), 11–18.

Welsh, J. A., & White, J. F. (1981). A small business is not a little big business. *Harvard Business Review*, *59*(4), 18–27.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. doi: 10.1002/smj.4250050207

Westhead, P., Cowling, M., & Howorth, C. (2001). The development of family companies: Management and ownership imperatives. *Family Business Review*, *14*(4), 369–385. doi: 10.1111/j.1741-6248.2001.00369.x

Westhead, P., Wright, M., & Ucbasaran, D. (2001). The internationalization of new and small firms. *Journal of Business Venturing*, *16*(4), 333–358. doi: 10.1016/S0883-9026(99)00063-4

Wheat, R. E., Wang, Y., Byrnes, J. E., & Ranganathan, J. (2013). Raising money for scientific research through crowdfunding. *Trends in Ecology & Evolution*, *28*(2), 71–72. doi: 10.1016/j.tree.2012.11.001

Whited, T. M. (1992). Debt, liquidity constraints, and corporate investment: Evidence from panel data. *The Journal of Finance*, *47*(4), 1425–1460. doi: 10.2307/2328946

Widener, S. K. (2007). An empirical analysis of the levers of control framework. *Accounting, Organizations and Society*, *32*(7-8), 757–788. doi: 10.1016/j.aos.2007.01.001

Wiersch, A. M., Miseara, L., Marre, A., & Wavering Corcoran, E. (2023). *Small business credit survey (SBCS): 2022 report on employer firms.* Washington, D.C.: United States Federal Reserve System. doi: 10.55350/sbcs-20230308

Wilson, K. (2014). *The crowdfunding phenomenon.* Blog Post. Brussels: Bruegel. Retrieved 02.06.2023, from `https://www.bruegel.org/blog-post/crowdfunding-phenomenon`

Winborg, J., & Landström, H. (2001). Financial bootstrapping in small businesses. *Journal of*

Business Venturing, *16*(3), 235–254. doi: 10.1016/S0883-9026(99)00055-5

Wolf, M. (2010). Finanzierungsbedingungen des Handwerks für Kredite vor dem Hintergrund der Wirtschafts- und Finanzkrise 2008/2009. In U. Küpper (Ed.), *Lehren aus der Krise* (pp. 126–172). München: Ludwig-Fröhler-Institut.

Wu, Z., & Chua, J. H. (2012). Second–order gender effects: The case of U.S. small business borrowing cost. *Entrepreneurship Theory and Practice*, *36*(3), 443–463. doi: 10.1111/j.1540-6520.2012.00503.x

Wynarczyk, P., Watson, R., Storey, D. J., Short, H., & Keasey, K. (2016). *Managerial labour markets in small and medium-sized enterprises.* London: Routledge.

Xiang, D., Zhang, Y., & Worthington, A. C. (2021). Determinants of the use of fintech finance among Chinese small and medium-sized enterprises. *IEEE Transactions on Engineering Management*, *68*(6), 1590–1604. doi: 10.1109/TEM.2020.2989136

Xie, J., Ye, L., Huang, W., & Ye, M. (2021). Understanding fintech platform adoption: Impacts of perceived value and perceived risk. *Journal of Theoretical and Applied Electronic Commerce Research*, *16*(5), 1893–1911. doi: 10.3390/jtaer16050106

Xu, A., Yang, X., Rao, H., Fu, W.-T., Huang, S.-W., & Bailey, B. P. (2014). Show me the money! In M. Jones, P. Palanque, A. Schmidt, & T. Grossman (Eds.), *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 591–600). New York City: ACM. doi: 10.1145/2556288.2557045

You, J.-I. (1995). Small firms in economic theory. *Cambridge Journal of Economics*, *19*(3), 441–462. doi: 10.1093/oxfordjournals.cje.a035323

Yousafzai, S. Y., Pallister, J. G., & Foxall, G. R. (2003). A proposed model of e-trust for electronic banking. *Technovation*, *23*(11), 847–860. doi: 10.1016/S0166-4972(03)00130-5

Yuan, K., Li, W., & Zhang, W. (2023). Your next bank is not necessarily a bank: Fintech expansion and bank branch closures. *Economics Letters*, *222*, 110948. doi: 10.1016/j.econlet.2022.110948

Zentralverband des Deutschen Handwerks. (2018). *Strukturumfrage im Handwerk: Ergebnisse einer Umfrage unter Handwerksbetrieben im dritten Quartal 2017.* Berlin: Zentralverband des Deutschen Handwerks. Retrieved 14.06.2023, from `https://www.hwk-ff.de/wp-content/uploads/2018/03/180123_Bericht-Strukturumfrage.pdf`.

Zentralverband des Deutschen Handwerks. (2020). *Ergebnisse der ZDH-Betriebsbefragung zur Finanzierungssituation der Betriebe im Rahmen der Corona-Pandemie.* Berlin: Zentralverband des Deutschen Handwerks.

Zhao, C., Noman, A. H. M., & Asiaei, K. (2022). Exploring the reasons for bank-switching behavior in retail banking. *International Journal of Bank Marketing*, *40*(2), 242–262. doi: 10.1108/IJBM-01-2021-0042

Zhao, T., & Jones-Evans, D. (2017). SMEs, banks and the spatial differentiation of access to finance. *Journal of Economic Geography*, *17*(4), 791–824. doi: 10.1093/jeg/lbw029

Zhao, T., Luintel, K. B., & Matthews, K. (2021). Soft information and the geography of SME bank lending. *Regional Studies*, *55*(4), 679–692. doi: 10.1080/00343404.2020.1851024

Zhao, Y. (2011). *Contemporary working capital management practices in Australia* (Dissertation). RMIT University, Melbourne.

Zheng, H., Li, D., Wu, J., & Xu, Y. (2014). The role of multidimensional social capital in crowdfunding: A comparative study in China and US. *Information & Management*, *51*(4), 488–496. doi: 10.1016/j.im.2014.03.003

Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*, *21*(5), 527–540. doi: 10.1108/10662241111176353

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, *26*(4), 760–767. doi: 10.1016/j.chb.2010.01.013

Zoppa, A., & McMahon, R. G. (2002). Pecking order theory and the financial structure of manufacturing SMEs from Australia's business longitudinal survey. *Small Enterprise Research*, *10*(2), 23–41. doi: 10.5172/ser.10.2.23

Zvilichovsky, D., Inbar, Y., & Barzilay, O. (2013). Playing both sides of the market: Success and reciprocity on crowdfunding platforms. *SSRN Electronic Journal*. doi: 10.2139/ssrn.2304101