The ability-willingness paradox of small family firms to collaborate for innovation

10.5465/AMBPP.2021.184

THE ABILITY-WILLINGNESS PARADOX OF SMALL FAMILY FIRMS TO COLLABORATE FOR INNOVATION

MAKSIM BELITSKI
Henley Business School
University of Reading
Henley-on-Thames RG9 3AU, UK

CHRISTINA GUENTHER
WHU-Otto Beisheim School of Management

NADA KHACHLOUF
ICD Business School Paris, IGS-Group

INTRODUCTION

Family firms' innovation activities are characterized by the so-called "ability-willingness paradox" (Chrisman, Chua, De Massis, Frattini & Wright, 2015). It states that despite being able to innovate more, family firms are less willing to do so (Chrisman, Chua, De Massis, Frattini & Wright, 2015; De Massis, Di Minin & Frattini, 2015; Feranita, Kotlar, De Massis, 2017). This "family innovation dilemma" (Duran, Kammerlander, Van Essen & Zellweger, 2016) also exists in the context of open innovation activities (Chesbrough, 2003), i.e., when family firms collaborate with external sources for innovative purposes. Prior studies have shown that family firms generally are less willing to collaborate with external partners than non-family firms (Cassia et al. 2012; Nieto et al., 2015; Pittino & Visintin, 2011), but at the same time, they have a higher ability to identify opportunities outside their boundaries and have valuable ties to external stakeholders, allowing them to innovate more than their non-family counterparts (Chrisman, Chua, De Massis, Frattini & Wright, 2015, Broekaert et al., 2016; Miller et al., 2009).

Overcoming this ability-willingness paradox in the context of open innovation is of crucial importance. Indeed, the need to tackle internal resource constraints and to expand the internal knowledge base to manage the increasingly complex business environment (Seidl and Werle, 2018), is becoming ever more relevant (Hitt, Dacin, Levitas, Arregle & Borza, 2000). Therefore, researchers have called to unpack how family firms can use open innovation approaches to boost their innovation performance (Calabrò, Vecchiarini, Gast, Campopiano, De Massis, & Kraus, 2019; Kellermanns & Hoy, 2016; Feranita, Kotlar, De Massis, 2017). This need to utilize open innovation activities is especially prevalent in the context of small family firms (Feranita, Kotlar, and De Massis 2017; Magistretti, Dell'Era, De Massis & Frattini, 2019) as they are most resource-constrained and experience a strong immediate influence of their owner family (Intihar & Pollack, 2012; Werner, Schröder, & Cholsta, 2018; Erdogan, Rondi, & De Massis, 2020; Querbach, Bird, Kraft, & Kammerlander, 2020). They are thus likely to be subject to the ability-willingness paradox.

This paper argues that small family firms' unique characteristics will result in two particular strategies when collaborating with external partners. These in turn, will enable small family firms to successfully resolve parts of the ability-willingness paradox. More precisely, we argue that the lower willingness to collaborate with external stakeholders is not a universal phenomenon for small family firms. Instead, the willingness to engage in open innovation

10.5465/AMBPP.2021.184

activities depends on two key dimensions of the collaboration partner, i.e., partner type and regional proximity. Therefore, these two factors constitute important boundary conditions of the ability-willingness paradox.

Building on the resource-based view of innovating with limited resources (De Massis, Audretsch, Uhlaner and Kammerlander, 2018), we argue that small family firms focus their collaboration activities on customers and within their regional communities. Small family firms' higher ability to govern open innovation activities and thus to realize innovation output relies exactly on their focus on customers and regionally proximate collaboration partners, and the accompanying long-term oriented trust-based knowledge exchange relationship (Beck & Prügl, 2018; Newman et al., 2016). Thus, we expect the ability to innovate more than small non-family firms to materialize foremost when small family firms collaborate with these partners, and in particular, regional customers.

We investigate these hypotheses using a large sample of 6,272 small firms in the UK during 2002-2016 based on the Business Structure Database (BSD) and the UK Innovation survey UKIS. We find that the willingness to collaborate is indeed not, in general, lower for small family firms as compared to small non-family firms. While we do not see a difference in the likelihood of collaborating with customers within the region, we find a significantly lower collaboration likelihood for small family firms on a national, European, or worldwide scale. Moreover, the ability to innovation more than small non-family firms from open innovation can be observed in the case of collaboration with customers within the region. However, this innovation premium vanishes when small family firms collaborate with customers outside of the region (within UK, Europe or the rest of the world).

Our paper makes three contributions. First, we enhance the literature on family firms' innovation activities by developing two important boundary conditions for the ability-willingness paradox for small family firms (Chrisman et al., 2015). Second, we contribute to the literature on open innovation in family firms by shifting the focus from family firm characteristics and their influence on collaborative innovation to their collaboration partners' characteristics, i.e. collaboration partner heterogeneity. We thereby expand existing literature on family firms' collaboration partner selection and its subsequent collaboration performance (Classen et al. 2012; Alberti et al., 2014), by (i) accounting for the regional context dimensions (Stough, Welter, Block, Wennberg, & Basco, 2015; Basco and Suwala, 2020), and (ii) investigating different partnership constellations and their subsequent innovation performance comparing small family and small non-family firms (Fang, Randolph, Memili, & Chrisman, 2016). Finally, our quantitative large-scale panel data set allows us to complement existing qualitative and conceptual work on the ability-willingness paradox (Chrisman et al. 2015, Ingram, Lewis, Barton, & Gartner, 2016; Feranita et al., 2017; Magistretti, Dell'Era, De Massis & Frattini, 2019).

THEORETICAL BACKGROUND

The innovation process involves a resource-intensive search to find commercially exploitable new combinations of knowledge to create new products and services (Fleming & Sorenson, 2004; Laursen, 2012; Giovanetti and Piga, 2017). This implies various internal and external collaborators (Chesbrough, 2003; 2006; Nieto & Santamaria, 2007; Zahra, 2012; Classen, Van Gils, Bammens, & Carree, 2012). A large body of research explains the distinctiveness of family firms in the way they innovate compared to non-family firms. As

10.5465/AMBPP.2021.184

outlined by various scholars (e.g. Classen et al., 2012; De Massis, Di Minin, & Frattini, 2015; De Massis et al., 2018; Feranita et al., 2017; Sirmon & Hitt, 2003; Zellweger), interactions between family members along with their long-term orientation, create unique resources and capabilities for family firms that may be reinvested in innovation.

As family firms attempt to manage their innovation process, family governance leads them to an apparent paradox—the ability (discretion) and the willingness (disposition) as drivers of family governance in family firms (Chrisman et al., 2015). The ability refers to 'the family owners' discretion to direct, allocate, add to, or dispose of a firm's resources' (Chrisman et al., 2015, p. 311). Willingness is 'the disposition of the family owners to engage in idiosyncratic behavior based on the goals, intentions, and motivations that drive the owners to influence the firm's behavior in directions diverging from those of non-family firms or the institutional norms among family firms' (Chrisman et al., 2015, p. 311). The ability-willingness paradox can be illustrated by studies like Matzler, Veider, Hautz, and Stadler's (2015) study of German firms who show that family management and governance are negatively related to innovation inputs but positively related to innovation outputs.

Prior research has shown that this ability-willingness paradox of family firms also exists in the context of open innovation activities, i.e., collaborations with external partners. Family firms are in general less willing to collaborate with external partners than non-family firms (Cassia et al. 2012; Nieto et al., 2015; Pittino & Visintin, 2011), but at the same time, they innovate more than their non-family counterparts (e.g., Broekaert et al., 2016; Miller et al., 2009). The necessity to collaborate with external partners, however, becomes increasingly important as one means to tackle internal resource constraints and to expand the internal knowledge base to manage the increasingly complex business environment (Seidl and Werle, 2018; Hitt, Dacin, Levitas, Arregle & Borza, 2000).

We build on arguments from De Massis, Audretsch, Uhlaner and Kammerlander (2018) and conjecture that two strategies help small family firms to resolve parts of the ability-willingness paradox. More precisely, we conjecture that small family firms focus their collaboration activities (i) on customers as well as (ii) on collaboration partners within regional proximity as two key drivers of their long-term success. This conjecture is supported by additional prior research on innovation in family firms, which revealed that small family firms could be highly innovative despite their resource constraints (De Massis et al., 2018; Lasagni, 2012; Street & Cameron, 2007; Van Burg et al., 2012). These studies indirectly point to the role of networks' types of collaboration partners (Audretsch & Belitski, 2019) and the geographical scope of the innovation process.

While both small family and non-family firms were found to have a particular interest in their relationship with customers (Balau, van der Bij, & Faems, 2020; Tagiuri and Davis, 1992; Beers & Zand, 2014), this niche strategy and customer focus as central strategic choices, are especially well-suited for small family firms. Building sustainable long-term relationships that are characterized by mutual trust, more personal networking with clients (Miller et al., 2008), open knowledge exchange and at the same time building a reputation for high-quality products, is at the heart of family businesses (Naldi, Nordqvist & Zellweger, 2008; De Massis et al., 2018). Thus, small family firms' goals and the characteristics of collaboration activities with customers are well aligned. Therefore, we expect the lower willingness of small family firms to engage with external collaboration partners as described in the ability-willingness paradox (Chrisman et al., 2015) to be attenuated in the case of customer collaborations. We therefore hypothesize:

10.5465/AMBPP.2021.184

H1: Small family firms are less willing to engage in external collaboration than small non-family firms. In the case of customers as collaborations partners, the lower willingness of small family firms to collaborate is attenuated.

Moreover, we argue that small family firms are expected to innovate more than their non-family counterparts because they are better able to govern and utilize the established long-term, high-quality trust-based relationship for beneficial, mutual knowledge exchange. The central argument constitutes the fact that small family firms manage to create and maintain the superior customer relationship and enjoy competitive advantages associated with customer loyalty, perceptions of trustworthiness of family firms, and goodwill (Beck et al., 2011; Biberman 2001; Newman et al., 2016; Zachary, McKenny, Short, and Payne, 2011). In fact, family firms show greater stewardship over their relationships with customers compared to non-family counterparts (Miller et al., 2008). We therefore hypothesize:

H2: Collaboration with customers leads to higher innovation output for small family firms than for small non-family firms.

Community embeddedness represents a second central pillar of small and medium-sized family businesses' long-term success (De Massis et al., 2018). Building on this, we argue that especially small family firms will focus on forging ties with key stakeholders in the immediate surrounding (Ahn, Minshall, & Mortara, 2015; Colombo, Laursen, Magnusson, and Rossi-Lamastra, 2012; Nijssen et al., 2012). They will likewise collaborate within close regional proximity as the fear of losing control or socio-emotional wealth does not prevail to the same extent when collaboration partners are located within close regional proximity. Therefore, we hypothesize:

H3: Small family firms' lower willingness to engage in external collaboration than small non-family firms will be attenuated in the case of geographically close collaborations partners.

Even though small family firms are strongly embedded in their local communities, they do not collaborate with all their regional network partners for innovative purposes. As outlined above small family firms focus their innovation collaboration activities on customers, as a more narrowly targeted group of partners, given the immediate benefits from this collaboration and their resource constraints. Therefore, we argue that the advantages of small family firms when innovating with customers are further enhanced when these customers are within close regional proximity. Thus, small family firms will experience an innovation output premium as compared to small non-family firms in particular, when collaborating with local customers.

H4: Small family firms innovate more when collaborating for innovation with customers within regional proximity than small non-family firms.

DATA AND METHODS

We used the Business Structure Database (BSD) and matched it with the UK Innovation survey (UKIS). The overall number of observations in the combined dataset UKIS-BSD after

10.5465/AMBPP.2021.184

eliminating missing values is 14,088 within 6,272 small firms (defined as firms with 10-49 FTE) and the panel element of 963 firms which were observed at least twice during 2002-2016. All missing values and non-applicable answers were labelled as missing and, therefore not included in our sample. Please note that use of these data does not imply the endorsement of the data owner or the UK Data Service at the UK Data Archive in relation to the interpretation or analysis of the data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

The average of a small family firms is 24.2 years while a non-family firm is 8.94 years, the share of training expenditure in family firms is 0.35 and 0.11 in non-family firms demonstrating that family firms invest more in human capital (De Massis et al. 2018). Family firms are less likely than non-family firms to use new methods of organising work responsibilities and decision making (measured by the use of a new system of employee responsibilities, teamwork, decentralisation, integration, or de-integration); a value of 0.48 for family firms compared to 0.89 in small non-family firms. Family firms have a lower share of employees that hold a degree or higher qualification in science and engineering (4.2 percent), while this share is 7.5 for non-family small firms. Small family firms also invest less in R&D. There are differences in the geographical distribution of family firms, with more of them located in Scotland, Wales, East of England, South West of England, and the East of England. Fewer family firms are in the South East, London, and the North-West, which are more populated areas of the UK.

Variables

The first step of our empirical analysis includes examining the likelihood of collaboration with suppliers, enterprise groups, competitors, consultants, universities, and customers. We used a binary variable equal to one if the firm collaborates with the respective partner types, zero otherwise. In addition, we would like to examine the likelihood of collaboration across four geographical proximities, regionally, nationally, Europe, and internationally. We use four binary variables of collaboration for innovation for regions, UK, Europe and other world equals to one, zero otherwise (Beers and Zand, 2014; Audretsch and Belitski, 2019). In the second step, we measure the effect of knowledge collaboration with customers on firm innovation. Our dependent variable is the share of new to market products is commonly used to measure innovative performance (Santamaría, Nieto, & Barge-Gil, 2009; Frenz & Ietto-Gillies, 2009; Berchicci, 2013; Arora, Cohen, & Walsh, 2016; Audretsch and Belitski, 2019). At each stage of our analysis, we used different dependent variables related to the propensity to collaborate (step 1) and innovation outcome (step 2). As explanatory variables we include four binary variables equal to one if the firm collaborates with customers regionally, nationally, in Europe, and internationally, zero otherwise (Beer & Zand, 2014; Balland, Boschma, & Frenken, 2015). Moreover, we investigate whether the firm is a family firm or not. We defined a company to be a family firm if the majority of votes are owned by the person or persons who established the firm or are members of the founding family (Miller, Le Breton-Miller & Lester, 2011; IFB, 2019). We include a number of control variables related to the firm's characteristics, which can predict innovation outcome. We control, e.g. for the level of absorptive capacity such as '*in-house R&D expenditure'* (Kleinknecht, van Montfort, & Brouwer, 2002; Santamaría et al., 2009), *'design intensity'*, *'training intensity'*, human capital (Audretsch and Belitski, 2020), '*Risks'* (Miller & Friesen, 1978), '*Process innovation', 'Firm age',* sales abroad as a measure of

10.5465/AMBPP.2021.184

internationalisation with a binary variable '*Exporter'* (Castellani & Zanfei, 2006). We include 70 industry dummies (SIC code 2 digit) (mining and quarrying is a reference category), 128 region-city fixed effects where firms are located (Aberdeen is a reference category), and seven waves fixed effects (2002-2004 period as a reference category).

Methodology

We first estimate the logistic regression model with knowledge collaboration across four geographical dimensions and six collaboration partners as dependent variables. This model is important to test the differences between small family firms and small non-family firms in their willingness to collaborate on innovation across various geographical proximities and collaborator types. We then use a multilevel mixed-effects logistic model by using a generalised estimation equation (Papke & Wooldridge, 2008) with innovation output as the dependent variable. We control for a potential selection bias which could have originated from the fact that we moved from 64,192 observations in the originally matched UKIS-BSD to 14,088 observations, where the missing values of innovation were excluded from the final sample.

RESULTS AND CONCLUSION

This paper investigates partner type and regional proximity as two important boundary conditions of the well-known ability-willingness paradox (Chrisman et al. 2014). We investigated these boundary conditions in the context of small family and small non-family firms, as small family firms are especially likely to be subject to this paradox, given their strict resource constraints and high involvement of the owner family. Building on De Massis et al. (2018), we provide arguments and empirical support that the ability-willingness paradox is not a universal phenomenon for small family firms. Instead, partner type and spatial proximity between the collaboration partners affects both the willingness to collaborate as well as the innovation output. We empirically show that (i) their willingness to collaborate for innovation varies for different types of external partners and across different geographical proximities as well as ii) the returns from knowledge collaboration vary for the type of partner and their geographical location. The empirical evidence suggests that in line with our hypothesis, small family firms have a similar propensity to collaborate on innovation with customers, while only collaboration with customers within the region provides additional innovation premiums for small family firms.

Our study is not without limitations, thus providing additional starting points for future research. First, when analysing the benefits from collaboration, we restricted ourselves to analysing collaboration activities with customers across four geographic dimensions in line with our derived hypotheses. Future studies may expand this analysis to the other types of collaboration partners within regional, national, European and worldwide scope. Second, the employed panel data is unbalanced and does not include the same number of observations within the 2002-2016 period. Third, the data does not allow us to analyse the overall collaboration network size and constellations in more detail. We could not investigate the specific number of partners that the firms collaborate with. Therefore, insights from network theories could be used in future studies to further explore the role of network size, breadth, and depth in the context of resource constraint small family business and their innovation performance.

REFERENCES AVAILABLE FROM THE AUTHORS