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Is blood always thicker than water? Family firm parents, kinship ties, and the survival of spawns

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ABSTRACT

We theorize that due to their ability to draw upon the distinctive bonding and bridging social capital resources of their family firm parents, family member spawns have longer early survival times than nonfamily member spawns from family firms, which in turn should have longer early survival times than spawns from nonfamily firm parents. We also predict that the survival enhancing effects of family parent bonding and bridging social capital are conditional on the spatial, cognitive and social proximity between the parent and the spawn. Using a population wide sample of 114,837 spawns founded in Sweden between 2000 and 2007, we find that nonfamily member spawns survive longer than spawns from nonfamily firms, and that this survival enhancing effect is contingent on the spatial and social proximity between the spawn and its parent. We also find that spawns founded by family members, on average, do not survive longer than spawns from family firms founded by nonfamily members, and that greater spatial and cognitive distance even hurt the survival of family member spawns. We discuss the contributions of our research to the spawning, family firm, and entrepreneurship literatures.

1. Introduction

A growing body of research has documented that new ventures inherit organizational resources from the founder's prior employer (henceforth: "parent firm" or "parent") that have important implications for their outcomes (Agarwal and Shah, 2014). Specifically, research on employee entrepreneurship has found that new ventures started by former employees of established firms (henceforth: "spawns")[1] inherit technological (Agarwal et al., 2004) and operational knowledge (Chatterji, 2009), as well as organizational routines and practices from their parent firms (Feldman et al., 2019; Phillips, 2005), which are transferred to the new venture through the conduit of the founder. Building on these findings, scholars have begun to investigate different types of resources that spawns may inherit from different types of parent firms (Basu et al., 2015; De Figueiredo et al., 2013; Klepper and Sleeper, 2005).

An interesting yet uninvestigated type of parent are family firms, to which the literature attributes extraordinary survival

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[1] Numerous labels have been given to companies founded by employees of established firms, including spinouts, spawns, and progeny. For simplicity, we use the term 'spawns' in this paper. Unlike corporate spin-offs, entrepreneurial spawns have no ownership affiliations with their parent firms at the time of their inception (Helfat and Lieberman, 2002), and are therefore fully independent new ventures.

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capabilities (Edelman et al., 2016; Jaskiewicz et al., 2015; Sirmon and Hitt, 2003). In spite of facing specific challenges, such as nepotism, a lack of professionalism, and conflicts of interests between family and nonfamily owners that may threaten their longevity (Gedajlovic et al., 2012), family firms are argued to enjoy a highly distinctive set of social capital resources that result from the involvement of the family in the firm, and that uniquely gear family firms towards survival (Ciravegna et al., 2020).

Given that early survival is the biggest challenge for new ventures to overcome (Agarwal et al., 2016; Josefy et al., 2017), an important question is whether new ventures that spawn from family parents enjoy better survival outcomes than those spawning from nonfamily parents due to the distinctive social capital resources of their parents. Answering this question will be highly consequential, not only because early survival is the most critical outcome—and therefore the most appropriate early performance measure—for new ventures, but also because family firms are globally the most prevalent organizational form (La Porta et al., 1999) and the single biggest source of employment (Neckebrouck et al., 2018). In this study we therefore investigate whether spawns from family parents—i.e., their founders were employees of a family firm immediately before starting their new ventures—survive longer than spawns from nonfamily parents—i.e., their founders were employees of a nonfamily firm immediately before starting their new ventures.

Following Arregle et al. (2007), we argue that the unique social capital resources of family firms comprise both family and family firm social capital. Family social capital, or the resources that become available through the kinship ties between members of the family owning the firm (Sanchez-Ruiz et al., 2019), is a form of bonding social capital that emerges from the trust, shared sense of purpose, and solidarity between members of an exclusive 'ingroup' (Putnam, 2000). What we will hence refer to as the bonding social capital of family parents, provides access to a combination of resources, such as human and financial capital, and shared or loaned labor, that family owners are willing and able to commit to their firms beyond those that nonfamily owners are willing and able to contribute to their firms (Salvato and Melin, 2008; Sirmon and Hitt, 2003). The social capital of family firms, in contrast, is a form of bridging social capital that involves relationships across different groups that typically transcend family firm boundaries (Putnam, 2000). What we will hence refer to as the bridging social capital of family parents comprises the higher degrees of community embeddedness and better relations and reputations with external parties that family firms are known to have compared to nonfamily firms (Arregle et al., 2007; Breton-Miller and Miller, 2006; Deephouse and Jaskiewicz, 2013).

First, we argue that spawns from family parents started by former nonfamily employees (henceforth: *nonfamily* member spawns) survive for longer than spawns from nonfamily parents, because the founders of the former can draw upon the superior bridging social capital of their family firm parents. Second, we argue that kinship ties between the founder and the family owning the parent (henceforth: *family* member spawns) *additionally* provide spawns with access to the bonding social capital of the family owning the parent. Access to both the bridging and bonding social capital of their family firm parents should hence lead family member spawns to survive longer than nonfamily member spawns, in line with the colloquial belief that blood is thicker than water. Overall, then we compare three types of spawns: family member spawns (i.e., familial employees from family firms who start their own ventures), nonfamily member spawns (i.e., nonfamilial employees from family firms who start their own ventures), and spawns from nonfamily firm parents. Finally, we argue that due to the relational nature of social capital, the survival-enhancing effects of family parent bridging and bonding social capital will be stronger the spatially, cognitively, and socially closer spawns remain to their family firm parents.

Using a uniquely fine-grained dataset from a comprehensive multi-cohort sample of 114,837 independent spawns founded in Sweden by former employees of established firms between 2000 and 2007, and tracking their survival until 2008, we apply survival analysis and coarsened exact matching to analyze our data. Consistent with our predictions, we find that nonfamily member spawns survive longer than spawns from nonfamily firms, and that this survival enhancing effect is contingent on the spatial and social proximity between the spawn and its parent. Against our expectations, we document that spawns founded by family members do not survive longer than spawns from family firms founded by nonfamily members, and that greater spatial and cognitive distance even hurt the survival of the former. Given our findings that family member spawns do not benefit further from having kinship ties with the family firm parent, while they even do worse than nonfamily member spawns when spatial and cognitive distance are higher, it seems that blood is not always thicker than water when it comes to spawning.

Our study contributes, first, to the spawning literature. Prior research has found that spawns inherit technological knowledge (Agarwal et al., 2004; Klepper and Sleeper, 2005) and organizational practices from their parent firms (Feldman et al., 2019; Phillips, 2005), which increases spawn performance. We contribute to this literature by showing that family firms are an important type of parent that help spawns to survive longer, which we theoretically attribute to their access to the stronger bridging social capital of their family parents. Our study also contributes to this literature by showing the empirical relevance of novel dimensions of proximity beyond the documented performance enhancing effects of technological proximity between the parent and the spawn (see, e.g., Basu et al., 2015; Chatterji, 2009; Sapienza et al., 2004). We argue that due to the intrinsically relational nature of family firm bridging social capital, its survival enhancing effect is contingent on the spatial, cognitive and social proximity between the spawn and the parent, and report findings consistent with this explanation.

Our study also contributes to the family firm literature at the intersection of three research streams in that literature. First, our study contributes to the literature arguing that family firms can be distinguished from nonfamily firms based on the unique social capital resources that family owners bring to their firms (Carr et al., 2011; Pearson et al., 2008; Zahra, 2010). Consistent with the distinction between family social capital and family firm social capital made in this literature (Arregle et al., 2007), our study suggests there to be differential performance implications of spawn access to family parent firm bridging social capital and family bonding social capital, respectively. Moreover, our finding that the survival enhancing effects of spawning from a family parent are contingent on the proximity between the parent and the spawn, suggests that various forms of proximity between 'the source' of family firm social capital and those who stand to benefit from it, constitutes an important boundary condition with respect to the value of the unique social

capital resources of family firms, more generally.

Second, we contribute to the literature on family firms as a context of employment and (employee) entrepreneurship. While recent studies have documented several disadvantages that nonfamily member employees suffer from while working for these organizations compared to employees of nonfamily firms (Neckebrouck et al., 2018; Tabor et al., 2018), our study suggests that nonfamily employees benefit more from their employment in family firms than employees of nonfamily firms after they leave these firms to start their own business.

Third, our study informs the literature on family firm entrepreneurship. While most research has investigated entrepreneurial behaviors and outcomes of family businesses (e.g., Jaskiewicz et al., 2015; Minola et al., 2016; Nordqvist and Melin, 2010; Webb et al., 2010), our study investigates entrepreneurial activities and outcomes *outside* the scope of family ownership and control. Our finding that family firms may contribute positively to the entrepreneurial success of their former nonfamily member employees challenges a gloomy view voiced by financial economists that family firms stifle new market entry, competition, and economic development, by privileging parties inside the realm of family ownership and control at the expense of entrepreneurial activities outside of it.

Finally, our study contributes more broadly to the entrepreneurship literature on the effects of founder's prior experience on new venture survival. While prior research has shown that founder experience and relationships have positive implications for new venture survival (Dahl and Reichstein, 2007; Delmar and Shane, 2006; Linder et al., 2020), our study suggests that family firms provide a fertile soil in which employees can nurture stronger and better relationships with external stakeholders that they can leverage after starting their own ventures.

2. Theory and hypotheses

2.1. Organizations as a source of entrepreneurship

Research in the sociology of entrepreneurship has documented that most entrepreneurs were employed by established firms just before founding a new firm (Dobrev and Barnett, 2005; Sørensen and Fassiotto, 2011). Commonly referred to as 'spawns' (Elfenbein et al., 2010; Gompers et al., 2005), new ventures founded by former employees are found to benefit from access to the technological knowledge (Agarwal et al., 2004; Klepper and Sleeper, 2005) and organizational practices of their parents (Phillips, 2005). While studies initially only investigated within-industry spawns, more recent studies have also included out-of-industry spawns (Campbell et al., 2012; Eriksson and Kuhn, 2006; Feldman et al., 2019; Yeganegi et al., 2016), and have argued that employees founding new ventures outside their parent's industry are also able to benefit from the knowledge and experience they acquired while working for the parent (Sakakibara and Balasubramanian, 2020). These findings suggest that parent firms are an important repository of resources that founders can draw upon after starting their own ventures (Agarwal and Shah, 2014; Audia and Rider, 2006).

Not all spawns are born equally, however, as parent firms differ in the resources that their former employees can draw upon (Chatterji, 2009; De Figueiredo et al., 2013). In general, better parents nurture better entrepreneurs (Burton et al., 2002; Klepper and Thompson, 2010), as spawns from successful parents are likely to have access to better resources than spawns from a less successful parent (Franco and Filson, 2006). Conversely, the latter are less likely to succeed because of a likelihood for "progeny [to] assume the same resources and routines that led to the failure of their parents" (Phillips, 2002: 502). Building on social capital theory, we next theorize about the distinctive resources of family firm parents and hypothesize how access to these resources by their former employees will affect the early survival of the spawns they found.

2.2. Family firms as repositories of survival-enhancing social capital resources

Researchers in the family firm literature have argued that family firms are endowed with a unique set of resources that set them apart from nonfamily firms (Habbershon and Williams, 1999), and that drive differences in behaviors and outcomes between them (Gedajlovic et al., 2012; Habbershon et al., 2003; Sirmon and Hitt, 2003). Within this stream, some scholars have drawn upon social capital theory (Adler and Kwon, 2002; Leana and Van Buren, 1999; Nahapiet and Ghoshal, 1998), specifically, to conceptualize the nature of these resources (Arregle et al., 2007; Pearson et al., 2008; Zahra, 2010).

Social capital comprises the web of social relationships between actors that provides access to a range of resources that they can draw upon in the pursuit of their own goals (Burt, 1997; Coleman, 1988). Because the social relationships that family owners bring to their firms are generally understood to be a defining feature of family firms (Chrisman et al., 2005), social capital theory has been applied to investigate how social relationships within the family owning the firm (Sanchez-Ruiz et al., 2019) as well as family firm ties with external stakeholders (Acquaah, 2012; Zahra, 2010), provide access to a unique combination of resources that drive distinctive behaviors and outcomes (Carr et al., 2011; Pearson et al., 2008). Arregle et al. (2007) argue that family firms have access to a broader scope of social capital than nonfamily firms because they combine social capital from both the family and the firm.

To explicate the nature of these two forms of social capital in family firms and theorize the mechanisms through which spawn founders gain access to these resources, we draw upon the established distinction between bonding and bridging social capital (Gittell and Vidal, 1998; Putnam, 2000). Family social capital, or the resources that become available through the kinship ties between members of the family owning the firm (Sanchez-Ruiz et al., 2019), is a form of bonding social capital that emerges from the trust, shared sense of identity, and solidarity between members of a close and exclusive 'ingroup'. The bonding social capital that family kinship relations bring to the firm provides access to a combination of resources, including human and financial capital, as well as shared or loaned labor, that family owners are willing and able to contribute to their firms over and above what nonfamily owners are willing and able to contribute to their firms (Salvato and Melin, 2008; Sirmon and Hitt, 2003). As shown by Herrero (2018), the

bonding ties between members of the family owning the business are more exclusive and much stronger than any other type of bonding ties that emerge from non-kinship relations in both family and non-family firms.

In addition to the bonding ties provided by family social capital, family firms also have been found to possess higher levels of bridging social capital, which comprises relationships across heterogeneous groups that typically extend beyond the boundaries of the firm to external stakeholders, social networks, and resource providers (Burt, 1997). Examples of the distinctive bridging social capital of family firms include the stronger stakeholder relationships, the higher degrees of community embeddedness, and the better reputations that family firms have been documented to have with parties outside the firm (Arregle et al., 2007; Breton-Miller and Miller, 2006; Deephouse and Jaskiewicz, 2013), and which provide access to resources that are not available to the same extent to nonfamily firms.

Because the unique social capital resources that families bring to their firms have been documented to gear family firms more towards survival than nonfamily firms (Ciravegna et al., 2020; Salvato et al., 2020), Sirmon and Hitt (2003) have denoted these resources as "survivability capital". Regardless of whether the nature of these resources can or should conceptually be defined in terms of their reported outcomes (Vishwanathan et al., 2020), the unique bonding and bridging social capital resources available to family firms make them a highly resilient organizational form (Danes et al., 2009). We next theorize how the founders of new ventures spawning from family firms gain access to the bonding and bridging social capital of their parents to enhance the survival of their newly founded ventures.

2.3. Parent firm type and spawn survival

Proceeding from research showing that "valuable economic resources are often transferred from parents to spawns through the conduit of the entrepreneur" (De Figueiredo et al., 2013: 845), we argue that social capital is a key resource that spawns from family parents can draw upon to increase their survival time. Yet, different types of spawn founders will have access to different forms of parent firm social capital through different mechanisms. First, nonfamily member founders of spawns from family firm parents will have access to the *bridging social capital* of their parent firms because of their *socialization* into the parent's stakeholder relationships, community ties, and reputational communities during their employment at the parent firm that they will likely benefit from after leaving the family parent. Family member founders, second, will *additionally* have access to the *bonding social capital* of the family owning their parent firms through their ongoing *kinship ties*.

2.3.1. Access to bridging social capital through socialization

Because of the family's enduring involvement as an owner, often sustained over several generations, family firm relationships with suppliers, customers, local institutions, and communities are typically more personal, lasting, and well-informed than those of nonfamily firms (Anderson and Reeb, 2003; Miller et al., 2009). Relatedly, family firms have been shown to have higher levels of community embeddedness (Bird and Wennberg, 2014; Breton-Miller and Miller, 2006) and better reputations with key stakeholders than nonfamily firms (Deephouse and Jaskiewicz, 2013).

During their employment at a family parent, nonfamily member founders are likely to engage directly with its resource providers, stakeholders, and community representatives, which allows them to develop direct personal relationships and benefit from the stronger reputations of their family parents, even after they have left to start their own new ventures. Like all new ventures, spawns typically suffer from liabilities of newness and various forms of resource scarcity. Having acquired personal access to the resource providers, stakeholders, and community representatives of their family parents, nonfamily member founders will be able to increase the survival time of their firms over spawns from nonfamily parents. Nonfamily member founders are also likely to benefit from the stronger reputations of their family parents through spillovers effects. Consistent with prior research documenting that a stronger association with a reputable parent allows young firms to enjoy greater institutional legitimacy and realize positive externalities in a given institutional environment (Higgins and Gulati, 2003) while obtaining greater stakeholder support in their task environment, this will increase the survival time of nonfamily member spawns from family parents over spawns from nonfamily parents. We hence hypothesize:

Hypothesis 1a. Nonfamily member spawns survive longer than spawns from nonfamily firm parents.

2.3.2. Kinship-based access to family bonding social capital

Compared to the nonfamily member spawns from family parents, family member spawns *additionally* have access to the bonding social capital of the family owning their parent firms due to the kinship ties of the founder. Specifically, the family involved in the parent may not only be able and willing to provide family members with financial and human capital support that will not be available to the same degree to nonfamily member spawns, but may also bond its own social capital with external resource providers to secure financing for the family member founding the spawn (Steier, 2007). Kinship ties between the family owning the parent and the founder of the spawn thereby serve as an *additional* conduit through which family member spawns may secure access to the bonding social capital of the family owning the parent, over and above the parent's bridging social capital that is also available to nonfamily member spawns. We hence predict that family member spawns survive longer than nonfamily member spawns, which in turn have longer survival time than spawns from nonfamily parents, and hypothesize:

Hypothesis 1b. Family member spawns survive longer than nonfamily member spawns.

2.4. The moderating role of proximity

We have argued that nonfamily member spawns survive longer than spawns from nonfamily parents, but shorter than family member spawns due to their differential access to the bridging and bonding social capital of their family parents respectively. We now argue that the degree to which founders can benefit from family parent social capital is conditional upon the *proximity* between the spawn and the parent. As social capital fundamentally comprises social relationships (Granovetter, 1973), its survival benefits for spawns will be stronger the more proximate they are to their parents and deteriorate the larger the distance between them becomes.

The notion of proximity is best seen as a multi-dimensional construct, however. In a comprehensive review, Knoben and Oerlemans (2006) decompose proximity into two dimensions: spatial and non-spatial proximity. Non-spatial proximity is further decomposed into institutional, cultural, cognitive, social, technological, and organizational proximity. Because we seek to explain the survival-enhancing effects of spawn founder access to family parent bridging and bonding social capital, we first exclude institutional and cultural proximity as they do not apply at the level of analysis of our focal relationship. We then focus on those sub-dimensions that are likely to condition how easily spawns can tap into their family parents' social capital resources, the value of these social capital resources for the spawn, and the extent to which support from the family owning the parent conditions the access to such resources, as captured by spatial, cognitive, and social proximity respectively.

2.4.1. Spatial proximity

Building on the view that firms benefit from being located in geographical proximity to each other (Broekel and Boschma, 2012), we argue that being spatially more proximate to the family parent firm will strengthen the survival-enhancing effect of a spawn's access to its bridging and bonding social capital.

As explained above, the founders of nonfamily member spawns are likely to have engaged with important resource providers, stakeholders, and community representatives during their employment at the family parent and have developed relationships with these parties that are personal, lasting, and well-informed. Because relationships between firms and their external stakeholders are typically spatially confined (Driscoll and Starik, 2004), the extent to which nonfamily member spawn founders are able to tap in, and benefit from, this bridging social capital is contingent upon the spatial proximity between the spawn and its parent. With respect to new ventures, specifically, Sorenson and Audia (2000) explain that entrepreneurs often remain rooted in their region of origin precisely because personal relationships with external stakeholders can help entrepreneurs to raise capital, recruit employees and suppliers, and attract customers, all of which are likely to contribute to spawn survival. Spawns that remain closer to their family firm parent can therefore more easily tap into these resources that become available through these relationships. Likewise, firm reputations tend to be community specific (George et al., 2016). As research has shown that reputational spillovers between firms are more likely to occur when firms are spatially proximate (Doshi et al., 2013), nonfamily member spawns should be better able to tap into their family parent's reputation the more spatially proximate they are.

Conversely, the more spatially distant nonfamily member spawns are located from their parents, the more difficult it will be for them to benefit from the superior stakeholder relationships and reputations of their family parents as "social capital depreciates as one transports it from the regions in which it had been developed" (Dahl and Sorenson, 2012: 1086). Not only do existing stakeholder relationships and parent reputations become less valuable in spatially more distant contexts, but an over-reliance on stakeholder relations and reputations in the original geographical context may even have adverse effects on spawn survival since maintaining relationships with distant stakeholders can be costly, especially for new ventures that are resource-constrained to begin with (Dahl and Sorenson, 2007). Therefore, the survival benefits resulting from access to the family parent bridging social capital will be larger the closer a nonfamily member spawn remains to its parent, while they will become smaller with the increase of spatial distance between them. We hence hypothesize:

Hypothesis 2a. Spatial proximity between the parent and the spawn will positively moderate the survival-enhancing effect of being a nonfamily member spawn compared to a spawn from a nonfamily firm parent, such that the effect becomes larger when spatial proximity is higher and smaller with the increase of spatial distance between them.

Family member spawns will also have similar access to their parent's bridging social capital as nonfamily member spawns have. In addition, family member spawns also have access to the bonding social capital of the family owning the parent due to their ongoing kinship ties. This gives them survival benefits over nonfamily member spawns. Yet their ability to tap into the bonding social capital of the family owning the parent will likely be much easier the spatially closer the spawn is located to its family parent. In a recent study on multiunit firms, Woo et al. (2019) document that spatial proximity facilitates interaction between units which allows them to share less mobile operating resources, such as physical assets or employees. Hence the flow of resources that become accessible through family bonding social capital, such as human capital or shared or loaned labor between a family parent and its family member spawn, is likely to be more fluid and munificent the spatially closer the spawn is to its family parent. With respect to new ventures specifically, Dahl and Sorenson (2009) have argued that individual entrepreneurs often stay spatially close to family members because proximity to their family facilitates access to family resources they can draw upon in times of need. With increasing spatial distance between the spawn and its family parent, however, the resources available through family bonding social capital will be encumbered by the costs and time associated with travel, which will decrease the survival benefits of family member spawns over nonfamily member spawns. We therefore predict:

Hypothesis 2b. Spatial proximity between the parent and the spawn will positively moderate the survival-enhancing effect of being a family member spawn compared to a nonfamily member spawn, such that the effect becomes larger when spatial proximity is higher

and smaller with the increase of spatial distance between them.

2.4.2. Cognitive proximity

The concept of cognitive proximity was initially developed by Nooteboom (1999), and captures the idea that agents (e.g., people, firms) can be similar in the way they see, understand, and evaluate the world (Wuyts et al., 2005). Others have refined this concept by understanding cognitive proximity in terms of shared 'communities of practice' (Knoben and Oerlemans, 2006). We understand cognitive proximity as the degree of relatedness between the business activities of the spawn and its parent, as captured by the relatedness of their industries of operation. We assume that higher industry relatedness implies that spawns and parents are more likely to share communities of practice.

Cognitive proximity will strengthen the survival-enhancing effect of being a nonfamily member spawn compared to a spawn from a nonfamily firm, because the closer a nonfamily member spawn remains to the industries in which the family parent firm operates, the more likely it will be that the stakeholders, community representatives, and reputational audiences will be the communities of practice into which its founder was socialized while working for the family parent. As articulated by Agarwal et al. (2004: 507) "the social capital of [same-industry] spin-out founders is likely to be more closely related to the industry that they operate in and, therefore, more valuable". As such, therefore, nonfamily member spawns will be better able to benefit from their family parent's superior relationships and goodwill with particular customers, suppliers, and stakeholders to combat the liability of newness that results from a lack of stable supplier and customer relationships in the industry in which a new venture operates (Cooper et al., 1994). Conversely, the less related the industries of operation of the spawn and its family parent are, the lower the chance that a nonfamily member founder will have established ties and reputations with relevant stakeholders in the industry of operation and the less valuable the family parent's bridging social capital will be to the spawn. Moreover, relying too much on relationships and reputations distant from one's industry of operation might lead to inefficiencies or ineffectiveness in addressing customer needs, which will decrease the survival benefits of nonfamily member spawns over spawns from nonfamily firm parents. We hence predict:

Hypothesis 3a. Cognitive proximity between the parent and the spawn will positively moderate the survival-enhancing effect of being a nonfamily member spawn compared to a spawn from a nonfamily firm parent, such that the effect becomes larger when cognitive proximity is higher and smaller with the increase of cognitive distance between them.

Next to securing access to industry-specific resource providers and stakeholders, spawns founded by members of the family owning the parent firm should also be better able to access parent's bonding social capital the more related their industries of operation are. This is because the survival-enhancing effects of the flow of human capital or the free or loaned labor from the family parent to the spawn are likely to be stronger the more related their industries of operation are, because the deployment of these resources is often, at least partially, industry-specific (Camuffo and Grandinetti, 2011). Conversely, the bonding social capital of family parents will become less survival-enhancing the less related the industries of operation of the spawn and its family firm parent are, because the resources that become available through family bonding relationships are likely to be less valuable in unrelated industries. Moreover, an overreliance on family bonding social capital in cognitively distant industries may even deter establishing new ways of acquiring these resources elsewhere. Hence the survival benefits of family member spawns relative to nonfamily member spawns should become smaller as cognitive distance becomes larger:

Hypothesis 3b. Cognitive proximity between the parent and the spawn will positively moderate the survival-enhancing effect of being a family member spawn compared to a nonfamily member spawn, such that the effect becomes larger when cognitive proximity is higher and smaller with the increase of cognitive distance between them.

2.4.3. Social proximity

The concept of social proximity is grounded in the social embeddedness literature, according to which social relationships will shape both economic behaviors and outcomes (Granovetter, 1985). Boschma (2005: 67) defines social proximity "in terms of socially embedded relations between agents at the micro-level based on friendship, kinship and past experience". Founded by former employees, all spawns enjoy some degree of social proximity to their parents, which will likely condition their access to family parent bridging and bonding social capital. Yet, we consider the tenure of the founders' employment at the parent as a key dimension in which social proximity between spawns and their parents will differ.

The longer nonfamily member founders have worked for their family parents, the more time they have spent socializing into their parent's relationships with suppliers, customers, local institutions, and communities. Because the level of trust, obligations, respect, and friendship between parties will grow stronger the longer the history of interactions between them (Granovetter, 1985; Nahapiet and Ghoshal, 1998), nonfamily member founders will be better able to secure resources from their parent firm's stakeholders the longer they have worked for them (cf., Kalnins and Chung, 2006). This will strengthen the survival benefits of nonfamily member spawns compared to spawns from a nonfamily firm. Conversely, when nonfamily member founders have worked for their family parents only briefly, they are less likely to have been granted the mandate to deal with external stakeholders and resource suppliers directly. The less likely it will therefore be that they are socialized into the bridging social capital of their parent firms, and the less they will be able to improve their survival time compared to spawns from nonfamily firms. We hence hypothesize:

Hypothesis 4a. Social proximity between the parent and the spawn will positively moderate the survival-enhancing effect of being a nonfamily member spawn compared to a spawn from a nonfamily firm parent, such that effect becomes larger when social proximity is higher and smaller with the increase of social distance between them.

For family member founders, on the other hand, the kinship ties with the family owning the parent already comprise the highest level of social proximity between the parent and the spawn (Adjei et al., 2016). As a result, their access to family bonding social capital is unlikely to increase further with the duration of their employment in the family parent. At the same time, however, nonfamily member founders may become socially closer to the family owning the parent the longer they are employed by it, and may even at some point be "admitted into the family circle, rendering their social capital appropriable" (Herrero, 2018: 455). Although it seems unlikely that the bonding social capital that nonfamily member founders develop with the family owners during their tenure at the family parent will persist to the same degree after they have left the family parent to start their own firms (Ricciardi et al., 2021), the upshot of family member founders being unable to improve their access to their family bonding social capital with the duration of their employment at the family parent, on the one hand, and nonfamily member founders possibly increasing their access to family bonding social capital the longer their tenure with the parent, on the other, is that social proximity may actually decrease the survival benefits of being a family member spawn compared to being a nonfamily member spawn from a family parent. When social distance becomes larger, however, family member spawns should still enjoy longer survival times than nonfamily member spawns because the latter will not be able to tap into the family business parent's bonding social capital due to their short tenure in such organization. We hence hypothesize:

Hypothesis 4b. Social proximity between the parent firm and the spawn will negatively moderate the survival-enhancing effect of being a family member spawn compared to a nonfamily member spawn, such that the effect becomes smaller when social proximity is higher, and larger with the increase of social distance between them.

3. Methods

3.1. Data and sample

To test our predictions, we compile a unique dataset matching firm level data to micro (individual) level data from Sweden. Sweden is a suitable context for our research, as family firms employ one third of the working population and generate an equivalent share of GDP (Andersson et al., 2018). Moreover, Sweden has an economy that is representative of other high-income countries (OECD, 2017), with levels of new venture formation comparable to—or even higher than—those documented for countries such as the United States (Heyman et al., 2019).

We use *Registerbaserad Arbetsmarknadsstatistik* (RAMS), a firm-level database, to identify *all* new firms established in Sweden in the 8 years from 2000 until 2007. We then match the firm level data obtained from RAMS to micro level data from the *Longitudinell integrationsdatabas för sjukförsäkrings- och arbetsmarknadsstudier* (LISA) database. The employee-level LISA database provides annual data on *all* employees in Sweden, including data on their employment. Matching data from RAMS with data from LISA allows us to identify and pair spawns with their parent firms. Finally, we also use the multi-generation register, which provides information on couples (e.g., individuals married or living together and/or have children together) as well as biologically linked family members (parents and children).

To ensure that spawns are independent and neither *owned* nor *controlled* by the founder's parent firm (or any other type of firm), we remove from our sample all spawns owned by other firms at founding. We also exclude spawns having more than 10 employees at founding, because in Sweden these are typically divestitures from established firms (Andersson and Klepper, 2013). We hence limit our study to all fully independent spawns that we could identify in our data. As a result, our final sample contains 114,837 independent spawns.

3.2. Variables

3.2.1. Survival

In line with prior studies, we use spawn early survival as our dependent variable. We follow spawns from their year of birth and track them until 2008. Spawns that failed are coded as 1 in the year when the event occurred, while those that survived the observation period are censored (coded as 0).[2] The year(s) of each venture's registration and termination are collected from the RAMS database.

3.2.2. Founder's family firm parents

We use the information from the multi-generation register to build a family tree for each employee of the parent firm (including owners and managers). Following Miller et al. (2007) and Cannella et al. (2015), we define family firms conservatively as firms where at least two members from the same family are employed (e.g., fathers, mothers, offspring, siblings; see Wennberg et al., 2011), with at least one of them being an owner and manager of the firm.[3] We then create two dichotomous variables. The first variable (*Spawn from Nonfamily Firm*) captures whether the spawn founder was employed in a nonfamily firm parent the year before founding the spawn. The second variable (*Family Member Spawn*) captures whether the spawn founder was a family member of the family owning the parent the year before founding the spawn. The reference category (*Nonfamily Member Spawn*) captures whether the spawn founder was a

[2] Following Argyres and Bigelow (2007), we exclude mergers and split-ups because they represent ambiguous cases of firm failure. Our main results are similar if we treat these observations as survivors until the year they split/merged.

[3] We performed a robustness test with an alternative measure of family firm parent. Such test is discussed in detail in the robustness tests section.

nonfamily member of the family owning the parent the year before founding the spawn. We use this as the reference category since it best enables a comparison between different types of spawns. We remove spawns founded by two or more former employees of different parents.[4]

3.2.3. Spatial proximity

Following prior research, we measure *spatial proximity* by taking the absolute value of the reverse-score of the natural logarithm of the distance from a spawn's municipality to its parent's municipality in terms of travel time (Johansson et al., 2002).

3.2.4. Cognitive proximity

Research suggests that firms are cognitively proximate when they belong to a 'community of practice' and can therefore communicate effectively (Torre and Rallet, 2005). Following Nowińska (2019), we measure *cognitive proximity* by assessing how close a spawn's industry is to its parent's. We use the Neffke and Henning (2013) approach, which captures how related industries are based on labor flows between 4-digit industries as classified by the Swedish Standard Industrial Classification (SNI). Because the distribution of this variable is strongly right-skewed, we follow Neffke et al. (2017) and transform the variable to map values between 0 and 1 onto the interval [−1,0] and values from 1 to infinity onto the interval [0,1). We assign a 1 to spawns operating in the same 4-digit industry as the founder's parent. This variable becomes symmetrically distributed around zero and maps the index onto the interval [−1,1], where −1 denotes maximum distance and +1 maximum proximity.

3.2.5. Social proximity

To operationalize social proximity, we seek to capture the degree to which the founder was socialized at the parent. Scholars have long argued that an individual's tenure at a firm is particularly important in determining her access to relevant job-specific and firm-specific resources (Katz, 1978), as the longer an employee works at a firm, the better able she will be to establish relationships with co-workers, clients and other firm stakeholders (Lin, 1999; Ng and Feldman, 2011). We hence measure social proximity by the number of years that a spawn's founder has worked for her parent.

3.2.6. Control variables

We control for *industry density*, operationalized as the natural logarithm of the number of firms competing in the same 2-digit industry as the spawn. *Industry market size* is operationalized as the natural logarithm of the net sales for firms in the same 2-digit industry as the spawn. Because the founders' stock of human capital may drive spawn survival (Brüderl et al., 1992), we also control for *founder's education*, measured as the number of years the founder has spent in education, and the *founder's prior industry experience* as measured by the number of years she has been working in the same 2-digit industry as the spawn prior to founding. Because a founder's prior founding experience may also impact spawn survival, we control for *founder's prior start-up experience* measured as a dichotomous variable taking the value of 1 if the founder has started a new business prior to the current one and 0 if otherwise. Because the structural position held by the founder as an employee in the parent is expected to facilitate the acquisition of resources (Burton et al., 2002), we control for *founder's structural position at parent* through a dichotomous variable taking the value of 1 if the salary of the founder in the parent was in the top-10 percentile vis-à-vis all other employees and 0 if otherwise. Moreover, as the amount and type of founder's occupational experience may be a signal for a new venture's legitimacy to outsiders, we control for *founder's horizontal affiliations* as the number of years the founder has worked for prominent firms in the industry (Higgins and Gulati, 2003). We consider a firm to be prominent if its performance (measured as EBIT) for a given year was in the top-10 percentile of its industry. Because the liability of smallness might limit spawns' competitive responses and lead to lower survival rates, we control for the *number of founders*[5] and *spawn size* using firm's net sales. We also control for *spawn equity capital* and *spawn liabilities-to-assets (L/A) ratio*[6] to capture differences in financial resources at founding. Because the *size* of the *parent* may affect the survival of spawns (Elfenbein et al., 2010), we control for the net sales of the parent. We also control for the *performance* of the *parent,* using the parent's firm EBIT to account for the possibility that spawns from successful parents may have better resources and practices to draw upon (Burton et al., 2002).[7] Both variables were calculated for the last year the founder was employed by the parent. We also control for *parent entrepreneurial proclivity* (Burton et al., 2002), by dividing the number of spawns created by its employees by the total number of employees at the parent. This variable was calculated between the 1990 and the year before the spawn was founded. We control for *parent employee turnover* as the difference in employment between the two years before the spawn was founded. We also control for the status of the parent, i.e., 1 if the *parent is defunct* in the founding year of the spawn and 0 if it is still alive. Finally, in our analyses we control for industry and cohort fixed effects by including dummies.

Table 1 summarizes the descriptive statistics and correlations among all variables used. Because some of the information in Table 1 is not straightforward to interpret as some variables are transformed while others are time-invariant (thus repeated over the panel), we provide below a short description of our sample. Spawns in our sample have, on average, 1 founder and 930,676 Swedish *kronor* in net

[4] As a robustness test, we ran our analyses on a sample in which we include spawns with multiple founders coming from different employers, but from the same type of employer (e.g., cofounder 1 from family firm employer A and cofounder 2 from family firm employer B). Our main results hold.

[5] For spawns with multiple founders, founder-level controls were averaged across spawns.

[6] This percentage variable is expressed in decimal form.

[7] We have replaced missing values using size- and industry-averaged values.

Table 1
Descriptive statistics and correlation matrix.

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Spawn from nonfamily firm	1.000										
2. Family member spawn	−0.404	1.000									
3. Nonfamily member spawn	−0.890	−0.058	1.000								
4. Spatial proximity	−0.135	0.105	0.096	1.000							
5. Cognitive proximity	−0.026	0.033	0.012	0.028	1.000						
6. Social proximity	−0.054	0.060	0.029	0.070	−0.007	1.000					
7. Industry density (ln)	0.010	−0.002	−0.010	−0.022	0.128	0.027	1.000				
8. Industry market size (ln)	−0.003	−0.015	0.011	−0.003	−0.036	−0.025	−0.268	1.000			
9. Founder's education	0.109	−0.050	−0.094	−0.112	0.055	−0.060	0.067	−0.050	1.000		
10. Founder's prior industry exp.	−0.051	0.047	0.032	0.029	0.393	0.087	0.095	−0.037	−0.005	1.000	
11. Founder's prior start-up exp.	0.013	−0.005	−0.012	0.002	−0.069	−0.173	−0.026	−0.013	−0.018	0.108	1.000
12. Founder's structural position at parent	−0.016	0.140	−0.052	0.088	0.122	0.055	0.027	0.022	0.032	0.080	−0.046
13. Founder's horizontal affiliations	0.030	−0.075	0.005	−0.153	−0.035	0.288	0.060	−0.016	0.031	0.027	−0.148
14. Number of founders	−0.002	−0.007	0.006	0.003	0.049	0.044	−0.012	0.027	0.006	0.065	−0.006
15. Spawn size[a]	−0.048	0.041	0.032	0.032	0.138	0.049	0.032	0.149	−0.043	0.146	−0.069
16. Spawn equity capital[a]	−0.015	0.021	0.006	−0.001	0.043	0.075	0.018	0.018	0.031	0.076	−0.031
17. Spawn L/A ratio	0.006	−0.004	−0.004	−0.005	−0.012	−0.016	0.003	0.000	−0.013	−0.009	0.021
18. Parent firm size[a]	0.155	−0.148	−0.096	−0.354	−0.164	0.132	0.027	−0.008	0.095	−0.114	−0.049
19. Parent firm performance[a]	−0.068	0.028	0.060	0.034	−0.029	0.050	−0.000	−0.001	−0.076	0.010	−0.018
20. Parent firm entrepreneurial proclivity	−0.052	0.206	−0.046	0.246	0.148	−0.097	−0.024	0.031	−0.088	0.096	0.022
21. Parent firm employee turnover[a]	−0.040	0.004	0.042	0.005	0.002	−0.110	0.002	0.004	−0.011	0.008	0.022
22. Parent firm defunct	0.053	0.019	−0.067	0.057	0.062	−0.096	−0.025	0.051	−0.023	0.023	0.036
Mean	0.862	0.025	0.113	3.807	0.413	3.239	10.088	9.877	11.923	2.543	0.206
S.D.	0.345	0.158	0.316	1.284	0.671	2.514	0.918	1.269	2.349	2.986	0.404
Min	0.000	0.000	0.000	0.000	−1.000	1.000	1.946	6.917	6.000	0.000	0.000
Max	1.000	1.000	1.000	6.862	1.000	12.000	11.130	15.444	21.000	12.000	1.000

Variable	12	13	14	15	16	17	18	19	20	21	22
12. Founder's structural position at parent	1.000										
13. Founder's horizontal affiliations	−0.043	1.000									
14. Number of founders	0.049	0.028	1.000								
15. Spawn size[a]	0.116	0.022	0.129	1.000							
16. Spawn equity capital[a]	0.061	0.062	0.074	0.271	1.000						
17. Spawn L/A ratio	−0.006	−0.011	−0.005	−0.027	−0.203	1.000					
18. Parent firm size[a]	−0.197	0.405	0.008	−0.042	0.013	−0.003	1.000				
19. Parent firm performance[a]	−0.010	0.272	−0.017	0.009	0.006	−0.001	0.095	1.000			
20. Parent firm entrepreneurial proclivity	0.352	−0.285	0.029	0.071	0.013	0.003	−0.583	−0.009	1.000		
21. Parent firm employee turnover[a]	−0.019	−0.001	−0.008	0.004	−0.003	−0.003	−0.025	0.105	−0.000	1.000	
22. Parent firm defunct	0.134	−0.159	−0.009	0.015	−0.017	0.014	−0.278	−0.055	0.353	−0.022	1.000
Mean	0.192	1.656	1.018	6.678	3.149	0.913	10.995	3.321	0.117	0.187	0.133
S.D.	0.394	1.976	0.160	1.554	3.861	4.329	2.752	7.784	0.169	2.505	0.340
Min	0.000	0.000	1.000	0.000	−11.520	0.000	−12.050	−17.588	0.000	−8.846	0.000
Max	1.000	10.000	7.000	14.336	14.007	647.000	19.159	17.696	1.000	9.294	1.000

$N = 292{,}513$ firm-year observations from 114,837 firms.
Notes: Correlations with an absolute value greater than 0.004 are significant at $p < 0.05$.
[a] This variable has been transformed using the inverse hyperbolic sine transformation.

sales (median = 493,000 Swedish *kronor*). In terms of founder's background, the average years of formal education of spawn founders is 12 years whereas their average length of prior experience in the same industry as the spawn is 2.5 years. Moreover, 22.6% of the spawns have at least 1 founder who started a firm in the past. In terms of the proximity variables, the average travel time between spawn and parent (i.e., reverse-score of spatial proximity) is 66 minutes (median = 18.2 minutes). Moreover, 21.8% of spawns were started in the same 4-digit industry as the founder's parent (i.e., cognitive proximity). Finally, the average length of spawn's founder tenure in the parent (i.e., social proximity) is 3.3 years (median = 2 years). Regarding parents, their average net sales the last year the

founder was employed by them is 1.3 billion Swedish *kronor* (median = 22.3 million Swedish *kronor*), while 13.3% of parents ceased to exist in the founding year of the spawn.[8]

3.3. Empirical specification

To estimate the effects of our covariates on spawn survival, we apply parametric survival models. Compared to semiparametric models, such as Cox regression, parametric models assume a particular shape for the hazard rate, understood as the probability of experiencing an event at time t_i conditional on having survived to time t_i. Based on the Akaike's Information Criterion (AIC) score (Cleves et al., 2016), our initial examination demonstrates that the lognormal distribution provides a better fit for the data than alternative ones we tested, including Weibull, Gompertz, exponential and log-logistic models. Lognormal models have been used before in new venture survival studies (e.g., Saridakis et al., 2008).[9]

4. Results

Table 2 displays the survival differences between the three types of spawns in our sample for different time-at-risk periods, allowing a first glance at our results. At face value, Table 2 shows the expected survival benefits of nonfamily member spawns (reference category), over spawns from nonfamily firm parents, and of family member spawns over nonfamily member spawns. We next analyze these results in more detail.

Table 3 presents the results of the lognormal survival analysis where positive coefficients denote an increase in the survival time while negative coefficients a decrease.[10] Model 1 includes the control variables together with the industry and cohort dummies. In Model 2 we test hypotheses 1a and 1b by comparing three groups of spawns: *Spawns from Nonfamily Firms*, *Family Member Spawns* and *Nonfamily Member Spawns* as the reference category. Model 2 shows that *Spawns from Nonfamily Firms* have significantly shorter survival times than *Nonfamily Members Spawns* ($\beta = -0.071$; $p < 0.001$), while the effect of being a *Family Member Spawn* compared to a *Nonfamily Member Spawn* on survival is statistically insignificant ($\beta = -0.011$; $p > 0.05$). We have plotted both the adjusted predicted values as well as the marginal effects, while keeping all other covariates fixed at their means in Figs. 1a and b, respectively. The height of the three vertical bars in Fig. 1a captures the median survival time of spawn types and shows that the median survival time for *Spawns from Nonfamily Firms*, *Nonfamily Member Spawns*, and *Family Member Spawns* is approximately 3.15, 3.38 and 3.35 years, respectively. The height of the two vertical bars in Fig. 1b captures the *difference* in median survival time between spawn types and the reference category (i.e., nonfamily member spawns), while the vertical lines on the top of each bar represent 95% confidence intervals. Confidence intervals that do not include zero (i.e., the thick black horizontal line) represent statistically significant differences in median survival times between the spawn category assessed and the reference category. Fig. 1b shows that the median survival time for *Spawns from Nonfamily Firms* is significantly lower (0.23 points or 7.4%) compared to *Nonfamily Member Spawns*, while contrary to our predictions, the median survival time for *Family Member Spawns* is similar to that of *Nonfamily Member Spawns*. These results support Hypotheses 1a, but not Hypothesis 1b. Apparently, spawning from a family firm creates survival benefits over spawning from nonfamily firms, while having a member of the family owning the parent as the founder does not create any *additional* survival benefits.

To test Hypothesis 2a and 2b, we include the spatial proximity variable together with its interaction with the two spawn type variables in Model 3. These interaction terms include *Spawn from Nonfamily Firm * Spatial Proximity* and *Family Member Spawn * Spatial Proximity*, with *Nonfamily Member Spawn* again being the reference category. The coefficient of the first interaction term is negative and statistically significant ($\beta = -0.034$; $p < 0.001$) whereas the coefficient of the second interaction term is positive and statistically significant ($\beta = 0.061$; $p < 0.01$). Because statistical tests of interaction terms in nonlinear models may be misleading as the sign and significance of the interaction coefficients may not reflect the true sign or significance of the underlying relationships across the observed values of the predictor variables, we follow Greene (2010) and supplement our analysis with a marginal effects analysis to test our hypotheses.

Fig. 2a shows the adjusted predictions of the spawn type on median survival time both for low (median − 2.s.d. = 1.5) and high spatial proximity (median + 2.s.d. = 6.7). In Fig. 2b, we show the marginal effects for the interaction term, while keeping all other covariates fixed at their means. Confidence intervals that do not include zero represent statistically significant differences in median survival times between the spawn category assessed and the reference category for the given value of the moderating variable. Hypothesis 2a is supported, as being a spawn from a nonfamily firm parent that is spatially proximate to the parent firm yields a 0.55 points (17.3%) lower median survival time (compared to nonfamily member spawns), whereas being spatially distant from the parent does not significantly change the survival time of spawn from a nonfamily firm parent (compared to nonfamily member spawns). Hypothesis 2b is also supported, as family member spawns that are spatially proximate to the parent enjoy a 0.42 points (11.4%) higher median survival time (compared to nonfamily member spawns), while being spatially distant entails a 0.59 points (23.3%) lower median survival time than nonfamily member spawns. Consistent with our theoretical arguments, the survival enhancing effect of

[8] For time-invariant variables, i.e., founder, proximity and parent firm characteristics, these values are described for one firm-year observation otherwise they would be inflated by the number of surviving firms.

[9] Results are robust to a wide array of other parametric (i.e., Log-logistic, Weibull, Gompertz, and Exponential), semi-parametric (i.e., Cox proportional hazard) and time-discrete (i.e., complementary log-log) models. Results are available from the authors upon request.

[10] This is because we estimate the model with an accelerated failure time (AFT) specification, which expresses the impact of covariates as extended life span rather than reduced hazard of death.

Table 2
Survival function.

Time	Family firm parent		Nonfamily firm parent
Year	Family member spawn	Nonfamily member spawn	Spawn from nonfamily firm parent
1	76%	75%	71%
2	64%	62%	56%
3	56%	53%	47%
4	50%	45%	40%
5	46%	41%	35%
6	41%	37%	31%
7	39%	34%	28%
8	37%	31%	25%

Notes: $N = 114{,}837$.

spawning from a family parent decreases with spatial distance. Unexpectedly, however, the survival time of family member spawns even becomes lower than that of nonfamily members spawns when spatial distance becomes higher. We will return to this result below.

Model 4 includes the cognitive proximity variable together with its interaction with the two spawn type variables. The interaction between spawn from nonfamily firm and cognitive proximity is statistically insignificant ($\beta = 0.008$; $p > 0.05$), whereas the interaction between family member spawn and cognitive proximity is positive and statistically significant ($\beta = 0.070$; $p < 0.05$). Fig. 3a shows adjusted predictions of the spawn type on median survival time both for low cognitive proximity (median − 2.s.d. = −0.7) and high cognitive proximity (max = 1). In Fig. 3b, we further probe our findings by showing the marginal effects for the interaction term while keeping the covariates fixed at their means. Overall, these findings do not support Hypothesis 3a as the difference in survival time between spawns from nonfamily firms and nonfamily member spawns does not change with different levels of cognitive proximity (i.e., the height of the bar is similar for both low and high cognitive proximity). Our findings only partially support hypothesis 3b. Although the interaction term is positive and statistically significant, the difference in survival time between family and nonfamily member spawns is not statistically different from zero when cognitive proximity is high, while the survival time of family member spawns is significantly shorter (0.27 points or 8.9%) than that of nonfamily member spawns when cognitive proximity is low. Different from the arguments behind Hypothesis 3b, however, the positive coefficient of the interaction term seems to be driven by a significantly lower survival time of family member spawns under conditions of high cognitive distance, rather than an increase of survival time when cognitive proximity is high. It again is interesting to observe that family member spawns have shorter survival times than nonfamily member spawns when they move further away from their parent's industry of operation. We return to this below.

Model 5 includes the social proximity variable together with its interaction with the two spawn type variables. The interaction term for spawn from nonfamily firm and social proximity is negative and significant ($\beta = -0.010$; $p < 0.01$), whereas the one for family member spawn and social proximity is statistically insignificant ($\beta = 0.006$; $p > 0.05$). Fig. 4a shows adjusted predictions of spawn type on median survival time for both low (min = 1) and high social proximity (median + 2.s.d. = 7). In Fig. 4b, we probe our findings further by showing the marginal effects for the interaction term while keeping all other covariates fixed at their means. Hypothesis 4a is supported. While for a spawn from a nonfamily firm parent being socially closer to the parent firm yields a 0.38 points (11.5%) lower median survival time compared to nonfamily member spawns, being socially more distant yields a 0.15 points (5%) lower median survival time than nonfamily member spawns. On the other hand, our findings do not support Hypothesis 4b as the difference in survival time between family and nonfamily member spawns is not statistically different from zero at different levels of social proximity (instead of the theorized longer survival time for family member spawns over nonfamily member spawns for high social distance).

4.1. Robustness tests

4.1.1. Alternative measure of family firm parent

While our data is highly fine grained as it provides information on family relationships among individuals, it does not provide information about the percentage of ownership that owners have on the firm. To ensure that all the parents that we have identified as family firms are fully owned by the family, we build an alternative measure for family firm parent based on the percentage of family owner-managers (number of family owner-managers divided by number of total owner-managers, where owner-managers are those running the firm who also declare part ownership to the tax authorities) and consider those parent family firms that are fully owned and run by members of the same family. This approach yielded a small increase in the number of spawns from nonfamily firm parents (from 98,684 to 101,079) and a small decrease in both nonfamily member and family member spawns (from 13,357 to 11,031 and from 2796 to 2727, respectively). To further test the robustness of our findings, we re-ran our analyses with this alternative measure of family firm parent. The results are consistent with our main results (see Table A.1. in the Appendix).

4.1.2. Matching

Matching estimators allow us to control for selection into treatment bias by generating a matched sample including a treatment and control group that are highly similar with respect to relevant observable characteristics. The main aim of matching is to ensure that the treated and control groups are 'balanced' in that their covariates have comparable distributional characteristics. In our case it is important to generate a matched sample of treatment and control groups that are as similar as possible in terms of founder, spawn, and

Table 3
Family firm parents and spawn survival.

	Model 1	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H4)	Model 6
Industry density (ln)	0.075***	0.075***	0.075***	0.073***	0.075***	0.074***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Industry market size (ln)	−0.032***	−0.032***	−0.032***	−0.033***	−0.032***	−0.033***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Founder's education	−0.003*	−0.003*	−0.002*	−0.003*	−0.001	−0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Founder's prior industry exp.	0.025***	0.025***	0.025***	0.022***	0.024***	0.021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Founder's prior start-up exp.	−0.129***	−0.128***	−0.128***	−0.122***	−0.116***	−0.109***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Founder's structural position at parent	0.037***	0.037***	0.037***	0.034***	0.030***	0.026***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Founder's horizontal affiliations	0.009***	0.009***	0.009***	0.009***	0.005**	0.005**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Number of founders	0.214***	0.214***	0.213***	0.209***	0.208***	0.202***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Spawn size[a]	0.114***	0.114***	0.114***	0.113***	0.114***	0.113***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Spawn equity capital[a]	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Spawn L/A ratio	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm size[a]	−0.008***	−0.006***	−0.006***	−0.005***	−0.006***	−0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm performance[a]	0.001**	0.001*	0.001*	0.001*	0.001*	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Parent firm entrepreneurial proclivity	0.219***	0.228***	0.225***	0.217***	0.240***	0.228***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Parent firm turnover[a]	−0.002*	−0.002*	−0.002*	−0.002*	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm defunct	−0.061***	−0.055***	−0.053***	−0.056***	−0.050***	−0.050***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Spawn from nonfamily firm		−0.071***	0.065*	−0.072***	−0.038**	0.073*
		(0.009)	(0.030)	(0.010)	(0.014)	(0.032)
Family member spawn		−0.011	−0.301***	−0.037	−0.053	−0.332***
		(0.020)	(0.089)	(0.023)	(0.034)	(0.092)
Spatial proximity			0.034***			0.027***
			(0.007)			(0.007)
Spawn from nonfamily firm * Spatial proximity			−0.034***			−0.030***
			(0.007)			(0.007)
Family member spawn * Spatial proximity			0.061**			0.057**
			(0.020)			(0.020)
Cognitive proximity				0.035**		0.035**
				(0.012)		(0.012)
Spawn from nonfamily firm * Cognitive proximity				0.008		0.009
				(0.013)		(0.013)
Family member spawn * Cognitive proximity				0.070*		0.051
				(0.028)		(0.028)
Social proximity					0.023***	0.021***
					(0.003)	(0.003)
Spawn from nonfamily firm * Social proximity					−0.010**	−0.008*
					(0.003)	(0.003)
Family member spawn * Social proximity					0.006	0.004
					(0.007)	(0.007)
Intercept	−0.159*	−0.123	−0.268***	−0.098	−0.201**	−0.283***
	(0.068)	(0.068)	(0.074)	(0.069)	(0.069)	(0.074)
Industry dummies	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Cohort dummies	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Log pseudolikelihood	−109,725.03	−109,689.06	−109,665.00	−109,638.59	−109,599.39	−109,529.90
Wald χ^2	18,011.23	18,085.61	18,130.35	18,218.36	18,288.18	18,455.89
N	292,513	292,513	292,513	292,513	292,513	292,513
Number of firms	114,837	114,837	114,837	114,837	114,837	114,837
Number of failures	62,172	62,172	62,172	62,172	62,172	62,172

Notes. This table presents the results of a parametric survival model with a lognormal distribution. Robust standard errors in parentheses.
[a] This variable has been transformed using the inverse hyperbolic sine transformation.
* $p < 0.05$.
** $p < 0.01$.

*** $p < 0.001$.

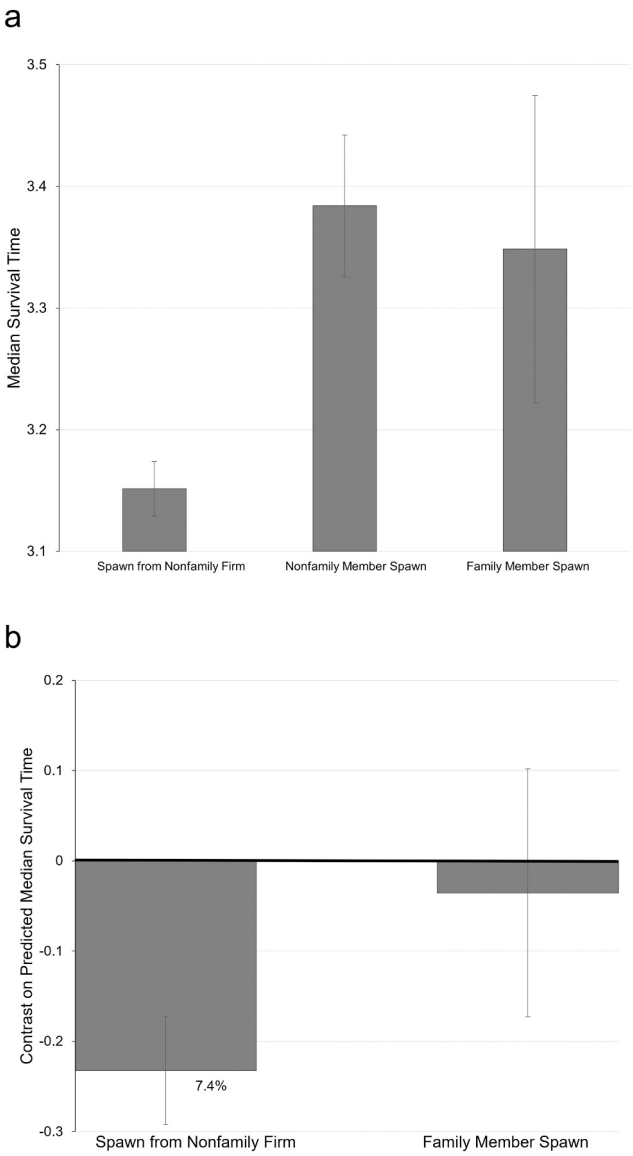

Fig. 1. a. Family firm parents and spawn survival (adjusted predicted values). b. Family firm parents and spawn survival (marginal effects at the means of spawn type on median survival time (ref: nonfamily member spawn)).

parent characteristics, but which differ in them being from family vs. nonfamily firm parents. Using this procedure, we can be more confident that the observed survival differences are driven by having a family parent rather than by confounding factors of the founder's, spawn's, or parent's quality.

We use Coarsened Exact Matching (CEM) to ensure that spawns whose founders used to work for a family firm parent and spawns whose founders used to work for a nonfamily firm parent are as similar as possible on a whole array of observable characteristics. Compared to other matching techniques, CEM is a richer matching algorithm that produces lower causal estimation errors, model-dependence, bias, and inefficiency (Iacus et al., 2012).[11] We use 7 matching variables: to capture the founder's quality in terms of abilities, skills and performance in the workplace we used *founder's salary at the parent* and *founder's education* as the number of years the founder has spent in former school education; to capture differences in spawn resources at founding we used *spawn size* (net sales),

[11] Our results are robustness when using one-to-one propensity score matching as an alternative analytical technique. Results are available from the authors upon request.

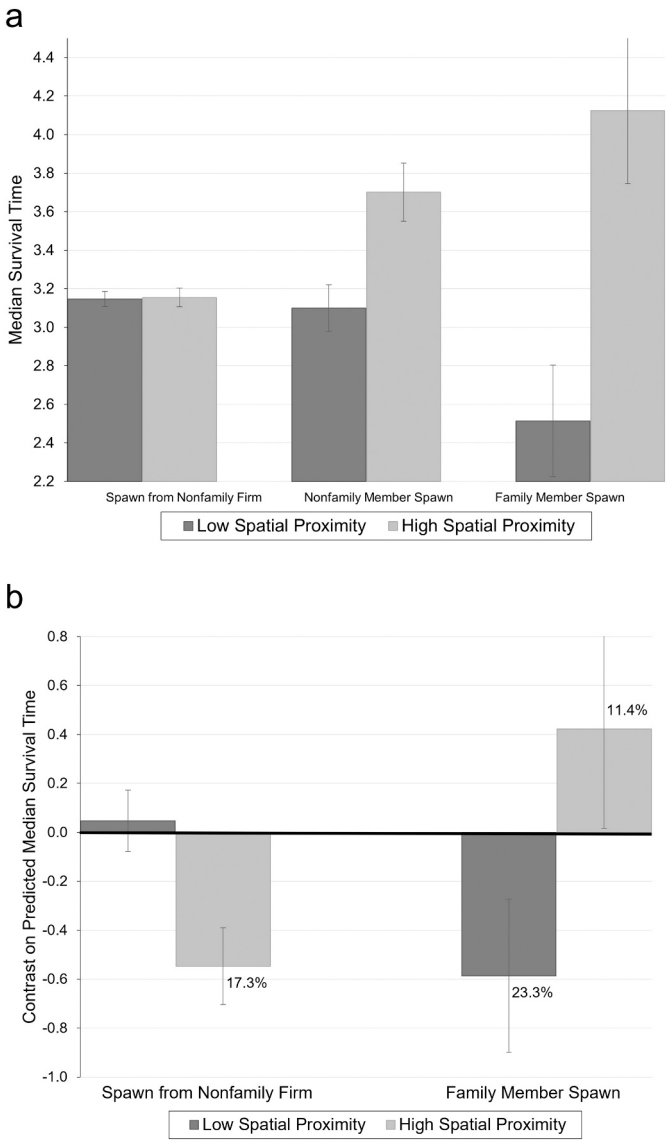

Fig. 2. a. Spatial proximity, family firm parents and spawn survival (adjusted predicted values). b. Spatial proximity, family firm parents and spawn survival (marginal effects of spawn type and moderating effect of spatial proximity, on median survival time (ref: nonfamily member spawn)).

spawn L/A ratio, and *spawn equity capital*; finally, to capture the quality of the parent in terms of resources and routines we used *parent size* (net sales) and *performance* (*EBIT*). CEM reduced our sample to 50,696 spawns. Tables A.2 and A.3 in the Appendix display mean comparison tests for spawns from nonfamily and family parents for the full and matched samples, respectively. The results of our analyses in the matched sample are reported in Table 4 and are consistent with our main results.

5. Discussion

We find that nonfamily member spawns from family firm parents survive longer than spawns from nonfamily firm parents, and that this survival enhancing effect is conditional on the spatial and social proximity between these spawns and their parents. These findings support our theorizing that spawning from family firms provides access to the superior bridging social capital of their parents, and that the resulting survival benefits are proximity contingent due to the relational nature of bridging social capital. Against our theoretical predictions, however, we find that family member spawns do not enjoy additional survival benefits over nonfamily member spawns, and that only spatial proximity increases the survival benefits of kinship ties between the founder of the spawn and the family owning the parent. Moreover, we find that increasing spatial and cognitive distance between family member spawns and their parents even decreases the survival time of family member spawns compared to nonfamily member spawns. Overall, therefore, blood is not always thicker than water in the context of entrepreneurial spawning. We next discuss the implications of our findings at the intersection of the

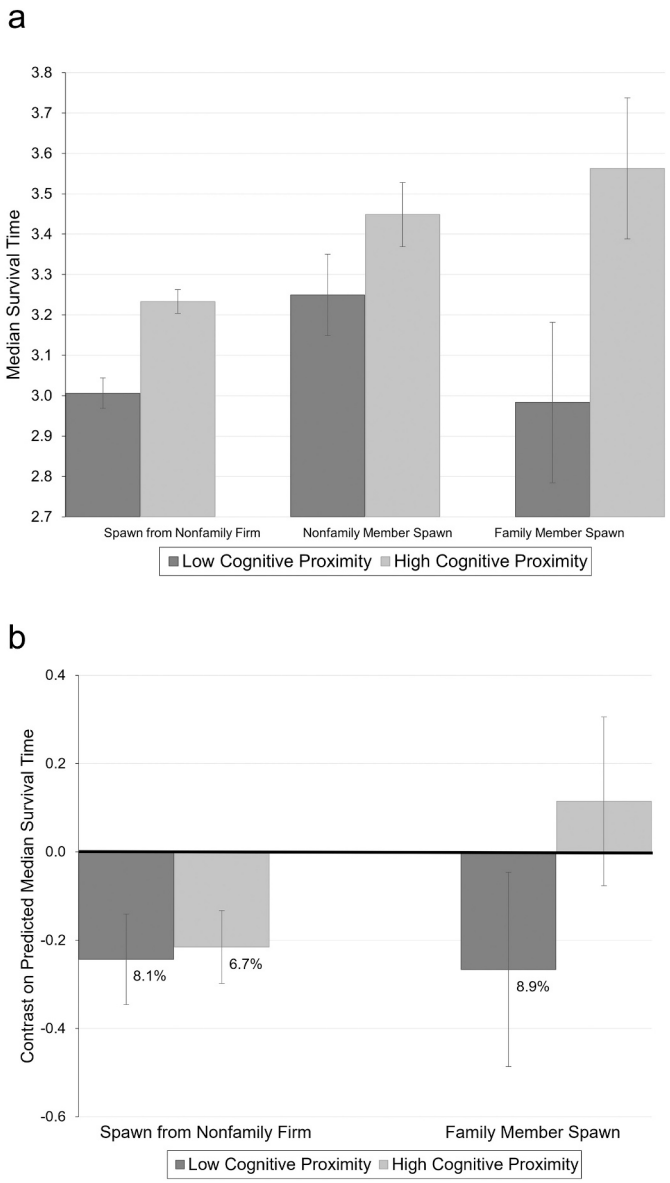

Fig. 3. a. Cognitive proximity, family firm parents and spawn survival (adjusted predicted values). b. Cognitive proximity, family firm parents and spawn survival (marginal effects of spawn type and moderating effect of cognitive proximity, on median survival time (ref: nonfamily member spawn)).

spawning, family firm, and entrepreneurship literatures.

5.1. Spawning literature

Our study contributes to the spawning literature by theorizing that family parent firms are a unique repository of resources that spawns can draw upon to increase their early survival time. Specifically, we extend this literature by suggesting that next to the technological knowledge (see, e.g., Agarwal et al., 2004; Basu et al., 2015) and organizational practices of parent firms investigated by prior research (see, e.g., Phillips, 2005), access to the unique bridging social capital resources of family parent firms can also contribute to the survival of the new ventures spawning from them, as shown by our results. Given the relational nature of the bridging social capital of family firms, our finding that the survival enhancing effect of these resources is conditional on spatial and social proximity supports this interpretation.

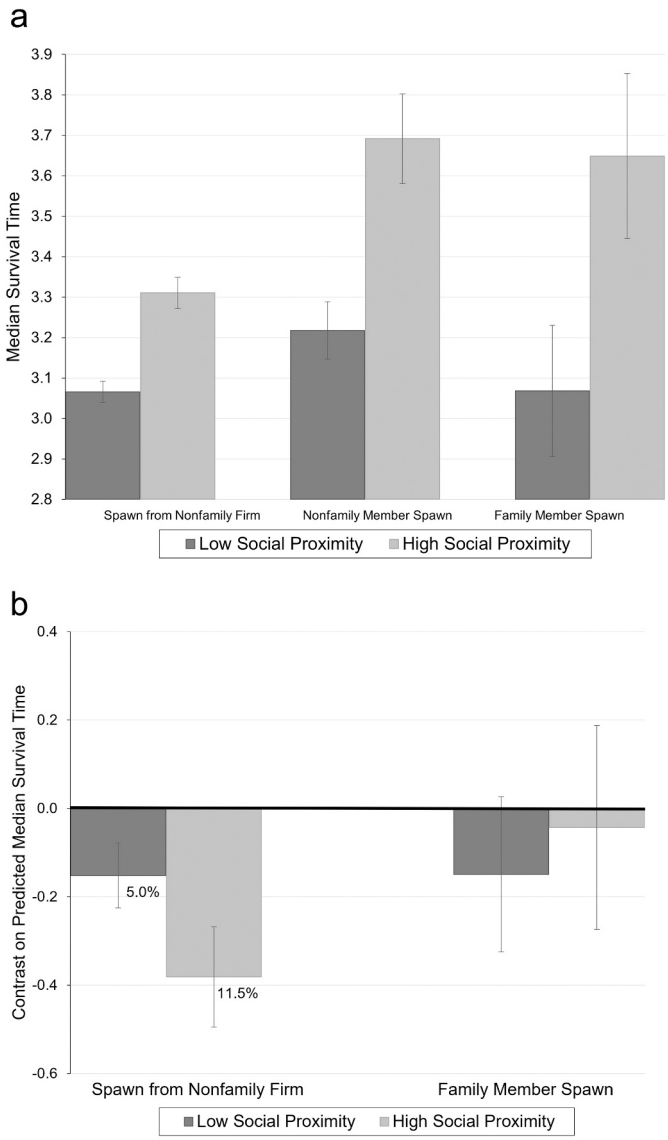

Fig. 4. a. Social proximity, family firm parents and spawn survival (adjusted predicted values). b. Social proximity, family firm parents and spawn survival (marginal effects of spawn type and moderating effect of social proximity, on median survival time (ref: nonfamily member spawn)).

5.2. Family firm literature

Our study also contributes to the family firm literature at the intersection of three streams of research within that literature. First, our study adds to research arguing that family firms can be distinguished from nonfamily firms based on the unique social capital resources that family owners bring to their firms (Arregle et al., 2007; Carr et al., 2011; Pearson et al., 2008; Zahra, 2010). Our finding, however, that spawning from a family parent increases spawn survival, while there seem to be no evident additional survival benefits from having kinship ties to the family owning the parent, suggests that social capital in family firms need not generally be beneficial for those who are able to draw upon it. Specifically, our results suggest there to be differential performance implications of spawn access to the bridging social capital of family firms, on the one hand, and spawn access to family bonding social capital, on the other, that future researchers may investigate further to better understand and untangle the nature of social capital in family firms more generally. Moreover, our findings that the survival enhancing effects of spawning from a family parent are contingent on spatial and social proximity between the parent and the nonfamily member spawn, while increasing spatial and cognitive distance may even hurt the survival chances of family member spawns, indicate that various forms of proximity between 'the source' of family firm social capital, on the one hand, and those standing to benefit from it, on the other, suggest an important boundary condition with respect to the value of social capital in family firms more generally.

Second, we contribute to the literature on family firms as a context of employment and (employee) entrepreneurship. Recent

Table 4
Coarsened exact matched sample.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Spatial proximity	0.036***	0.035***	0.059***	0.035***	0.035***	0.056***
	(0.005)	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)
Cognitive proximity	0.210***	0.210***	0.210***	0.187***	0.210***	0.187***
	(0.009)	(0.009)	(0.009)	(0.016)	(0.009)	(0.016)
Social proximity	0.029***	0.029***	0.029***	0.029***	0.038***	0.037***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)
Spawn from nonfamily firm		−0.026*	0.109*	−0.036*	0.016	0.122*
		(0.013)	(0.046)	(0.015)	(0.021)	(0.048)
Family member spawn		0.025	−0.293*	−0.016	0.005	−0.316*
		(0.028)	(0.120)	(0.031)	(0.046)	(0.124)
Spawn from nonfamily firm * Spatial proximity			−0.033**			−0.030**
			(0.011)			(0.011)
Family member spawn * Spatial proximity			0.068*			0.063*
			(0.027)			(0.027)
Spawn from nonfamily firm * Cognitive proximity				0.025		0.026
				(0.019)		(0.019)
Family member spawn * Cognitive proximity				0.094*		0.080*
				(0.038)		(0.038)
Spawn from nonfamily firm * Social proximity					−0.013*	−0.011*
					(0.005)	(0.005)
Family member spawn * Social proximity					0.004	0.001
					(0.010)	(0.010)
Intercept	0.892***	0.915***	0.817***	0.924***	0.884***	0.810***
	(0.023)	(0.025)	(0.039)	(0.025)	(0.027)	(0.040)
Log pseudolikelihood	−49,771.59	−49,767.75	−49,757.00	−49,764.61	−49,762.97	−49,751.23
Wald χ^2	816.17	826.35	869.57	860.94	857.77	923.29
N	137,302	137,302	137,302	137,302	137,302	137,302
Number of firms	50,696	50,696	50,696	50,696	50,696	50,696
Number of failures	25,128	25,128	25,128	25,128	25,128	25,128

Notes. This table presents the results of a parametric survival model with a lognormal distribution. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

studies on family firms as employers have highlighted the disadvantages that nonfamily member employees suffer from while working for these organizations (Tabor et al., 2018). Neckebrouck et al. (2018), for instance, document that nonfamily member employees are often disadvantaged in family firms with respect to pay and training. Our study, however, suggests that nonfamily employees can still benefit from their employment in family firms after they leave to start their own business. Specifically, our findings showing that spawns founded by former nonfamily member employees of family firms survive longer than those founded by former employees of nonfamily firms, and just as well or even better than those founded by family member employees when distance becomes larger, are thought-provoking. It seems that what nonfamily member employees lose *vis-à-vis* employees of nonfamily firms during their employment due to the nepotistic tendencies within family firms (Chen et al., 2021; Webb et al., 2010), they are compensated for after they leave a family firm to start their own venture on account of the access to the superior bridging social capital of their family parents that these employees have been socialized into during their employment at these firms. This interpretation, in turn, is supported by our finding that the nonfamily member founder's tenure at the family parent firm (i.e., social proximity) strengthens the survival enhancing effect of her socialization into the bridging social capital of the parent firm.

Third, our study informs the literature on family firm entrepreneurship. Most research in this stream focuses on the entrepreneurial behaviors and outcomes of family businesses, family business groups, or the business family system more broadly (e.g., Jaskiewicz et al., 2015; Minola et al., 2016; Nordqvist and Melin, 2010; Webb et al., 2010). Our study, instead, investigates entrepreneurial outcomes *outside* the scope of family ownership and control, which may be understood to constitute the *de facto* boundary of family firms (Santos and Eisenhardt, 2005). As such, the findings of our study challenge a rather gloomy view of how family firms are believed to contribute to entrepreneurial activities and outcomes in the economy as a whole. Financial economists, for example, have argued that relational forms of enterprise organization, such as family firms and business groups, may stifle new market entry, competition, and ultimately economic development, by privileging parties inside the realm of family ownership and control at the expense of entrepreneurial activities outside of it (Bertrand and Schoar, 2006; Morck et al., 2005; Morck and Yeung, 2003). Our findings, in contrast, show that family firms may contribute positively to entrepreneurial outcomes by endowing the new ventures founded by their former nonfamily member employees with longer early survival times, which is the most critical performance outcome for new ventures (Agarwal et al., 2016). They thereby support the conjecture from Schulze and Gedajlovic (2010: 200), who claimed that the "family enterprise […] may play a surprisingly important role in nurturing new ventures".

5.3. Entrepreneurship literature on founder experience

Finally, our study contributes to the entrepreneurship literature on founder prior experience. Prior research has argued and shown that the pre-founding experience of founders has important survival implications. Dahl and Reichstein (2007), for example, found that founder's prior industry experience has a positive effect on new venture survival, while Delmar and Shane (2006) report similar survival benefits of founders' prior start-up experience. We contribute to this literature by showing that the type of firm where founders acquire work experience just before starting a new venture also matters for venture survival. While there is ample evidence that new ventures benefit from the prior experience and relationships of their founders in acquiring resources from creditors, suppliers, and costumers (Florin et al., 2003; Hallen, 2008; Hsu, 2007; Shane and Cable, 2002; Starr and MacMillan, 1990), prior research on founder experience has largely overlooked how different types of prior employers may bestow different levels and types of social resources upon founders. Specifically, our study suggests family firms to provide a fertile soil in which employees can nurture stronger and better relationships with external stakeholders that they can leverage after starting their own ventures.

5.4. Unexpected (and non-) findings

As interesting as our findings are the unexpected (and non-) findings of our study (Hill et al., 2020), and especially our result that family member spawns do not enjoy survival-benefits over spawns founded by nonfamily members. We can think of several explanations for this non-finding. First, family parent firms may be willing to extend their bonding social capital only to venturing activities over which they have *formal* control (Minola et al., 2016) rather than to support the *independent* new ventures of their family members. This direct control by the parent firm would not only allow the family owners of the parent to appropriate the financial benefits from these new ventures, but they may also enjoy so-called 'socio-emotional' benefits from their control over them (Zellweger et al., 2012). Family parent firms may nevertheless be willing to extend their bonding social capital to family member spawns, however, if they remain spatially close, so they can *informally* 'control' them. This explanation coheres with our finding that family member spawns survive longer than nonfamily member spawns *only* when they stay spatially close to their parent firms. Finally, family firm parents may deliberately refuse to support family members leaving the family firm to pursue their own independent ventures. This may even result in parent firm hostility, which research has already shown to negatively impact spawn success (Walter et al., 2014).

Our results unexpectedly show furthermore that when family member spawns are spatially distant from their parent, their survival time *vis-à-vis* nonfamily member spawns even decreases. This not only suggests that various forms of proximity constitute a boundary condition on the benefits of social capital in family firms, as observed above, but also that there may be costs to family bonding social capital specifically, that become manifest outside the scope of this boundary condition. Compared to nonfamily member founders of spawns, for example, family member founders may suffer more from various forms of distance between the parent and the spawn because they are over-embedded in the social capital of their parent firms (Arregle et al., 2015), which may hamper their ability to build, and benefit from, (new) relationships in distal contexts where the social capital of the parent is either less available or less valuable. Consistent with this explanation, our results show that when family members spawn to an industry cognitively more distant from that of their parent firm, their survival time *vis-à-vis* nonfamily member spawns becomes shorter. Overall, therefore, our study suggests there to exist a 'liability of kinship' for family member spawns that materializes when spawns founded by family members are spatially and cognitively distant from their family firm parents.

A related surprising finding is that being cognitively more proximate to the parent does not increase nonfamily member spawn survival time *vis-à-vis* spawns from nonfamily firms. One explanation for this may be that the theorized bridging social capital of family firms that nonfamily member spawns are socialized into during their employment at the family parent may not be specific to industry-level communities-of-practice after all. Fig. 3b supports this explanation, as nonfamily member spawns survive longer compared to spawns from nonfamily firms even when they operate in industries that are less related to those of their parents.

5.5. Limitations and future research

Like most research, our study has limitations that will affect the interpretation and generalizability of the results. First, we cannot directly observe the bridging and bonding social capital of family parents that we have theorized spawns to have access to, and which we argue to explain their early survival advantages vis-à-vis spawns from nonfamily firms. We therefore cannot investigate differences in (kinds of) family parent social capital between similar types of parents, and cannot exclude that the observed survival differences between different types of spawns are due to alternative factors that we do not account for. While this is possible indeed, it is important to note that we control for a vast array of co-variates that may capture the heterogeneity among family and nonfamily firm parents in terms of their size, performance, employee turnover and so on. Moreover, our matching analysis addresses the bias that may result from self-selection into treatment, which could also drive our results. The decision to work for a family firm is unobservable to us and could indeed influence the outcome of spawning more/less successful ventures and offer an alternative explanation for the differences that we observe in our main findings. In fact, we know from prior research that highly educated individuals tend to prefer nonfamily firm employers over family firm ones (Block et al., 2016), and that family firms attract employees with orientations and values that fit the family's values and culture (Hauswald et al., 2016). Yet showing that our findings hold when using a matched sample that reduces the observable difference between family and nonfamily member spawns across these dimensions, increases our confidence that our results are driven by our theoretical arguments.

A related limitation involves our inability to empirically capture founder motivations to leave the parent firm to start a spawn, which may affect their ability to access both bonding and bridging social capital. Klepper and Thompson (2010), for example, illustrate

that some spawns are founded because of disagreements over the strategic direction and/or fundamental management practices of the parent. If disagreement is the main motive for spawning, kinship-based access to bonding social capital for family member spawns may be lower, as family parents may be less inclined to support family member spawns under these conditions (Ramírez-Pasillas et al., 2021). This would explain why family member spawns, on average, do not survive longer than nonfamily member ones. Similarly, because of expected loyalty between family members, family parents may be more hostile towards family members leaving the family firm to start their own independent firm, which may impact their survival (see, e.g., Walter et al., 2014). Future research could investigate whether family parents are more or less hostile towards their (family member) spawns than nonfamily firm parents.

A final limitation involves the external validity of our results. Although our study is based on highly fine-grained data about the whole population of spawns in Sweden between 2000 and 2007, we do not know to what extent our findings are generalizable to other countries or time periods. Being aware that highly fine-grained data on new ventures and their employers is typically unavailable outside countries like Sweden or Denmark, we cannot just assume our findings to be generalizable to countries that are economically and institutionally less developed than our sample country. Economic and institutional development not only play an important role in collecting, storing, and making available high-quality data, but also in explaining more relational organizational forms, such as (family) business groups, for example (Carney et al., 2011), and we therefore encourage the use of cross-country research designs to examine the institutional context-sensitivity of our findings.

Our study also suggests two interesting avenues for future research. One avenue is to compare the performance of *spinoffs* from family and nonfamily firms. Unlike spawns, which *by definition* are not owned by their parents, parent firms often retain (some) ownership of the new firm in spinoffs. While research has shown that the degree of ownership retained by the parent can hamper spinoff performance (Semadeni and Cannella, 2011), this may be different if the parent is a family firm. While family parents may be reluctant to grant access to their bonding social capital to family member spawns that are outside the control of the parent firm (as explained above), they may be more inclined to do so when they formally control the new venture, as would be the case with spinoffs. Second, future research may investigate whether family parents suffer more or less from spawning than nonfamily firm parents. Research has shown that spawning may influence parent performance either positively or negatively (Ioannou, 2014), but has not investigated the effects of family ownership of the parent in this respect. On the one hand, family firms may be less affected by spawning because of their stronger resilience capacity. On the other hand, family firms typically need more time to socialize new employees into typical family firm practices and cultures, resulting in potential short-term negative performance implications. Overall, more research at the intersection of the spawning and the family firm literatures is needed to broaden our understanding of how family firms impact *independent* (employee) entrepreneurship and vice versa.

5.6. Practitioner implications

The results from this study may inform (potential) spawn founders about the survival consequences of the choices they consider, as well as advisors and policy makers seeking to support entrepreneurship. First, employees of family firms who consider starting a new venture should be aware of the importance of access to the bridging social capital of their family parents in their decisions whether, how, and when to start a new venture. Second, as both nonfamily member and family member founders of spawns need to make decisions on the location and industry where to start their venture (Berchicci et al., 2011; Sakakibara and Balasubramanian, 2020), they should consider the survival enhancing effects of spatial co-location, and the survival reducing effects (for family member founders) of operating spatially more distant from, and in industries unrelated to the one of, their family parent firms.

CRediT authorship contribution statement

Giuseppe Criaco: Conceptualization, Methodology, Data curation, Visualization, Writing – original draft, Writing – review & editing. **Hans van Oosterhout:** Conceptualization, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Mattias Nordqvist:** Conceptualization, Writing – original draft, Writing – review & editing.

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Appendix A

Table A.1
Alternative measure of family firm parent

	Model 1	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H4)	Model 6
Industry density (ln)	0.075***	0.075***	0.075***	0.073***	0.075***	0.074***

(*continued on next page*)

Table A.1 (*continued*)

	Model 1	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H4)	Model 6
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Industry market size (ln)	−0.032***	−0.032***	−0.032***	−0.033***	−0.032***	−0.033***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Founder's education	−0.003*	−0.003*	−0.002*	−0.003*	−0.001	−0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Founder's prior industry exp.	0.025***	0.025***	0.025***	0.022***	0.024***	0.021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Founder's prior start-up exp.	−0.129***	−0.128***	−0.127***	−0.122***	−0.116***	−0.109***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Founder's structural position at parent	0.037***	0.037***	0.036***	0.033***	0.029***	0.026**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Founder's horizontal affiliations	0.009***	0.009***	0.009***	0.009***	0.005***	0.005**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Number of founders	0.214***	0.214***	0.214***	0.210***	0.209***	0.203***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Spawn size[a]	0.114***	0.114***	0.114***	0.113***	0.114***	0.113***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Spawn equity capital[a]	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Spawn L/A ratio	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm size[a]	−0.008***	−0.006***	−0.006***	−0.005***	−0.006***	−0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm performance[a]	0.001**	0.001*	0.001*	0.001*	0.001*	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Parent firm entrepreneurial proclivity	0.219***	0.226***	0.223***	0.216***	0.238***	0.226***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Parent firm turnover[a]	−0.002*	−0.002*	−0.002*	−0.002*	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Parent firm defunct	−0.061***	−0.055***	−0.054***	−0.056***	−0.050***	−0.050***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Spawn from nonfamily firm		−0.081***	0.069*	−0.077***	−0.037*	0.085*
		(0.010)	(0.035)	(0.011)	(0.015)	(0.036)
Family member spawn		−0.016	−0.308***	−0.041	−0.047	−0.332***
		(0.021)	(0.092)	(0.024)	(0.035)	(0.094)
Spatial proximity			0.037***			0.029***
			(0.008)			(0.008)
Spawn from nonfamily firm * Spatial proximity			−0.036***			−0.031***
			(0.008)			(0.008)
Family member spawn * Spatial proximity			0.061**			0.059**
			(0.020)			(0.021)
Cognitive proximity				0.046***		0.046***
				(0.013)		(0.013)
Spawn from nonfamily firm * Cognitive proximity				−0.004		−0.003
				(0.014)		(0.014)
Family member spawn * Cognitive proximity				0.065*		0.047
				(0.029)		(0.029)
Social proximity					0.026***	0.024***
					(0.004)	(0.004)
Spawn from nonfamily firm * Social proximity					−0.013***	−0.011**
					(0.004)	(0.004)
Family member spawn * Social proximity					0.002	0.000
					(0.007)	(0.007)
Intercept	−0.159*	−0.115	−0.274***	−0.094	−0.203**	−0.296***
	(0.068)	(0.068)	(0.076)	(0.069)	(0.069)	(0.076)
Industry dummies	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Cohort dummies	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Log pseudolikelihood	−109,725.03	−109,685.59	−109,661.82	−109,634.65	−109,595.11	−109,525.76
Wald χ^2	18,011.23	18,091.30	18,134.71	18,224.71	18,300.92	18,465.47
N	292,513	292,513	292,513	292,513	292,513	292,513
Number of firms	114,837	114,837	114,837	114,837	114,837	114,837
Number of failures	62,172	62,172	62,172	62,172	62,172	62,172

Notes. This table presents the results of a parametric survival model with a lognormal distribution. Robust standard errors in parentheses.

[a] This variable has been transformed using the inverse hyperbolic sine transformation.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table A.2
Mean comparison tests (full sample).

	Spawn from nonfamily firm parent (1)	Spawn from family firm parent (2)	Spawn from nonfamily firm parent − Spawn from family firm parent		
	Mean	Mean	Difference (1) − (2)	*t*-Value	*p*-Value
Founders salary at the parent (ln)	7.289	7.209	0.08	8.15	<0.001
Founder's education	12.092	11.374	0.718	35.35	<0.001
Spawn size[a]	6.329	6.53	−0.202	−14.6	<0.001
Spawn L/A ratio	0.879	0.802	0.077	2.2	0.029
Spawn equity capital[a]	3.089	3.291	−0.201	−6.6	<0.001
Parent firm size[a]	11.293	10.075	1.219	51.75	<0.001
Parent firm performance[a]	3.233	4.735	−1.502	−22.5	<0.001

[a] This variable has been transformed using the inverse hyperbolic sine transformation.

Table A.3
Mean comparison tests (matched sample).

	Spawn from nonfamily firm parent (1)	Spawn from family firm parent (2)	Spawn from nonfamily firm parent − Spawn from family firm parent		
	Mean	Mean	Difference (1) − (2)	*t*-Value	*p*-Value
Founders salary at the parent (ln)	7.451	7.358	0.093	13.4	<0.001
Founder's education	11.579	11.354	0.225	11.8	<0.001
Spawn size[a]	6.661	6.652	0.009	0.75	0.458
Spawn L/A ratio	0.675	0.706	−0.03	−3.3	0.001
Spawn equity capital[a]	3.728	3.576	0.151	4.7	<0.001
Parent firm size[a]	10.323	10.075	0.249	13.9	<0.001
Parent firm performance[a]	5.185	5.093	0.092	1.65	0.095

[a] This variable has been transformed using the inverse hyperbolic sine transformation.

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