

**Entrepreneurial teams' characteristics and founders' exit paths:  
Sales of shares to *internal* vs. *external* buyers**

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**Abstract.** We study how the characteristics of the entrepreneurial team (ET) influence the exit paths that founders of entrepreneurial ventures may pursue. Specifically, we distinguish between founders' sales of firm shares to *internal buyers* (i.e., individuals already included in the ET) and *external buyers* (i.e., individuals who are not yet included in the ET) and analyze the impact of the ET's size, heterogeneity, and family ownership on the relative likelihoods of these two exit paths. Econometric estimates on 1,494 founders of Italian high-tech entrepreneurial ventures support the idea that ETs' characteristics do influence the exit paths pursued by exiting founders.

## 1. Introduction

Growing scholarly interest has recently been raised with regard to *entrepreneurial exit*, i.e., “the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure” (DeTienne, 2010: 203). Sooner or later, all entrepreneurs will experience an exit (DeTienne and Cardon, 2012: 356). Moreover, exit is usually the moment when entrepreneurs can harvest the most value from the firms they helped to create (Wennberg et al., 2010). Therefore, (and unsurprisingly), entrepreneurial exit is a noteworthy topic in entrepreneurship research.

To date, several studies have investigated the drivers of entrepreneurial exits (Bates, 1999; Lin et al., 2000; Leroy et al., 2007; DeTienne and Chandler, 2010; Wennberg et al., 2010; Collewaert, 2012; DeTienne and Cardon, 2012). Among these drivers, the characteristics of the entrepreneurial team (ET)<sup>1</sup> figure prominently (Boeker and Karichalil, 2002; Ucbasaran et al., 2003). Scholars have also noted that multiple exit paths exist (Birley and Westhead, 1993; Petty, 1997; DeTienne and Cardon, 2012): founders can choose to exit through an IPO, an acquisition, a firm closure, or by selling their shares. Hence, future research on entrepreneurial exits should be careful to disentangle the drivers of the different exit paths that founders may pursue (DeTienne and Chandler, 2010; Wennberg et al., 2010; DeTienne and Cardon, 2012). In this paper, we heed this call. We focus on two specific exit paths: exit through the *sale of shares* to one<sup>2</sup> of the remaining ET members (hereinafter, an *internal buyer*) and exit through the sale of shares to an individual who is not yet included in the ET (hereinafter, an *external buyer*). In this realm, we address the following research question: how do the characteristics of the ET influence an exiting founder’s *relative likelihood* of selling her shares to an internal rather than an external buyer?

This issue is a relevant research question that adds to scholarly conversations on entrepreneurial exits. Sales of shares to internal buyers and external buyers are indeed very common exit paths<sup>3</sup> among founders of entrepreneurial ventures. In particular, in any entrepreneurial venture founded by an ET rather than a solo entrepreneur, sales of shares either to internal buyers or to external buyers are often *the only* exit paths that a founder can pursue on her own. Indeed, exiting through an IPO, an acquisition or a firm closure (usually) implies that multiple ET members remove themselves from the venture’s ownership structure, or at least lose their control of the venture. Conversely, it is possible for a founder to exit through selling shares even when all of the other members of the ET want to keep their shares in and control of the company. Moreover, as we will explain in greater detail in section 2, when an ET exists, it is reasonable to expect that it does play a role in the founder’s choice to sell her shares either to an internal buyer or to an external buyer. Exploring this role makes an original contribution to the literature on entrepreneurial exit. To the best of our knowledge,

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<sup>1</sup> Relying on the definition of *entrepreneurial founding team* proposed by Ucbasaran et al. (2003), we define the ET as the group of owners who hold a key role in the strategic decision making of the venture.

<sup>2</sup> The arguments reported in this section and in the following one apply to all cases of exit through sales of shares *independently of the number of buyers*. However, for expositional purposes, we refer to a case where *one* exiting founder sells all of her shares to a *single* buyer.

<sup>3</sup> The available empirical evidence is in line with this argument. Among the entrepreneurial ventures included in the RITA directory, which is the dataset used in the empirical part of this study (for details, see Section 3.1), in 60 percent of the firms where an entrepreneurial exit has occurred, the exiting founders exited by selling shares.

although prior studies have shown that the characteristics of the ET influence a founder's choice to leave the venture (see the studies cited above), they are silent on how these characteristics shape the choice of the *specific exit path* pursued by a founder.

Our main insight is as follows. During a venture's life, a founder has various alternatives: staying in the venture or leaving it through one of the available exit paths. These paths include sales of shares to internal and external buyers. A founder chooses to sell her shares to an internal buyer when the net present value of the difference between the expected benefits and costs that this exit path engenders for her exceeds the net present value of all of the other alternatives (i.e., selling shares to an external buyer, pursuing another exit path or staying in the venture). We argue that in the choice between selling shares to an internal buyer or external buyer, the net present value for the founder is influenced by the cost and benefits for the remaining ET members<sup>4</sup>. The following example helps to illustrate our reasoning: consider an exiting founder who has identified a candidate external buyer and realized that the net present value of selling her shares to this buyer exceeds the net present value of all of the other alternatives. If the remaining ET members expect that the entry of the external buyer will engender high costs (e.g., coordination costs) and negligible benefits for them, they will likely prefer to offer the exiting founder *more money* than the external buyer to buy the shares to block the external buyer's entry. *Ceteris paribus*, this additional amount of money may render the net present value of the sale of shares to (one of) the remaining ET members greater than the value of selling these shares to the external buyer, which would induce the exiting founder to change her mind and sell her shares internally. We posit that the remaining ET members' expected costs and benefits associated to a founder's sale of shares to an internal buyer rather than an external buyer vary depending on the characteristics of the ET. As a consequence, we expect that each ET's characteristics will influence the relative likelihood of a sale of shares to an internal buyer rather than an external buyer. Specifically, we develop hypotheses on the effects on this relative likelihood of three prominent ET characteristics: the ET's size, the heterogeneity in the demographic characteristics of the ET's members, and family ownership.

To test our hypotheses, we use data on a sample of founders of entrepreneurial ventures in high-tech industries. We think that the high-tech context is particularly appropriate for our study. The empirical evidence suggests that in high-tech industries, entrepreneurial ventures are often founded by teams of individuals (see, e.g., Kamm et al., 1990: 7-8; Colombo et al., 2004). Accordingly, studying the influence of an ET's characteristics on a founder's decision to exit through selling shares is salient in these industries. Moreover, an entrepreneurial exit is a major event for high-tech entrepreneurial ventures, as these firms are deeply shaped by their founders (Finengold and Frenkel, 2006), who influence their strategies and performance. Consequently, although founders leave an enduring imprint on their ventures (Colombo and

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<sup>4</sup> This argument explains why we use a classification of buyers (internal buyers vs. external buyers) that is not common in the literature on entrepreneurial exit. Prior works (see, e.g., DeTienne and Cardon, 2012) distinguished between family members, firm employees/managers, and other buyers. This classification stresses the relationship between the seller of the shares (i.e., the exiting founder) and the buyer and is appropriate in studies that examine the influence of the exiting founder's individual characteristics on her expected costs and benefits, and consequently, on the exit path she pursues. As our study focuses on the role of *the entrepreneurial team* in determining a founder's exit path, a classification of buyers that stresses the relationship between the buyer and the whole ET is more appropriate.

Grilli, 2005), the exit of a founder usually engenders significant consequences for high-tech entrepreneurial ventures.

The paper proceeds as follows: in the next section, we present the conceptual framework and formulate a series of theoretical hypotheses. Section 3 provides a description of the sample used in the study and illustrates the econometric methodology. Our results are presented in section 4. Lastly, section 5 discusses the key findings of the paper and its contribution to the literature, notes the limitations of this work, and highlights directions for future research.

## **2. Conceptual framework**

### **2.1. Sales of shares to an internal buyer vs. an external buyer: the costs and benefits for the remaining ET members**

In entrepreneurial ventures, the ET makes *strategic decisions*<sup>5</sup> (Ucbasaran et al., 2003) and provides *valuable resources* (i.e., human capital, social contacts, and financial capital; see, e.g., Kor and Mahoney, 2000) that are either immediately used in the venture or available for future use. The exit of a founder through a sale of shares alters the ET's composition; consequently, it affects strategic decision making and modifies the resources provided by the ET. In particular, depending on whether the exiting founder sells her shares to an internal buyer or to an external buyer, the changes in both strategic decision making and resources engender specific expected costs and/or benefits for the remaining ET members. These expected costs and benefits lead the remaining ET members to prefer one buyer to the other, and thus, to act to influence accordingly the exiting founder's choice of her exit path. In the following, we elaborate on these arguments and compare the consequences in terms of the expected costs and benefits for the remaining ET members of a sale of shares to an internal buyer and to an external buyer.

First, when a founder exits through a sale of shares, the remaining ET members will experience costs and benefits because of the change in the team that makes the strategic decisions. When shares are sold to an internal buyer, only the remaining ET members participate in making strategic decisions after the founder's exit. Conversely, in the event of a sale to an external buyer, a new decision maker enters the ET. In comparison to a sale to an internal buyer, such an entry probably increases the coordination costs incurred in making strategic decisions. Indeed, it has already been demonstrated that coordination costs in decision making are positively associated to the number of decision makers (see, e.g., Ruigrok et al., 2006).<sup>6</sup> Moreover, whereas the remaining ET members already have experience of making strategic decisions

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<sup>5</sup> The term "strategic decisions" is used here as a fairly comprehensive term that includes "the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (Chandler, 1962:13). Examples of strategic decisions include the choices "to expand the volume of activities, to set up distant plants and offices, to move into new economic functions or become diversified along many lines of business" (Chandler, 1962:13; for a more detailed list see also Hambrick and Mason, 1984). For entrepreneurial ventures, typical strategic decisions include launching new products, hiring middle managers, entering foreign markets and establishing alliances.

<sup>6</sup> Sales of shares to both an internal buyer and an external buyer may change the voting power of the remaining ET members and the control group, which might have an effect on strategic decision making. However, we will *not* elaborate on this issue, as it is reasonable to suppose that in entrepreneurial ventures strategic decision making is mainly the result of negotiations among the ET members.

together, the external buyer is a newcomer who has still to learn how to interact with the ET she has entered. Still, having a new member in the ET can engender benefits for the remaining ET members, as the newcomer may bring new ideas, a fresh perspective, and valuable knowledge that the remaining ET members do not possess. To conclude, when strategic decision making is considered, a sale of shares to an external buyer implies both higher expected costs and higher expected benefits than a sale to an internal buyer.

Second, an exit through a sale of shares may also engender costs and benefits for the remaining ET members because of the change in the resources provided by the ET. When a founder exits an entrepreneurial venture, she brings her human capital, social contacts, and (personal) financial resources with her. Some of these resources may have been leveraged at the firm level, and thus, may be used in the venture even after the founder's departure. For example, part of the founder's knowledge may have been transformed in firm-level knowledge through an organizational knowledge creation processes (Nonaka, 1994). Conversely, other resources, such as the exiting founder's personal financial resources, are lost after her exit. In the event of a sale to an external buyer, the newcomer provides the venture with her human capital, social contacts, and (personal) financial resources. These additional resources compensate (at least partially) for the loss of the exiting founder's resources. Thus, in the case of a sale to an external buyer, the amount of the resources provided by the ET after the founder's exit is higher than in the case of a sale to an internal buyer<sup>7</sup>. Consequently, as far as resources are concerned, a founder's exit through a sale of shares to an external buyer engenders *higher benefits* for the remaining ET members than an exit through a sale to an internal buyer.

## 2.2. Hypotheses

From the above discussion, it emerges that a sale of shares to an external buyer engenders both higher expected costs and higher expected benefits for the remaining ET members than a sale to an internal buyer. Therefore, it is not possible to conclude *a priori* whether the remaining ET members will prefer one type of buyer to the other. We argue that an ET's characteristics impact the above-mentioned costs and benefits and shape its preference for the two exit paths. As the remaining ET members act to induce the exiting founder to choose the exit path they prefer (e.g., if a sale of shares to an internal buyer is their preferred exit path, they will offer more money to buy the exiting founder's shares or resort to moral suasion), the ET's characteristics also influence the exiting founder's evaluation of the exit path to pursue. Thus, we conclude that ultimately, the ET's characteristics affect the relative likelihoods of the two paths.

In line with prior studies, we focus on three prominent ET characteristics, i.e., its size, heterogeneity, and family ownership (Ucbasaran et al., 2003).

**ET size.** As we argued in section 2.1, when a founder sells her shares to an external buyer, the remaining ET members incur higher coordination costs in making strategic decisions than after a sale to an

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<sup>7</sup> It is worth acknowledging that when shares are sold to an internal buyer, the amount of resources available in the ET after founder's exit may be lower than when shares are sold to an external buyer. This possibility is a consequence of a reduction of the buyer's personal financial resources. Indeed, the buyer must pay the exiting founder in exchange for the shares.

internal buyer. However, the difference in expected coordination costs between the two cases is inversely related to the number of founders. Indeed, the smaller the number of decision makers is, the greater the increase in the expected coordination costs engendered by the newcomer's entry will be (for a similar argument, see Hardin, 1982). This fact implies that the smaller the ET is, the greater the expected coordination costs for the remaining ET members will be, due to a sale to an external buyer rather than an internal buyer. In addition, the members of smaller ETs experience greater benefits in the case of a sale of shares to an external buyer than in the case of a sale to an internal buyer. The smaller the ET is, the higher the likelihood will be that a newcomer will bring new insights and novel perspectives in decision making. Furthermore, a newcomer can bring greater benefits to smaller ETs with regard to resource availability. Indeed, the ET's size is a proxy of the resources that are available to an entrepreneurial venture (see, e.g., Colombo and Grilli, 2005). *Ceteris paribus*, if there are fewer members in the ET, then the amount of human capital, social contacts, and financial resources that the venture can count on will be lower. Thus, the value of the resources that a newcomer can confer to the venture will be greater.

[Table 1 around here]

By combining these arguments (for a synthesis, see Table 1), we conclude that the smaller the ET is, the *greater* the difference between a sale to an external buyer and a sale to an internal buyer will be with respect to *both the expected costs and the expected benefits* for the remaining ET members. As we have no way to determine *a priori* whether the costs will outweigh the benefits or vice versa, we cannot predict which of the two exit paths will be preferred by the remaining ET members, and thus, will be the more likely exit path chosen by an exiting founder. Hence, we propose two competing hypotheses.

*H1a: A smaller ET size implies a greater relative likelihood of a sale to an internal buyer rather than an external buyer.*

*H1b: A smaller ET size implies a smaller relative likelihood of a sale to an internal buyer rather than an external buyer.*

**ET heterogeneity.** Making strategic decisions requires a decision maker to evaluate so many factors that she normally tends to focus her attention on restricted areas (Hambrick and Snow, 1977). These areas are determined by her *givens* (March and Simon, 1958), which reflect her cognitive base and values, shape her perceptions of what is going on, and drive her to make certain decisions. Scholars have noted that the demographic characteristics (e.g., age, race, gender, education, work experience, and firm tenure) of a decision maker are valid indicators of her givens, although they are incomplete and imprecise (Hambrick and Mason, 1984; Hambrick, 2007).

Expanding on these considerations, we argue that when strategic decisions are made by an ET, greater heterogeneity of the demographic characteristics of ET members increases the likelihood that these members will bring diverse givens in decision making. Then, the challenge is to reconcile these givens. When a founder exits through a sale of shares to an external buyer, the buyer brings in strategic decision making her own givens, which likely differ from those of the remaining ET members due to the lack of a common work experience within the venture. To proficiently make strategic decisions, the diverse givens of the external

buyer must be reconciled with those of the remaining ET members. We posit that greater heterogeneity within the ET in terms of the demographic characteristics of its members before a founder's exit makes the remaining ET members better able to reconcile their own givens with those of the newcomer. Indeed, because they have made strategic decisions with highly heterogeneous decision makers in the past, the remaining ET members have already developed experience in reconciling different givens. Conversely, the members of less heterogeneous ETs are less accustomed to reconciling different givens. Hence, when a founder exits the venture through a sale of shares, the remaining ET members find it more difficult to reconcile their own givens with those of the external buyer. As a consequence, as far as decision making is concerned, a less heterogeneous ET implies greater expected costs for the remaining ET members due to a founder's exit through selling shares to an external buyer rather than an internal buyer. In less heterogeneous teams, the remaining ET members may experience not only greater costs but also greater benefits due to a sale of shares to an external buyer rather than an internal buyer. Indeed, when a founder sells her shares to an external buyer, the less heterogeneous the ET is, the more likely it is that the newcomer will bring new insights and novel perspectives in strategic decision making.

Finally, the heterogeneity within the ET also affects the variety of the resources that are available to the venture. Given that human capital relates to the knowledge and capabilities acquired through education and work experience (Becker, 1975), differences in the fields of education and work experience are sources of remarkable diversity in the human capital of individuals. Moreover, differences in education, work experience, age, and gender (see, e.g., Due et al., 1999 and the studies it cited) are usually associated to differences in individuals' social contacts. As a consequence, within an ET we expect a greater variety of human capital and social contacts and less duplication of the same competences and contacts given greater heterogeneity within the ET with respect to the demographic characteristics of its members. Conversely, when an ET's members have less heterogeneous demographic characteristics, their human capital and social contacts are likely to be similar. *Ceteris paribus*, less ET heterogeneity implies greater value in the additional resources that an external buyer confers to the venture.

To sum up, the above arguments suggest that the difference between a sale to an external buyer and a sale to an internal buyer in both the expected costs and the expected benefits for the remaining ET members increases as the heterogeneity of the ET members' demographic characteristics decreases. Applying the same reasoning used above to explain the effect of an ET's size, we formulate the following two competing hypotheses.

*H2a: A smaller heterogeneity of the ET members' demographic characteristics implies a greater relative likelihood of a sale to an internal buyer rather than an external buyer.*

*H2b: A smaller heterogeneity of the ET members' demographic characteristics implies a smaller relative likelihood of a sale to an internal buyer rather than an external buyer.*

**Family ownership.** We argue that in family-owned firms (i.e., firms where a single family owns at least 50 percent of the firm's shares), when a founder exits the venture by selling her shares to an external buyer, the increase in expected coordination costs incurred in strategic decision making for the remaining ET

members is *higher* than in non-family-owned firms. Conversely, the increase in the benefits that the newcomer brings in decision making is lower than in the case of non-family-owned firms. First, the literature on family business suggests that ET members of family-owned firms exhibit more limited cognitive diversity, and thus, have more similar givens than ET members of non-family-owned firms (Classen et al., 2012). Accordingly, the former likely have more limited experience than the latter in reconciling diverse givens when making strategic decisions. Hence, if a founder of a family-owned venture decides to exit by selling her shares to an external buyer, the remaining ET members would be less able to reconcile their own givens with those of the newcomer in comparison to non-family-owned ventures. This limitation increases the expected coordination costs for the remaining ET members in that situation. Second, family-owned ventures are characterized by a risk-averse climate that permeates their decisions (De Massis et al., 2014). This climate renders these firms more conservative and less willing to take advantage of the fresh perspectives and the new ideas that an external buyer allegedly brings to the decision making process.

With regard to the resources provided to a venture by its ET, prior studies have shown that family ownership offers ventures unique resources (Habbershon and Williams, 1999), which differ in both *quantity* and *quality* from those of non-family-owned ventures. For instance, it has been shown that whereas the ETs of family-owned ventures usually have more limited social contacts than those of non-family-owned ventures, their relationships with suppliers, customers, and support organizations (e.g., financial institutions) are more effective in opening up access to new resources and opportunities (Sirmon and Hitt, 2003). Therefore, generally speaking one cannot *a priori* conclude that the need for resources is more or less stringent in family-owned ventures than in non-family-owned ventures. Consequently, when a founder exits by selling her shares to an external buyer, the resources allegedly provided by the newcomer are not necessarily more or less beneficial for the remaining ET members in the case of family-owned ventures rather than non-family-owned ones. In other words, from the sole resource perspective, family ownership has a negligible impact on the relative likelihood of a sale to an internal buyer rather than an external buyer.

The combination of the above arguments on strategic decision making and resource availability suggests that family ownership increases the expected costs and reduces the expected benefits for the remaining ET members of a sale to an external buyer as opposed to a sale to an internal buyer; this difference increases the relative likelihood of the latter exit path. Hence, we put forward the following hypothesis.

*H3: Family ownership implies a greater relative likelihood of a sale to an internal buyer rather than an external buyer.*

### **3. Methods**

#### **3.1. Dataset and sample**

The hypotheses are tested on a sample of founders of Italian high-tech entrepreneurial ventures extracted from the Research on Entrepreneurship in Advanced Technologies (RITA) directory. Created by the RITA Observatory research team at Politecnico di Milano in 1999 and extended through the inclusion of new ventures in 2002, 2004, 2007, and 2009, the RITA directory is the most complete and authoritative



source of information presently available on Italian firms complying with three criteria: (i) being owner-managed (i.e., being independent upon their foundation and having remained so), (ii) being less than 25 years old on January 1st, 2009, (iii) operating in the following high-tech manufacturing and service industries: ICT manufacturing (i.e., computers; electronic components; telecommunication equipment; optical, medical and electronic instruments); biotechnology, pharmaceuticals and advanced materials; aerospace, robotics and process automation equipment; software; Internet and telecommunication services; environmental services; R&D and engineering services.

The data on the entrepreneurial ventures included in the directory were collected through a series of surveys (for a description of the data collection process, see Colombo et al., 2014). The RITA directory also stores longitudinal data on firm owners and their shares. This information was extracted from the Italian Business Register<sup>8</sup> of the Chambers of Commerce at the beginning of 2013.

To distinguish the founders and the later entrants in the ET from other owners who are not part of the ET, we followed Ucbasaran et al. (2003) and we considered as ET members only the individuals who owned at least 10% of the firm's equity. As in entrepreneurial ventures there is no (or very limited) separation between ownership and control (Gimeno et al., 1997), we assume that these owners also have a role in strategic decision making. This assumption is particularly appropriate given our focus on young high-tech ventures (Fini et al., 2012).

As of May 1st, 2013, complete information regarding the variables of interest for the present study was available for 1,494 founders in 507 entrepreneurial ventures. We study these individuals until either their exit from the RITA firm they founded or the last year for which we have data on their presence within the venture.

The great majority of the 1,494 sample founders were males (1,258 individuals, i.e., 84.2 percent), and their average age at the firm's foundation was 41 years. In Table 2, we report some descriptive statistics on the entrepreneurial ventures that these individuals founded. Most of these ventures operated in service industries (58.2 percent), were located in the North of Italy (61.9 percent), and were founded after 2000 (74.8 percent).

[Table 2 around here]

Here, we provide some descriptive evidence on the phenomenon of entrepreneurial exits in our sample. Most of the 1,494 sample founders (995 individuals, i.e., 66.6% of the sample) did not exit their firms until the last year for which we have information on the venture ownership structure. Out of the remaining 499 founders, 183 exited through sales to internal buyers, 134 exited through sales to external buyers, and 182 used other exit paths (namely, firm liquidation, failure, or acquisition). A comparison of the characteristics of the 183 sample founders that departed through sales to internal buyers and the 134 that departed through sales to external buyers reveals that the two groups do not differ with respect to the founders' ages. Conversely, they do differ with respect to the founders' gender: females are less numerous

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<sup>8</sup> The Italian Business Register is an official register of company details. It contains information (incorporation, amendments, and cessation of trading) for all companies with headquarters or local branches within the country.

among the founders that exited through sales to internal buyers than among those who exited through sales to external buyers (respectively, 9.8% vs. 23.9%, where  $\chi^2(1)=11.48$ ). We also considered the characteristics of the entrepreneurial ventures from which the two groups of founders exited. The industry and geographic distributions of these firms do not differ between the two groups. Interestingly, among recently founded entrepreneurial ventures, departures through sales to internal buyers are more frequent than departures through sales to external buyers ( $\chi^2(2)=5.01$ ).

### 3.2. Specification of the econometric model and variables

To test our hypotheses, we resort to a competing risks framework (Kalbfleisch and Prentice, 1980; Cameron and Trivedi, 2005) and cluster observations by firm. We model the hazard function by a semi-parametric approach (Cox, 1972)<sup>9</sup>. The dependent variable (*founder\_exit*) captures both whether in year  $t$  the founder under scrutiny exited the RITA venture she founded and the exit path she followed. Each year  $t$ , *founder\_exit* can take on four values: (0) continuation, (1) an exit through a sale to internal buyers, (2) an exit through a sale to external buyers, (3) an exit through any other exit paths.

There were four explanatory variables included in the analysis. The ET size was computed as the number of ET members in year  $t-1$ , who may be individuals or other firms ( $n\_ET\_members_{t-1}$ ). Regarding the heterogeneity within the ET in the demographic characteristics of its members, the data available in the RITA dataset only allowed us to build measures of age and gender heterogeneity. Specifically, we built  $age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$ . The former variable is computed for each venture as  $\frac{\sum_{i=1}^n (x_i - avgx)^2}{avgx}$ , where  $x_i$  is the birth year of the individual ET member  $i$ ,  $avgx$  is the average value of the birth years of the individuals' part of the ET and  $n$  is the total number of these individuals. In addition,  $gender\_heterogen_{t-1}$  is computed as  $\frac{Women\_share^2 - Men\_share^2}{0.5}$ , where  $Women\_share$  is the share of women among the individual ET members and  $Men\_share$  is the share of men. Lastly,  $d\_family_{t-1}$  is a dummy equaling 1 if in year  $t-1$  at least 50 percent of the firm's shares were possessed by individuals linked by parental, sibling and/or husband-wife relationships. This criterion is consistent with prior studies on family-owned entrepreneurial ventures (e.g., Littunen and Hyrsky, 2000; Piva et al., 2013; Colombo et al., 2014). To identify the three types of relationships, we used owners' family names, birth years, and addresses of residence. Specifically, we assumed that two owners were linked by i) a parental relationship when they had the same family name and the age difference between the two was greater than 18 years, ii) a sibling relationship when they had the same family name and the age difference was 18 years or lower, and iii) a husband-wife relationship when they had different genders and family names but the same address of residence. To test our hypotheses, we consider the difference between the coefficients of the explanatory variables for the sales to internal buyers and the sales to external buyers in the equations of the competing risks model. Following H1a and H2a, this difference should be negative for  $n\_ET\_members_{t-1}$ ,

<sup>9</sup> As a check of robustness, we used the method of Fine and Gray (1999) as an alternative to Cox regression (Cox 1972). The corresponding results do not differ from those discussed in the following. These additional estimates are available from the authors upon request.

$age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$ , whereas according to H1b, H2b and H3, it should be positive for  $n\_ET\_members_{t-1}$ ,  $age\_heterogen_{t-1}$ ,  $gender\_heterogen_{t-1}$  and  $d\_family_{t-1}$ . As our theoretical arguments led to contrasting hypotheses on the effects of the ET's size and demographic heterogeneity on the relative likelihoods of the two exit paths under investigation, we cannot exclude the possibility that these relationships are curvilinear. Hence, we also resorted to a quadratic specification in which we introduced into the equations  $sq\_n\_ET\_members_{t-1}$ ,  $sq\_age\_heterogen_{t-1}$ , and  $sq\_gender\_heterogen_{t-1}$ , which are the squared values of  $n\_ET\_members_{t-1}$ ,  $age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$ .

The estimates also included a series of control variables. First, we included four founder-specific and team-specific controls. These variables were the share of firm equity owned by the focal founder in year  $t-1$  ( $founder\_share_{t-1}$ ), the age of the focal founder in year  $t$  ( $founder\_age_t$ )<sup>10</sup>, a dummy equaling 1 if the ET includes both individuals and firms ( $d\_firms\_ET\_members_{t-1}$ ), and a dummy equaling 1 if any ET members other than the focal founder exited the entrepreneurial venture in year  $t$  ( $d\_other\_exits_t$ ). Then, we inserted in the estimates three location-specific controls:  $entrepreneurship\_rate_{t-1}$ ,  $no\_profit$  and  $crimes$ . Firstly,  $entrepreneurship\_rate_{t-1}$  is computed as the number of new firms created in the province in year  $t-1$  divided by the number of firms that existed in the province at the beginning of year  $t-1$  (source: Istituto Tagliacarne). This variable is a proxy of the opportunities for new firm creation in the province where the founder's venture is located; thus, it may influence founders' expected benefits from an exit. Secondly,  $no\_profit$  and  $crimes$  allow us to control for factors associated to the venture location, which may increase or reduce the remaining ET members' willingness to involve outsiders in the ET, and thus, change the relative likelihood of a sale to external buyers. Whereas  $no\_profit$  captures the number of not-for-profit organizations for every 1,000 inhabitants in the county where the firm is located,  $crimes$  captures the number of crimes for every 100,000 inhabitants in the province where the firm is located. Both  $no\_profit$  and  $crimes$  are time-invariant variables calculated in 2010 (source: Italian National Institute of Statistics, ISTAT).

Finally, the estimates included a series of firm-specific controls. First, we included a dummy equaling 1 if the firm had been granted any patents before year  $t$  ( $d\_patent_{t-1}$ ) to control for the adverse selection problems that firm founders may encounter in a search for external buyers. As has been highlighted in prior studies on firms' searches for financial investors (Carpenter and Petersen, 2002) or alliance partners (Teece, 1986), outsiders usually find it difficult to assess the quality of the products or services and capabilities of high-tech entrepreneurial ventures. However, these firms may credibly signal their quality to uninformed external parties through their technological achievements. In particular, patent activity (Stuart, 1998; Stuart et al., 1999) confers to firms both visibility and legitimacy, and, as a result, it may have an impact on the relative likelihood of an exit through a sale to external buyers. The estimates also included the age of the firm in year  $t-1$  ( $firm\_age_{t-1}$ ) and four industry dummies ( $d\_ICT\_manufacturing$ ,  $d\_other\_manufacturing$ ,

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<sup>10</sup> We tried to include in the estimates the following control for the founder's gender: a dummy equalling 1 for female founders. However, inasmuch as this variable was highly correlated with  $gender\_heterogen_{t-1}$ , we had to exclude it from the list of regressors.

$d\_internet$ , and  $d\_software$ ; the baseline is other high-tech services) that capture the sector of activity of the firm.

Table 3 illustrates the descriptive statistics relating to the explanatory and control variables that were included in the models, and Table 4 presents the correlation matrix. Although the independent variables were in general poorly correlative, some exceptions existed. To assess the potential multicollinearity, we computed the variance inflation factors (VIF) for the variables in the model without interactive terms. The mean VIF was 1.72 with a maximum of 3.39. These values were well below the corresponding thresholds (which were equal to 6 and 10, respectively). Thus, we concluded that multicollinearity is not a problem in our estimates.

[Tables 3 and 4 around here]

## 4. Empirical results

### 4.1. The results of the econometric estimates

[Table 5 around here]

Table 5 reports the estimates of the competing risks models, which are meant to disentangle the effects of the covariates according to the exit paths pursued by founders. We distinguish exits through sales to internal buyers (Equation 1) and exits through sales to external buyers (Equation 2) from other exit paths (Equation 3). The hypotheses are tested by comparing the coefficients in Equations 1 and 2 through z-tests. The results of the estimates of Equation 3 are presented for comparison purposes, but they are not discussed in the text.

The coefficients of the explanatory variables are found to differ according to the exit path under consideration, as suggested by the z-tests reported in the table. This pattern provides clear evidence that ETs' characteristics have a non-negligible influence on the relative likelihoods of sales to internal buyers rather than external buyers.

With regard to the size of the ET, in Model 1  $n\_ET\_members_{t-1}$  is found to have a non-significant coefficient in Equation 1 and a negative and significant (at 1%) coefficient in Equation 2. A one-unit increase in  $n\_ET\_members_{t-1}$  determines a small increase (+3.5%) in the hazard rate of a sale to internal buyers and a large decrease (-39.3%) in the hazard rate of a sale to external buyers. Accordingly, the z-test on  $n\_ET\_members_{t-1}$  is positive and significant (at 1%). These findings indicate that in accordance with H1b, the smaller the size of the ET is, the smaller a founder's relative likelihood of an exit through a sale to internal buyers rather than external buyers will be.

To test whether the size of the ET had a curvilinear effect on the difference between the likelihoods of the two exit paths, in Model 2 we resorted to a quadratic specification. The insertion of  $sq\_n\_ET\_members_{t-1}$  into the estimates reveals that the size of the ET has a curvilinear relationship with the hazard rates of both exit paths: the null hypothesis that the coefficients of  $n\_ET\_members_{t-1}$  and  $sq\_n\_ET\_members_{t-1}$  are jointly equal to zero is rejected at conventional confidence levels by Wald  $\chi^2$  tests on both Equation 1 and Equation 2 ( $\chi^2(2) = 4.69$  and  $24.99$ , respectively). Whereas an inverse U-shaped relationship exists with the hazard rate

of exits through sales to internal buyers (with  $n\_ET\_members_{t-1}$  and  $sq\_n\_ET\_members_{t-1}$  exhibiting a positive coefficient and a negative one, respectively), there is a U-shaped relationship with the hazard rate of exits through sales to external buyers (the coefficients of  $n\_ET\_members_{t-1}$  and  $sq\_n\_ET\_members_{t-1}$  are negative and positive, respectively). The effect of the ET's size on the difference in the hazard rates of departures through sales to internal buyers and external buyers is illustrated in Figure 1. The figure shows that the relation between the ET's size and the difference between the two exit paths in the multiplier of the hazard rate is inverted and U-shaped. Hence, the difference first increases with the ET size growing to about five ET members (which corresponds to the 77th percentile of the distribution of the ET size in the sample), and then it decreases when the ET size grows even larger.

[Figure 1 around here]

For the effects of the age and gender heterogeneity within the ET, both  $age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$  have non-significant coefficients in Equation 1. A 0.1 increase in  $age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$  would indeed correspond to a very small decrease in the hazard rate of sales to internal buyers (the respective figures are -0.8% and -2.6% in Model 1 and -1.2% and -1.6% in Model 2). Whereas  $gender\_heterogen_{t-1}$  has a non-significant coefficient in Equation 2,  $age\_heterogen_{t-1}$  has a positive and significant (at 5%) coefficient. Hence, greater age heterogeneity is more likely to be associated to a sale to external buyers: a 0.1 increase in  $age\_heterogen_{t-1}$  would in fact correspond to a 19% increase in the hazard rate of this exit path. However, the z-tests on  $age\_heterogen_{t-1}$  and  $gender\_heterogen_{t-1}$  are negative and significant at conventional confidence levels (with the exception of  $gender\_heterogen_{t-1}$  in Model 2, which is only close to significance). This finding indicates that, in accordance with H2a, a smaller heterogeneity within the ET in the demographic characteristics of its members is associated to a greater hazard rate of a founder exit through a sale to internal buyers rather than external buyers. To test whether the heterogeneity within the ET had a curvilinear effect on the difference between the likelihoods of the two exit paths, we separately inserted in the estimates the squared values of the two heterogeneity measures (i.e.,  $sq\_age\_heterogen_{t-1}$  and  $sq\_gender\_heterogen_{t-1}$ ). In the model including  $sq\_age\_heterogen_{t-1}$ , the null hypothesis that the coefficients of  $age\_heterogen_{t-1}$  and its squared term are jointly equal to zero is rejected in both Equation 1 and Equation 2, and the z-tests on both  $age\_heterogen_{t-1}$  and  $sq\_age\_heterogen_{t-1}$  are not significant. The same result holds true for gender heterogeneity in the model including  $sq\_gender\_heterogen_{t-1}$ .<sup>11</sup>

Finally, the effect of  $d\_family_{t-1}$  is negative and significant at 1% in Equation 2 and negligible in Equation 1, and the z-test is positive and significant at conventional confidence levels in both Model 1 and Model 2. Although family ownership reduces the hazard rate of founder exits through sales to external buyers by approximately 69%, it has a negligible effect on the hazard rate of exits through sales to internal buyers (0.0% in Model 1 and -1.2% in Model 2). Hence, H3 is not rejected.

<sup>11</sup> For the sake of brevity, these additional estimates are not reported here. They are available from the authors upon request.

Among the control variables, the results of Model 1 reveal significant differences in the hazard rates of exits through sales to internal buyers and external buyers for  $founder\_share_{t-1}$ ,  $d\_other\_exits_t$  and  $no\_profit$ . Greater founder shares, the fact that other ET members exited the entrepreneurial venture in year  $t$ , and a greater presence of not-for-profit organizations in the county where the firm is located are all associated to a smaller difference between the hazard rates of sales to internal buyers and sales to external buyers. The coefficients of the remaining control variables do not differ according to the exit path under consideration. In Model 2, only the difference in  $d\_other\_exits_t$  is significant.

#### 4.2. Checks of robustness

To ensure the reliability of our results, we performed three robustness checks. First, in line with Wennberg et al. (2010) and Long and Freese (2006), we estimated a binary logit model with time indicators. The dependent variable was a dummy equaling 1 for exits through sales of shares to internal buyers and 0 for sales to external buyers. In the estimates of this model, the coefficients indicate the impact of the variables on the relative likelihood of a sale to internal buyers rather than external buyers. Second, as it has already been shown that a firm's size and growth have an impact on entrepreneurial exits (e.g., Boeker and Karichalil, 2002), we inserted the logarithm of firm sales in  $t-1$  and the growth in sales between  $t-2$  and  $t-1$  in the set of control variables. These data were available for a subsample of 926 founders in 350 firms. Among these individuals, the cases of departures through sales of shares are few: 57 founders exited through sales to internal buyers and 28 exited through sales to external buyers. Third, we replaced the dummy  $d\_family_{t-1}$  with a variable capturing the share of firm equity owned by family members in year  $t-1$ .

The results of all of these robustness checks are in line with those discussed in Section 4.1. For the sake of brevity, these additional estimates are not reported here, but they are available from the authors upon request.

### 5. Conclusions

This paper investigates a relevant but still poorly understood phenomenon: the exit of a founder from an entrepreneurial venture. Specifically, we have examined the effects of ETs' characteristics on the exit paths pursued by exiting founders, and we focused on exits through sales of shares to internal buyers and external buyers. Our results indicate that the relative likelihoods of sales to internal buyers rather than external buyers increase with the size of the ET up to a threshold of five members and then start decreasing. Moreover, the relative likelihood of a sale to internal buyers is greater given lower ages and gender heterogeneity in the ET and in the case of family ownership.

Our study originally advances the received knowledge on entrepreneurship. First and foremost, we contribute to the literature on entrepreneurial exit by further elaborating on how the exit decision is made. Most prior studies have conceptualized an exit as a founder's utility-maximizing choice (see, e.g., Gimeno et al., 1997; Amaral et al., 2007), but have disregarded whether and how this utility maximization is influenced by the remaining ET members (for an exception, see Hellerstedt et al., 2007). Indeed, prior works either focused on self-employed individuals (Bates, 1999; Lin et al., 2000) or firms owned by a single founder

(Wennberg et al., 2010) where no remaining ET members existed. Alternatively, they have concentrated on other drivers of the exit decision, such as exiting founders' individual characteristics and motivations (Leroy et al., 2007; DeTienne and Chandler, 2010; DeTienne and Cardon, 2012) or conflicts among team members (Collewaert, 2012). The present paper addresses this gap by arguing that even though the choice of the exit path is made by the exiting founder, the remaining ET members' expected costs and benefits impact this choice. In turn, these costs and benefits depend on ETs' characteristics.

Second, we contribute to studies on entrepreneurship in high-tech industries. Several works in this vein have focused on founder-CEO succession, which has been regarded as a milestone in firms' managerial professionalization (see among others Boeker and Karichalil, 2002; Nelson, 2003; Wasserman, 2003). Founder exits have been explored comparatively less even though the managerial professionalization of high-tech entrepreneurial ventures may involve the departures of other founders than the CEO (Colombo and Rossi-Lamastra, 2013).

Of course, we acknowledge the limitations of this study, which open up promising avenues for future research. First, we believe that the analysis of the influence of family ownership on departures deserves further attention. In this paper, we discuss the role of family ownership by focusing on the effects that the entry of an external buyer has on the strategic decision making of the remaining ET members. Future studies might investigate the impact of family ownership on founders' exit decisions by means of other theoretical lenses, such as the socioemotional wealth theory (Gómez-Mejía et al., 2007; 2011) or the psychological ownership theory (Pierce et al., 2001), which are obtaining increasing consensus among family business scholars. Second, we did not take into account the contractual agreements among ET members. The agreements defining the terms among the founders for what is not expressly mandated by law are rather common in Italy. They may also rule when a founder is allowed to exit the venture through a sale of shares and whether the remaining founders are obliged to buy her shares.

An additional limitation stems from the ways in which we measure the variables used in the analysis. In particular, in analyzing the effects of the heterogeneity within the ET with regard to the demographic characteristics of its members, we computed the heterogeneities in age and gender. However, it has been shown that scholars can reliably use information on individuals' functional backgrounds, industry and firm tenures, educational credentials and affiliations as predictors of their givens (Hambrick, 2007). Thus, future research might explore the effects of the heterogeneity within the ET in these latter dimensions.

These limitations do not diminish the managerial relevance of our work, which offers implications for both exiting founders and the remaining ET members. Our findings indicate that those founders who intend to sell their shares and leave their ventures should carefully consider the characteristics of the remaining ET members before searching for a buyer. Depending on these characteristics, sales to an internal or external buyer may be difficult to pursue. Being aware of such difficulties is important for exiting founders when they decide how to orient their efforts in the search for a buyer. For example, in family-owned ventures ET members are less likely to benefit from the entry of newcomers in the team than in non-family-owned ventures. As a result, before investing time and resources in searching for external buyers, the founders who

intend to exit a family-owned venture should seek an agreement with the remaining ET members to sell them their shares.

In addition, our findings provide indications to those ET members who intend to stay in a venture when at least one of the remaining founders leaves. Specifically, we encourage ET members to be aware that if the exiting founder's shares are sold to an external buyer, benefits arise that under specific circumstances overcome the costs engendered by the newcomer's entry. For example, if the ET is small, possesses scarce resources and cannot easily gain access to external resources, the entry of a newcomer in the ET may be highly beneficial for the remaining ET members even though it will potentially increase the coordination costs incurred in making strategic decisions. Hence, ET members should avoid buying the shares of the exiting founder in that situation. In fact, they should help the exiting founder to identify an external buyer who provides the venture with valuable resources. Similar reasoning holds for homogeneous ETs whose members possess homogeneous resources: a newcomer can bring new and diverse resources and novel ideas and perspectives in strategic decision making that may engender relevant benefits for the remaining ET members.

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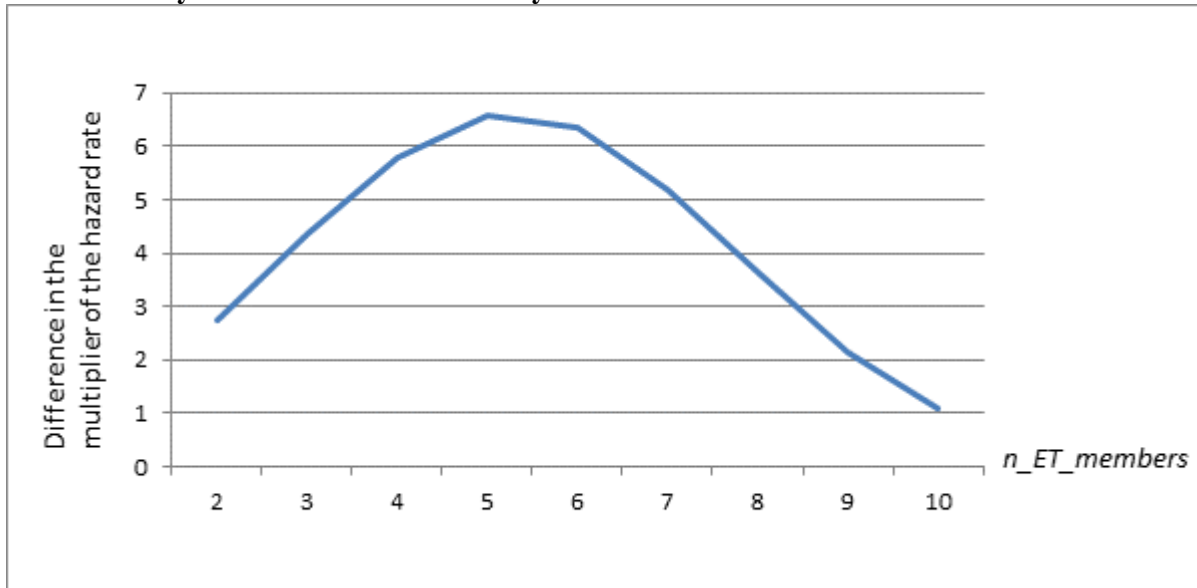


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## TABLES AND FIGURES

**Figure 1: The effect of the ET size on the difference in the multiplier of the hazard rate between sales to internal buyers and sales to external buyers.**



*Legend:* The predicted multiplier of the hazard rate for both sales to internal buyers and sales to external buyers is based on the estimated coefficients in Equations 1 and 2 in Model 2 of Table 5. All of the other continuous variables are set to their means, and the dummy variables are set to their medians.

**Table 1: A synthesis of the effects of the ET size in the cases of a sale to an internal buyer and a sale to an external buyer.**

ET size	Strategic decision making	Resources provided by the ET
Small	$\text{Coordination costs}_I < \text{Coordination costs}_E$ $\text{Net present value}_I > \text{Net present value}_E$ $\text{Likelihood}_I - \text{Likelihood}_E > 0$	$\text{Resources}_I < \text{Resources}_E$ $\text{Net present value}_I < \text{Net present value}_E$ $\text{Likelihood}_I - \text{Likelihood}_E < 0$
Large	$\text{Coordination costs}_I < \text{Coordination costs}_E$ $\text{Net present value}_I > \text{Net present value}_E$ $\text{Likelihood}_I - \text{Likelihood}_E > 0$	$\text{Resources}_I < \text{Resources}_E$ $\text{Net present value}_I < \text{Net present value}_E$ $\text{Likelihood}_I - \text{Likelihood}_E < 0$

*Legend:* Subscript I refers to the case of an exit through a sale to an internal buyer; subscript E refers to the case of an exit through a sale to an external buyer.

**Table 2: Descriptive statistics on the firms of sample founders**

	Firms of sample founders	
	No.	%
<i>Industry</i>		
ICT manufacturing	108	21.3
Other high-tech manufacturing	104	20.5
Software	128	25.2
Internet and TLC services	124	24.5
Other high-tech services	43	8.5
<i>Total</i>	<i>507</i>	<i>100.0</i>
<i>Geographic area</i>		
North-west	186	36.7
North-east	128	25.2
Center	98	19.3
South	95	18.7
<i>Total</i>	<i>507</i>	<i>100.0</i>
<i>Period</i>		
<2000	128	25.2
2000-2004	224	44.2
2005-2008	155	30.6
<i>Total</i>	<i>507</i>	<i>100.0</i>

*Legend:* ICT manufacturing includes computers, electronic components, telecommunication equipment, and optical, medical and electronic instruments; other high-tech manufacturing includes biotechnology, pharmaceuticals and advanced materials, aerospace, robotics and process automation equipment; lastly, other high-tech services include R&D and engineering services

**Table 3: Descriptive statistics of the explanatory variables of the econometric model**

Variable	No. of observations	Mean	Std. Dev.	Min.	Max.
$n_{ET\_members_{t-1}}$	9076	3.588	1.469	2.000	10.000
$age\_heterogen_{t-1}$	9076	0.925	0.122	0.240	1.000
$gender\_heterogen_{t-1}$	9076	0.688	0.425	0.000	1.000
$d\_family_{t-1}$	9076	0.189	0.391	0.000	1.000
$founder\_share_{t-1}$	9076	0.323	0.163	0.100	0.900
$founder\_age_{t-1}$	9076	41.463	9.441	18.000	80.000
$d\_firms\_ET\_members_{t-1}$	9076	0.106	0.308	0.000	1.000
$d\_other\_exits_t$	9076	0.031	0.173	0.000	1.000
$d\_patent_{t-1}$	9076	0.129	0.335	0.000	1.000
$entrepreneurship\_rate_{t-1}$	9076	0.039	0.012	0.010	0.128
$no\_profit$	9076	4.732	1.811	0.890	11.010
$crimes$	9076	4.717	1.390	2.372	6.911
$firm\_age_{t-1}$	9076	6.288	3.942	2.000	28.000
$d\_ICT\_manufacturing$	9076	0.199	0.399	0.000	1.000
$d\_other\_manufacturing$	9076	0.233	0.423	0.000	1.000
$d\_internet$	9076	0.189	0.392	0.000	1.000
$d\_software$	9076	0.295	0.456	0.000	1.000

**Table 4: The correlation matrix**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) $n_{ET\_members}_{t-1}$	1.000															
(2) $age\_heterogen_{t-1}$	-0.466	1.000														
(3) $gender\_heterogen_{t-1}$	-0.128	0.204	1.000													
(4) $d\_family_{t-1}$	-0.170	-0.072	-0.338	1.000												
(5) $founder\_share_{t-1}$	-0.694	0.306	0.045	0.119	1.000											
(6) $founder\_age_{t-1}$	-0.040	-0.218	-0.122	0.117	0.064	1.000										
(7) $d\_firms\_ET\_members_{t-1}$	0.129	0.028	0.077	-0.146	-0.147	0.121	1.000									
(8) $d\_other\_exits_t$	0.080	-0.043	-0.024	-0.024	-0.074	0.035	0.011	1.000								
(9) $d\_patent_{t-1}$	0.045	-0.083	0.018	0.042	-0.042	0.090	0.075	-0.008	1.000							
(10) $entrepreneurship\_rate_{t-1}$	0.023	0.050	-0.014	0.042	-0.032	-0.085	-0.055	-0.059	-0.029	1.000						
(11) $no\_profit$	0.026	-0.025	-0.009	-0.009	-0.031	0.018	0.042	0.016	-0.039	0.064	1.000					
(12) $crimes$	0.064	-0.130	-0.004	0.033	-0.040	0.061	-0.007	0.008	-0.050	-0.107	-0.207	1.000				
(13) $firm\_age_{t-1}$	-0.076	0.095	-0.047	0.141	0.071	0.224	-0.058	0.023	0.089	-0.070	0.006	-0.066	1.000			
(14) $d\_ICT\_manufacturing$	0.047	-0.110	-0.078	0.076	-0.034	0.084	0.046	-0.018	0.220	0.035	-0.085	-0.038	0.012	1.000		
(15) $d\_other\_manufacturing$	-0.055	-0.004	0.055	-0.024	0.059	-0.079	-0.089	0.042	-0.149	-0.088	0.039	0.017	-0.018	-0.275	1.000	
(16) $d\_internet$	-0.153	0.042	0.015	0.114	0.103	0.060	0.008	-0.005	0.025	0.016	-0.096	0.038	0.006	-0.241	-0.266	1.000
(17) $d\_software$	0.103	0.076	0.057	-0.170	-0.072	-0.065	-0.028	-0.006	-0.130	0.025	0.105	0.046	0.026	-0.322	-0.356	-0.312

**Table 5: The antecedents of entrepreneurial exit: a Cox proportional hazards competing risks model**

	Model 1										Model 2											
	Equation 1		Equation 2		z-test		Equation 3		Equation 1		Equation 2		z-test		Equation 3							
$n_{ET\_members}_{t-1}$	0.034	(0.057)	-0.500	(0.123)	***	0.534	***	-0.156	(0.093)	*	0.850	(0.507)	*	-1.014	(0.279)	***	1.864	***	-0.574	(0.224)	*	
$sq\_n_{ET\_members}_{t-1}$	-		-			-		-			-0.081	(0.055)		0.057	(0.027)	**	-0.137	**	0.046	(0.024)	*	
$age\_heterogen_{t-1}$	-0.077	(0.754)	2.087	(1.058)	**	-2.164	**	0.373	(0.833)		-0.122	(0.748)		2.096	(1.049)	**	-2.218	**	0.325	(0.838)		
$gender\_heterogen_{t-1}$	-0.259	(0.254)	0.244	(0.244)		-0.503	*	-0.107	(0.226)		-0.158	(0.255)		0.203	(0.251)		-0.361		-0.144	(0.227)		
$d\_family_{t-1}$	0.000	(0.274)	-1.170	(0.387)	***	1.171	***	-0.098	(0.243)		-0.012	(0.273)		-1.159	(0.385)	***	1.147	**	-0.060	(0.248)		
$founder\_share_{t-1}$	-2.247	(0.591)	***	-0.532	(0.640)		-1.715	**	-0.488	(0.490)		-1.337	(0.679)	**	-0.978	(0.664)		-0.360		-0.777	(0.508)	
$founder\_age_{t-1}$	-0.002	(0.008)		-0.005	(0.008)		0.003		0.011	(0.007)		-0.001	(0.008)		-0.005	(0.008)		0.004		0.011	(0.007)	*
$d\_firms\_ET\_members_{t-1}$	-0.429	(0.313)		-0.132	(0.317)		-0.297		-0.028	(0.279)		-0.492	(0.310)		-0.090	(0.316)		-0.402		-0.017	(0.280)	
$d\_other\_exits_t$	3.110	(0.183)	***	3.952	(0.195)	***	-0.842	***	4.134	(0.178)	***	3.107	(0.181)	***	3.971	(0.195)	***	-0.864	***	4.152	(0.180)	*
$d\_patent_{t-1}$	-0.402	(0.341)		-0.038	(0.359)		-0.364		0.159	(0.210)		-0.435	(0.343)		-0.007	(0.355)		-0.428		0.151	(0.214)	
$entrepreneurship\_rate_{t-1}$	2.409	(6.764)		7.769	(7.280)		-5.360		-17.038	(10.028)	*	2.554	(6.647)		7.739	(7.351)		-5.185		-17.142	(10.176)	*
$no\_profit$	-0.061	(0.051)		0.057	(0.052)		-0.119	*	0.059	(0.043)		-0.068	(0.051)		0.061	(0.052)		-0.129		0.066	(0.043)	
$crimes$	-0.025	(0.063)		0.023	(0.068)		-0.048		-0.009	(0.059)		-0.038	(0.061)		0.026	(0.069)		-0.064		-0.012	(0.059)	
$firm\_age_{t-1}$	-0.012	(0.047)		0.025	(0.040)		-0.036		-0.001	(0.036)		-0.007	(0.046)		0.022	(0.041)		-0.029		0.000	(0.037)	
$d\_ICT\_manufacturing$	0.031	(0.345)		0.429	(0.464)		-0.398		-0.099	(0.371)		0.080	(0.345)		0.422	(0.470)		-0.342		-0.118	(0.373)	
$d\_other\_manufacturing$	0.093	(0.340)		-0.109	(0.453)		0.202		-0.197	(0.331)		0.127	(0.346)		-0.102	(0.461)		0.229		-0.214	(0.331)	
$d\_internet$	0.192	(0.356)		0.022	(0.467)		0.170		-0.091	(0.368)		0.259	(0.364)		0.022	(0.472)		0.236		-0.105	(0.363)	
$d\_software$	0.246	(0.315)		0.203	(0.460)		0.043		-0.396	(0.360)		0.327	(0.321)		0.193	(0.467)		0.134		-0.424	(0.350)	
Log-pseudolikelihood	-1092.860		-757.993		-		-792.432		-1088.227		-756.470		-		-791.420							
Wald $\chi^2$ test	541.48 (17)***		597.33 (17)***		-		910.11 (17)***		551.11 (18)***		610.23 (18)***		-		904.18 (18)***							
$\chi^2$ test: $n_{ET\_members}_{t-1}$ $=sq\_n_{ET\_members}_{t-1}=0$	-		-		-		-		4.69 (2)*		24.99 (2)***		-		8.06 (2)**							
No. observations	9076		9076		-		9076		9076		9076		-		9076							
No. founders	1494		1494		-		1494		1494		1494		-		1494							
No. firms	507		507		-		507		507		507		-		507							

*Notes:* \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The robust standard errors and the number of restrictions are in parentheses. Equation 1: exits through sales to internal buyers; Equation 2: exits through sales to external buyers; Equation 3: other exit paths. The z-tests are tests of the difference between the coefficients of Equations 1 and 2.