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Factors Influencing the Entrepreneurial Engagement of Opportunity and Necessity Entrepreneurs

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Abstract: This paper investigates determinants of engagement in various stages of the entrepreneurial process while considering an individual's start-up motivation using 2007 survey data for 27 European countries and the US. Next to opportunity and necessity start-up motivations, we take into account individuals driven by a combination of both motivations. We observe that opportunity- and necessity-driven entrepreneurs as well as those with mixed start-up motivations have different profiles. Furthermore, they differ concerning the factors that inspire or hinder them to engage in the entrepreneurial process more fully ('to climb the entrepreneurial ladder'). For example, entrepreneurship-specific education, self-employed parents, risk tolerance, perception of lack of financial support, and living in a metropolitan area are important variables in determining entrepreneurial engagement and failure for opportunity-driven individuals, but they are not (or less) important for necessity-driven individuals.

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1. Introduction

Why does an individual take the personal, social and financial risks that are associated with starting up a new venture? Individuals decide to engage in entrepreneurial activity because of different (combinations of) motivations. Generally, a distinction is made between positive factors that 'pull' and negative situational factors that 'push' people into entrepreneurship (Shapiro and Sokol, 1982; Gilad and Levine, 1986). Examples of 'pull' motivations are the need for achievement, the desire to be independent and social development possibilities. 'Push' motivations may arise from the exit from or risk of unemployment, family pressure and/or dissatisfaction with the present situation in general. In this paper, we investigate whether individuals, who report to be motivated by pull start-up factors and individuals who report to be motivated by push start-up factors, are different concerning the factors that influence their entrepreneurial engagement and failure.

Within the context of the Global Entrepreneurship Monitor, Reynolds *et al.* (2001) capture the distinction between push and pull motivation by introducing the concept of opportunity and necessity entrepreneurship¹. There is a wide variety of measures of opportunity and necessity entrepreneurship (Giacomin *et al.*, 2007; Block and Wagner, 2007). Nevertheless, there is consensus in that necessity entrepreneurs are considered to be driven mainly by push motivations, while pull factors form the basis for opportunity entrepreneurs to set-up a new venture. Opportunity entrepreneurship reflects start-up efforts "to take advantage of a business opportunity", whereas necessity entrepreneurship exists when there are "no better choices for work". Whereas opportunity entrepreneurs pursue a business opportunity for personal interest, often when they are still wage-employed (Reynolds *et al.*, 2001, p.8), for individuals who start out of necessity motivations entrepreneurship is often the best, but not necessarily the preferred, occupation. Note that a necessity-based start-up may in fact evolve into an attractive alternative over time (Granger *et al.*, 1995, Hinz and Jungbauer-Gans, 1999; Kautonen and Palmroos, 2009).

Previous, mostly empirical, research shows that it is crucial to distinguish between opportunity and necessity entrepreneurs in theory and practice for at least four reasons. First, necessity and opportunity entrepreneurs appear to differ in terms of their socio-economic characteristics, such as the level of education, relevant experience and age (Reynolds *et al.*, 2001; Amit and Muller, 1995; Block and Wagner, 2007; Wagner, 2005; Giacomin *et al.*, 2007). Second, the start-up motivation may have consequences for the way in which a business is managed and for business performance. For example, entrepreneurs who start a business because they want to earn more money than in wage-employment, can be expected to behave differently than individuals who create a new venture to be better able to combine work and household responsibilities (Hessels *et al.*, 2008). Furthermore, necessity-driven entrepreneurs seem to be less satisfied than opportunity-driven entrepreneurs (Block and Wagner, 2007; Galbraith and Latham, 1996; Block and Koellinger, 2009; Kautonen and Palmroos, 2009). At the macro level, opportunity and necessity entrepreneurs have a differential impact on economic growth and job creation (Wennekers *et al.*, 2005; Wong *et al.*, 2005). Also at the micro level outcomes point in the direction of an inferior performance of necessity entrepreneurs (Block and Wagner, 2007; Amit and Muller, 1995; Solymossy, 1997; Vivarelli, 2004). Third, in their study of the interplay between the business

¹ Different terminology has been used to address this distinction. For example, Vivarelli (2004) refers to "defensive" and "innovative" motivations, while Giacomin *et al.* (2007) elaborate on the "recession-push" and the "demand-pull" theory. Necessity entrepreneurship has also been referred to as the "refugee effect" in Thurik *et al.* (2008).

cycle and the entrepreneurship cycle Koellinger and Thurik (2009) show that, when a discrimination is made between the start-up motives, opportunity entrepreneurship leads the cycle by two years, while necessity entrepreneurship leads the cycle by only one year. While their explanation based upon 'legitimation' or 'moral approval' is somewhat speculative, there may be important policy implications given that start-up motives seem to interact differently with the cycle. A fourth argument resides in the observation that determinants of (nascent) opportunity and necessity entrepreneurship differ (Block and Wagner, 2007; Wagner, 2005; Morales-Gualdrón and Roig, 2005). This has important consequences for policy making as measures to stimulate necessity entrepreneurship do not necessarily benefit opportunity-driven entrepreneurs, and vice-versa. For example, stimulating the unemployed to start a business will benefit necessity and not opportunity entrepreneurs (Bergmann and Sternberg, 2007).

The aim of the present study is to examine the impact of individual and regional characteristics on start-up motivation (i.e., opportunity versus necessity). More specifically, we investigate the determinants of different levels of entrepreneurial engagement of opportunity-driven and necessity-driven entrepreneurs (Grilo and Thurik, 2008). The question is to what extent these characteristics have a differential impact on opportunity-based and necessity-based entrepreneurial engagement and whether their impact varies with the stage in the entrepreneurial process. This enables us to assess which factors hinder or stimulate opportunity and necessity entrepreneurs at different stages of their entrepreneurial engagement. We use survey data from the Flash Eurobarometer Survey on Entrepreneurship consisting of more than 20,000 observations for the 25 EU Member States, Norway, Iceland, and the United States. This allows us to control for, and analyze, cross-country heterogeneity.

We distinguish between different steps in the entrepreneurial process including "never thought about starting a business"; "thinking about starting a business"; "once thought about it or took steps, but gave up"; "taking steps to start a business"; "running a business for less than three years"; "running a business for more than three years"; "once had a business, but failed" and "once had a business, but was closed, transferred or sold" (Grilo and Thurik, 2008). For all but the first three steps individuals reported whether they started a business because of an opportunity, out of necessity, or because of both motivations (i.e., mixed motivation).

Apart from the fact that only a limited number of authors have identified differences in individual characteristics of opportunity and necessity entrepreneurs, this study has several important contributions. First, we use a large and representative data set covering 27 member states of the European Union and the United States. Existing studies investigate opportunity and necessity motivations only at the national level. For example, studies by Block and Wagner (2007) and Giacomini *et al.* (2007) are restricted to Germany and Wallonia, respectively. Second, we discriminate between different steps in the entrepreneurial process (potential, young, established, and former or exited entrepreneurs)², whereas others consider only one level of entrepreneurial engagement, such as nascent activity (Wagner, 2005; Bergmann and Sternberg, 2007). This study does not only explore the characteristics of individuals starting a business for different reasons, but goes a step further and examines the influence of these characteristics on several stages in the entrepreneurial process for opportunity, necessity and mixed-motivated entrepreneurs. In this respect we follow up on a concern that has been brought forward by Giacomini *et al.* (2007, p.3), arguing that: "so far, little research has attempted to identify the mechanisms that could explain the positioning of entrepreneurs in relation to the push-pull binomial factor". Finally, in addition

² With respect to the former entrepreneurs we have information on whether the business failed or was sold.

to 'pure' opportunity and necessity entrepreneurs, we take into account individuals with mixed motivations, i.e., who are driven by both necessity and opportunity motivation. Several studies highlight the possibility that push and pull factors are simultaneously present when an individual decides to start up a business (Giacomin *et al.*, 2007; Block and Sandner, 2009; Solymossy, 1997).

The remainder of this paper is structured as follows. In the next section, the concepts of opportunity and necessity entrepreneurship and the relationship with push and pull factors are discussed. Moreover, we link this motivational dichotomy to other concepts and perspectives. Section three elaborates on earlier findings on the influence of individual and regional characteristics on entrepreneurial engagement and performance of opportunity, necessity and mixed-motivated entrepreneurs. In Section four we introduce the data and methodology. The results of our analyses are shown in Section six. This paper ends with the conclusion.

2. Push versus pull motivation

Different scholars have contributed to our understanding of the supply of entrepreneurship (Hamilton and Harper, 1994). Apart from the (perceived) ability to become an entrepreneur, determined by factors, such as human, social and financial capital, individuals have to show a willingness to become self-employed. Here entrepreneurial motivation plays a role. Gilad and Levine (1986) distinguish between push and pull hypotheses of entrepreneurial motivation. The distinction between push and pull factors is also implicitly present in the Model of the Entrepreneurial Event (Shapiro and Sokol, 1982), arguing that the act of starting up a business is dependent upon a change that occurs in the life of an individual, i.e., a displacement. This displacement can take the negative form of the loss of a job or a divorce, but may also be positive, such as an inheritance³. Individual characteristics (including socio-cultural factors and economic, social and human capital) determine how individuals experience, value and perceive 'disruptive' events (Shapiro and Sokol, 1982) or encountered opportunities, as well as how they react to them (Giacomin *et al.*, 2007). It is not the objective situation but rather the perception of an individual that makes him/her decide upon an entrepreneurial career. In reaction to a certain 'disruptive' event some may start a business, whereas others go in a different direction.

In terms of push motivation, Oxenfeldt (1943) was one of the first to argue that unemployed individuals or individuals with low prospects for wage-employment may become self-employed to earn a living. This can be traced back to the Knight's (1921) view that individuals make a decision between three activities: unemployment, self-employment and employment. The effect of unemployment, lowering the opportunity costs of self-employment, thereby driving individuals to start their own business, is often referred to as the push effect of unemployment⁴. Evidence of this unemployment-push effect has been provided in several studies (Storey and Jones, 1987; Audretsch and Vivarelli, 1996; Foti and Vivarelli, 1994; Ritsilä and Tervo, 2002; Gilad and Levine, 1986). Although push motivation is usually understood as the unemployment-push, there are, in fact, other factors that may push individuals into the direction of new venture creation. In addition to unemployment, Giacomin *et al.* (2007) mention the push motivations of autonomy (instead of being bossed around) and family pressure, for example in case of a business transfer

³ Based on the desirability and feasibility of starting up a business, this displacement will eventually determine whether an individual actually engages in entrepreneurial activity.

⁴ Note that there is a precondition: an unemployed individual only starts a business if (s)he believes the start-up can succeed and is worth working for (Bergmann and Sternberg, 2007).

to the new generation. Sarasvathy (2004) argues that there are different types of necessity entrepreneurs, including individuals who are fired from their jobs; individuals who decide themselves to leave wage-employment because their boss does not want to commercialize their ideas or inventions; and individuals who are "unhireable", e.g., due to a lack of educational or language skills (immigrant entrepreneurs) or criminal backgrounds. In the same vein, several studies show evidence of job dissatisfaction as a reason for new venture creation (Hisrich and Brush, 1986; Brockhaus, 1980; Cromie and Hayes, 1991).

As with push motivation, pull motivation may come in different forms. Giacomini *et al.* (2007) distinguish between three pull motivations: market opportunity, social status and profit⁵. Shane *et al.* (1991) find evidence for four motivation constructs, including recognition, independence, learning and roles (the latter of which is driven by the wish to continue the family tradition, to have more influence in the community and to follow a role model). Carter *et al.* (2003) distinguish between six categories of motivation: innovation, independence, recognition, roles, financial success and self-realization. Along similar lines are the categorizations in studies by Birley and Westhead (1994) and Scheinberg and MacMillan (1988), which each provide evidence of a multitude of (pull) motivations, including the need for approval, independence, personal development, improved welfare and wealth, and following role models.

Notwithstanding the role played by each of the different motives in the explanation of entrepreneurship, it has been found that the wish to be independent is the dominant factor explaining new venture creation (Scheinberg and MacMillan, 1988; Birley and Westhead, 1994). Hence, individuals are more likely to be pulled than pushed into entrepreneurship. This does not mean that other factors did not play a role in this occupational decision. It often happens that individuals are driven by a combination of factors. As recognized by Birley and Westhead (1994, p.14): "...starting a business is a complex process which involves a variety of motivations and stimuli". This also means that, next to the 'pure' push and pull motivated individuals, there may be (potential) entrepreneurs who are motivated by a combination of push and pull factors. Several studies highlight the possibility that push and pull factors are simultaneously present when an individual decides to start up a business (Giacomini *et al.*, 2007; Block and Sandner, 2009; Solymossy, 1997). In the present study we investigate the characteristics and drivers of three types of entrepreneurs (opportunity-motivated, necessity-motivated and mixed motivated entrepreneurs) at different stages of the entrepreneurial process (distinguishing between potential (nascent), recently established, incumbent, and former entrepreneurs)⁶.

3. Motivation and stages of entrepreneurship

3.1. Individual characteristics and motivation

In the present section we summarize the empirical evidence of the relationship between opportunity/necessity entrepreneurship and individual-level factors. In doing this, we distinguish between different levels of entrepreneurial engagement.

Research on the link between gender and entrepreneurial motivation has yielded contradictory findings. Giacomini *et al.* (2007) find that being a man has a positive effect on the decision to start

⁵ The definition of opportunity entrepreneurship is limited to the pull motivation of starting a business because of the perception and pursuit of a lucrative market opportunity.

⁶ With respect to the former entrepreneurs we have information on whether the business failed or was sold.

a business because of 'exit of unemployment'. Wagner (2005) finds a significant impact of being a man on the probability of being an opportunity nascent entrepreneur versus being unemployed or in paid employment. This result is supported in Bergmann and Sternberg (2007). Nevertheless, studies by Block and Wagner (2007) and Block and Sandner (2009) fail to find a significant effect of gender on opportunity versus necessity entrepreneurship⁷.

Reynolds *et al.* (2001) observed that age patterns are different for opportunity and necessity entrepreneurs. Giacomini *et al.* (2007) find that age positively affects the start-up of a business because of "exit from unemployment", which could be related to the fact that older people have a lower employability. The same authors find that age is negatively related to the "search of the profit" and "social development" opportunity motivations. Block and Sandner (2009) and Wagner (2005) find that opportunity entrepreneurs are older than necessity entrepreneurs. Bergmann and Sternberg (2007) do not find a significant effect of age on necessity nascent entrepreneurship, while age has an inverse U-shaped relationship with opportunity nascent activity. In Wagner (2005), the relationships are exactly reversed, i.e., no effect of age on opportunity nascent activity, and inversely U-shaped in case of necessity nascent entrepreneurial engagement.

On the one hand, one might suspect that higher educated individuals have more alternatives, lowering the chances to be a necessity entrepreneur; on the other hand, lower educated people might have difficulties in finding a job. Earlier research has shown that human capital of opportunity entrepreneurs is more specific than that of necessity entrepreneurs (Block and Wagner, 2007), whereas these authors find no difference between necessity and opportunity entrepreneurs in terms of formal education. According to Block and Sandner (2009) necessity entrepreneurs are less likely to be educated in the field that they start and run a business in. Giacomini *et al.* (2007) find that previous professional experience (in the private or public sector) has a positive impact on start-up because of a market opportunity (Van Gelderen *et al.*, 2006), while they do not find an effect of the level of education. Higher education matters in Bergmann and Sternberg (2007) for opportunity, but not for necessity-based nascent engagement (see also Morales-Gualdrón and Roig, 2005). In Wagner (2005), the number of professional degrees is included in the analysis, and this variable is significantly positively related to being an opportunity nascent entrepreneur, while it has no effect on being a necessity nascent entrepreneur.

The social identity of an individual will affect whether (s)he is into push or pull dynamics (Giacomini *et al.*, 2007). According to Amit and Muller (1995) a higher percentage of "push entrepreneurs" report a neutral attitude towards entrepreneurship from their parents, whereas more "pull entrepreneurs" were either encouraged or discouraged to engage in entrepreneurial activity by their parents. The odds of being a pull entrepreneur are higher when there is a spouse who is also an entrepreneur. Wagner (2005) shows that nascent opportunity entrepreneurs are more likely to have a role model in the family than nascent necessity entrepreneurs. According to Wagner (2005) family role models matter to engage in nascent activity for opportunity-driven individuals, but not for their necessity-driven counterparts. Morales-Gualdrón and Roig (2005), on the other hand, find an equal significant positive influence of the variable "knowing an entrepreneur" on opportunity and necessity nascent entrepreneurship.

Earlier research has shown that push and pull entrepreneurs are similar in their risk attitudes when controlling for gender, age and education (Amit and Muller, 1995). On the other hand,

⁷ Note that in Block and Sandner (2009) opportunity entrepreneurs are those individuals who voluntarily left their previous job in paid employment and necessity entrepreneurs are those who were dismissed or laid off by their employer.

Wagner (2005) finds that fear of failure (as an approximation of risk aversion) is lower among nascent opportunity entrepreneurs than nascent necessity entrepreneurs. Wagner (2005) and Morales-Gualdrón and Roig (2005) find that fear of failure hinders nascent entrepreneurial activity for opportunity and necessity entrepreneurs.

In addition to these variables, we also have the availability of entrepreneurship education, perception variables and a variable denoting whether an individual is located in a metropolitan, urban or rural area.

3.2. Performance and motivation

According to goal setting theory, if some people perform better than others despite being equal in ability and knowledge, then the cause must be motivational (Latham and Locke, 1991). It is often argued that entrepreneurs motivated by push factors tend to possess lower endowments of relevant human capital which they need to manage a successful high-growth business. Because opportunity entrepreneurs start voluntarily (often in an area of their expertise), they may be better prepared for their entry into self-employment and have higher chances of survival. On the other hand, opportunity entrepreneurs tend to be more motivated by non-monetary rewards than necessity entrepreneurs. If then, after start-up, opportunity entrepreneurs are disappointed with the intrinsic benefits, they probably decide more rapidly to close down the business and look for new opportunities than necessity entrepreneurs (Block and Sandner, 2009). Opportunity entrepreneurs tend to have higher opportunity costs than necessity entrepreneurs.

At the macro level, several studies point at a performance disadvantage of necessity entrepreneurship. Acs and Varga (2005) show that whereas opportunity entrepreneurship has a positive impact on technological change, necessity entrepreneurship does not have an effect. In another study, Acs (2006) shows that there is a positive relationship between income level and the share of opportunity versus necessity entrepreneurs in a country. Wong *et al.* (2005) find the expected signs of the relationships between opportunity and necessity entrepreneurship and economic performance, but their findings are not significant.

At the micro level, Amit and Muller (1995) find that pull entrepreneurs are more successful, both in terms of venture success (sales per employee) and personal income. This result is similar when controlled for other relevant factors that may influence income. Block and Wagner (2007) find that the opportunities exploited by opportunity entrepreneurs on average are more profitable than those exploited by necessity entrepreneurs, i.e., the earnings of opportunity entrepreneurs are 15 percent higher than those of necessity entrepreneurs. The lower earnings of necessity entrepreneurs are confirmed by Block and Sandner (2009). Vivarelli (2004) finds that performance of firms started up by individuals based on a convinced choice (i.e., positive entrepreneurial calculation) is higher than for start-ups driven by a defensive reason (e.g., escape from unemployment). According to Vivarelli (2004, p.43): ... *"if the underlying motivation to start a new firm is explicitly linked to innovative projects, then a better post-entry performance may be expected than if a new firm is started on the basis of a purely 'defensive' motivation, such as the fear of becoming unemployed"*⁸. In terms of job creation, Reynolds *et al.* (2002) find that opportunity entrepreneurs are more likely than necessity entrepreneurs to expect their ventures to create more than 20 jobs within the next five years.

⁸ Several studies show a positive relationship between innovative motivation and post-entry performance (Vivarelli and Audretsch, 1998; Arrighetti and Vivarelli, 1999). Nevertheless, according to Vivarelli (2004) deeply-rooted psychological motivation, such as the strong desire to be independent, can hinder rational and objective consideration of actual profit expectations for the new firm.

Empirical analyses relating probabilities of exiting the entrepreneurial process to the motivation of the entrepreneur are scarce. Block and Sandner (2009) investigate what the impact of opportunity or necessity motivation is on self-employment duration in Germany. They find that the mere fact whether an entrepreneur started out of necessity or opportunity does not have a significant effect on self-employment duration, corrected for the variable 'educated in this profession'. Hence, once a necessity entrepreneur starts a venture in a profession of his or her expertise, the survival chances increase and are similar to those of opportunity entrepreneurs. Taylor (1999) investigates self-employment spells in Britain and distinguishes between involuntary termination (bankruptcy) and voluntary termination (switch to self-employment).

Not only may opportunity and necessity entrepreneurs differ in terms of the chances of success, they also may also have different success factors. Empirical evidence on this subject turns out to be scarce. Block and Wagner (2007) find that education and general labor market experience positively affect the earnings of opportunity entrepreneurs but not those of necessity entrepreneurs. On the other hand, specific vocational training boosts the earnings of necessity entrepreneurs but not those of opportunity entrepreneurs.

As already pointed out, we also take into account these mixed motivated entrepreneurs in the present study. According to Amit and Muller (1995, p. 67): "*When both forces ("pull" and "push") are at work one might expect superior performance*".

4. Data and methodology

To empirically test whether opportunity and necessity entrepreneurs are a different species (rather than similar creatures) we use individual-level data from the 2007 "Flash Eurobarometer Survey on Entrepreneurship, No. 192" of the European Commission. In the period 9-16 January 2007 20,674 randomized interviews were conducted by Gallup Organization Europe with respondents aged 15 years and over. Information was collected for the then 25 Member States of the European Union⁹ as well as Iceland, Norway and the United States.

4.1. Engagement levels

In their study, Grilo and Thurik (2008) introduce the concept of "engagement levels", each of them denoting a different level of involvement in the entrepreneurial process. Entrepreneurial engagement levels of the respondents are determined by the answers to the question: "*Have you ever started a business or are you taking steps to start one?*" with the following answer categories (identified for 19,247 observations in total):

- "No, It never came to your mind to start a business" ("never considered"; 9,812 observations)
- "No, but you are thinking about it" ("thinking"; 2,298)
- "No, you thought of it or you had already taken steps to start a business but gave up" ("gave up"; 2,687)
- "Yes, you are currently taking steps to start a new business" ("taking steps"; 738)

⁹ Bulgaria and Rumania are not included since they were not yet Member States of the European Union in 2007.

- "Yes, you have started or taken over a business in the last 3 years which is still active today" ("young business"; 614)
- "Yes, you started or took over a business more than 3 years ago and it is still active" ("established business"; 1,258)
- "Yes, you once started a business, but currently you are no longer an entrepreneur since business has failed" ("failure"; 487)
- "Yes, you once started a business, but currently you are no longer an entrepreneur since business was sold, transferred or closed" ("sell-off"; 1,353)

4.2. Opportunity and necessity

Respondents indicate whether they have ever started a business or are taking steps to start one because of (1) opportunity; (2) necessity; or (3) opportunity and necessity. This information is only available for the engagement levels "taking steps", "young business", "established business", "failure" and "sell-off".¹⁰ The following question is asked: "*All in all, would you say you started, or are starting, your business because you saw an opportunity or you started out of necessity?*"

The number of individuals associated with each motivation amounts to 2,605 (59%), 1,314 (30%) and 531 (12%), respectively, adding up to a total of 4,450 respondents for which we have information on the motivation. Note that this is also the cumulative number of individuals in the engagement levels "taking steps", "young business", "established business", "failure", and "sell-off". The finding that there are more opportunity than necessity entrepreneurs is supported by other studies (Block and Sandner, 2009; Wagner, 2005). More entrepreneurs appear to be driven by pull factors, as compared to push factors. Our data also show that the proportion of opportunity-driven versus necessity-driven individuals decreases steadily with the level of entrepreneurial engagement, varying from 67% (versus 21%) and 59% (versus 25%) for "taking steps" and "young business", to 52% (versus 36%) for "established business". Relatively more opportunity-driven individuals fail (60% versus 31%) and sell their businesses (60% versus 30%) than necessity-driven entrepreneurs. Hence, it seems that there are more individuals taking initiatives to start a new venture because they see an opportunity than out of necessity, but that the share of business owners quitting their businesses mainly consists of opportunity-driven entrepreneurs as well. This last observation together with the declining proportion of opportunity-driven individuals across the engagement levels "taking steps", "young business" and "established business" hints at a higher persistence of necessity-driven individuals to engage in the entrepreneurial process more fully.

Our categorization of motivational type is different from that in previous empirical studies. For example, Block and Wagner (2007) base their categorization on whether individuals have voluntarily left their paid jobs (classified as opportunity) or were dismissed or laid off (classified as necessity). In an earlier study, Wagner (2005) labels individuals as necessity entrepreneurs when they "do not have a better alternative to earn a living", and labels individuals as opportunity entrepreneurs if they "start a new venture to realize a business idea". For the present study we

¹⁰ We thus do not have this information for individuals in the engagement levels "never considered", "thinking" and "gave up". There are also individuals for which the motivation behind starting up a business is known, but who have not specified their engagement level. In total, this concerns 302 individuals. Because these observations cannot be included in our analysis in a later stadium, we will not take them into account from this point onwards. There is also a handful of individuals (153) for which information on the engagement level is available, but for which we do not know the motivational type. We will not take into account these individuals either. Lastly, there are respondents that have not specified their engagement level or motivation behind starting up their business (972).

have no detailed information on why individuals have classified themselves as opportunity, necessity or mixed-motivated entrepreneurs and, accordingly, we have to rely upon respondents' self-assessments. We acknowledge that perhaps this is a limitation of the data. Individuals in our data set are also able to indicate more than one motivation, combining opportunity and necessity-driven entrepreneurship. This is in line with other studies, recognizing the possibility that an individual has more than one driver (Giacomin *et al.*, 2007; Block and Sandner, 2009; Solymossy, 1997).

4.3. Explanatory variables

An overview of all explanatory variables is given in Table 1. Demographics (Davidsson, 2006; Parker, 2009; Grilo and Thurik, 2008), risk attitude (Parker, 1996, 1997), perception of barriers to entrepreneurship (Arenius and Minniti, 2005; Grilo and Thurik, 2008; Koellinger and Minniti, 2006), and location (Stam *et al.*, 2010) are variables often included when explaining entrepreneurial activity.

Table 1. Individual explanatory variables

Variable name	Variable description
Gender	Male (=1) or female (=0).
Age	Age of the respondent in years.
Education level	Age when finished full time education.
Entrepreneurship education	To what extent do you agree with the statement: <i>My school education helped me to develop my sense of initiative (entrepreneurial attitude)?</i> Dummy variable with 'strongly agree' or 'agree'=1 and 'disagree' or 'strongly disagree'=0.
Self-employed parents	Dummy variable with value 1 if the mother, father or both are self-employed and value 0 if neither of the parents is self-employed.
Risk tolerance	To what extent do you agree with the statement: <i>One should not start a business if there is a risk it might fail?</i> Dummy variable with 'strongly disagree' or 'disagree'=1 and 'strongly agree' or 'agree'=0.
Stigma failure	To what extent do you agree with the statement: <i>People who started their own business and have failed should be given a second chance?</i> Dummy variable with 'strongly disagree' or 'disagree'=1 and 'strongly agree' or 'agree'=0.
Perception administrative complexities	To what extent do you agree with the statement: <i>It is difficult to start one's own business due to the complex administrative procedures?</i> Dummy variable with 'strongly agree' or 'agree'=1 and 'disagree' or 'strongly disagree'=0.
Perception insufficient information	To what extent do you agree with the statement: <i>It is difficult to obtain sufficient information on how to start a business?</i> Dummy variable with 'strongly agree' or 'agree'=1 and 'disagree' or 'strongly disagree'=0.
Perception lack of financial support	To what extent do you agree with the statement: <i>It is difficult to start one's own business due to a lack of available financial support?</i> Dummy variable with 'strongly agree' or 'agree'=1 and 'disagree' or 'strongly disagree'=0.
Metropolitan	Dummy variable with value 1 if respondent lives in a metropolitan zone and value 0 if respondent lives in an urban centre or urban zone.
Urban	Dummy variable with value 1 if respondent lives in an urban centre zone and value 0 if respondent lives in a metropolitan or rural zone.

Countries are grouped using the categorization of institutional systems by Esping-Andersen (1999). Table 2 displays this categorization with the Scandinavian countries considered to be most institutionally advanced and the post-communist countries least institutionally advanced. In our analyses we take Anglo-Saxon/Liberal countries as the base category. Therefore, the country-

group coefficients should be interpreted as the impact of being within the corresponding institutional systems group rather than being in the Anglo-Saxon/Liberal group. In Table 2, we also show the relative contribution of the three types of entrepreneurs for each country categorization. Cross-country variation is reflected by the fact that Scandinavian countries have the highest proportion of opportunity-driven entrepreneurs whereas Southern European countries close this ranking.

Table 2. Categorization of national institutional systems

Category	Countries	Obs.	% Opp	% Nec	% Both
Scandinavian/Social Democratic/Universalist	Denmark, Finland, Iceland, Norway, Sweden	592	70	21	9
Corporatist/Social Insurance	Austria, Belgium, France, Germany, Italy, Luxembourg, Netherlands	1,080	63	25	11
Anglo-Saxon/Liberal	Ireland, United Kingdom, United States	718	70	23	6
Southern Europe	Cyprus, Greece, Malta, Portugal, Spain	926	45	39	16
Post-communist	Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia	1,134	52	34	14
Aggregate	EU 25, Iceland, Norway, US	4,450	59	30	12

5. Results

5.1. Characteristics of opportunity, necessity and mixed-motivated entrepreneurs

Table 3 displays the proportions of ones for all dummy variables and the averages for continuous variables for opportunity, necessity and mixed-motivated entrepreneurs and for individuals in "never considered". Table 3 provides an indication of what the characteristics are of the three motivational types of entrepreneurs and of individuals that have never engaged in any entrepreneurial activity. Regular two-sided large sample tests are carried out to investigate differences for each variable.

From Table 3 it becomes clear that there is a link between an individual's characteristics and its motivation. For example, it seems to be the case that men are more likely to be opportunity rather than necessity or mixed-motivated entrepreneurs.

Chances of being a necessity entrepreneur (or both motivations) versus an opportunity entrepreneur increase with age. This is thus in line with findings of Block and Sandner (2009) and Wagner (2005).

The results in Table 3 show that the level of education does not distinguish opportunity from necessity entrepreneurs.

Remarkably, individuals with at least one self-employed parent are least likely an opportunity entrepreneur, contradicting the results in Wagner (2005).

We find that opportunity entrepreneurs are less risk averse than necessity-driven individuals.

Table 3. Averages of all variables for the three motivational types and "never considered"

Variable	Never considered	Opportunity	Necessity	Mixed-motivated
Gender ^{a,b,c,d,e}	0.31	0.57	0.52	0.50
Age ^{a,c,d,f}	50.91	47.64	50.47	48.29
Education level ^{a,b,c,d,f}	18.86	20.48	19.68	21.01
Entrepreneurship education ^{a,b,c,d}	0.51	0.60	0.57	0.59
Self-employed parents ^{a,b,c,e}	0.24	0.32	0.35	0.39
Risk tolerance ^{a,b,c}	0.43	0.60	0.50	0.56
Stigma failure ^{c,f}	0.15	0.13	0.14	0.10
Perception of admin. complexities ^{a,b,c}	0.79	0.67	0.71	0.67
Perception of insufficient information ^{a,d,e}	0.52	0.44	0.54	0.51
Perception lack of financial support ^{a,d,e}	0.81	0.70	0.81	0.80
Metropolitan ^{a,d}	0.21	0.25	0.21	0.21
Urban ^a	0.43	0.40	0.44	0.41
Maximum number of observations	9,812	2,605	1,314	531

Notes: The number of observations for each variable may differ because of missing values. In other words, this table has *not* been constructed on the basis of the minimum number of observations such that no single observation contains missing values on any of the explanatory variables that is shown in the table;

a denotes significant difference between "never considered" and "opportunity" at 1%;

b denotes significant difference between "never considered" and "necessity" at 1%;

c denotes significant difference between "never considered" and "mixed-motivated" at 1%;

d denotes significant difference between "opportunity" and "necessity" at 1%;

e denotes significant difference between "opportunity" and "mixed-motivated" at 1%;

f denotes significant difference between "necessity" and "mixed-motivated" at 1%.

5.2. Motivation and engagement

This section examines the range of impacts of each explanatory variable on the probability of belonging to the levels of entrepreneurial engagement. We determine whether these impacts depend on the start-up motivation of the individual. Our results will thus reveal at which stage of the entrepreneurial process and for which individuals a particular variable plays a role.

A multinomial logit model will be used which predicts the probability that an individual belongs to one of the engagement levels. Our multinomial logit model consists of 15 categories. That is, the engagement levels "never considered", "thinking", and "gave up" are included; they do not contain information about the motivation of an individual behind the start up decision. For convenience, the engagement levels "young business" and "established business" are taken together, which results in the merged category "having a business". For this engagement level, the motivational type is known, as well as for the engagement levels "taking steps", "failed" and "sell-off". For each of these four engagement levels, we divide the observations into three groups: an opportunity, a necessity and a mixed-motivated group of individuals. The resulting twelve categories are then included in the multinomial logit model, next to "never considered", "thinking", and "gave up". In first instance, the category "never considered" is taken as the base category. The coefficients in Table 4 describe the effect of a variable on the odds (ratio of two probabilities) of the engagement level in question relative to the base level. Given a coefficient above zero and holding all other variables equal, an increase in a variable raises the likelihood of belonging to the engagement level in question as compared to the base level "never considered". The reverse applies for a coefficient below zero. Note that we also include age squared in our regressions to allow for non-monotonic relationships.

Our methodological set-up is based on Grilo and Thurik (2008). These authors perform a similar exercise with engagement levels. They, however, do not distinguish between opportunity-driven, necessity-driven, and mixed-motivated entrepreneurs. Furthermore, the differentiation between both types of exit ("failure" and "sell-off") is not included in their analysis; also, we make use of a more recent dataset. In short, results from their analysis indicate that men have a higher probability than women to engage in entrepreneurial activities and that this difference is most prevalent in the more "active" engagement levels. Besides the fact that being risk tolerant increases the odds of all engagement levels relative to "never considered" (except for "taking steps"), it is also concluded that the perception of lack of financial support has no discriminative effect across the spectrum of levels of entrepreneurial engagement. The perception of administrative complexities only is important for high levels of engagement.

Table 4 presents the odds ratios that result from a multinomial logit regression including all 15 engagement levels, where "never considered" is taken as the base category. We will first focus on the odds of "taking steps" versus "never considered" and "having a business" versus "never considered" for the three motivational types. The results of "failed" and "sell-off" are not presented in Table 4, as we will contrast these engagement levels with "having a business" in a later stadium to acquire a better understanding of the "determinants of exit" for opportunity-driven, necessity-driven and mixed-motivated former entrepreneurs.

Glancing at Table 4 reveals that being a man increases the odds of "taking steps" and "having a business" (relative to "never considered"), both for opportunity and necessity entrepreneurs.¹¹

We find that, relative to "never considered", age has an inverted U-shape influence on the odds of "taking steps" and "having a business" for all types of entrepreneurs. The turning points at which the influence of age becomes negative is considerably higher for necessity entrepreneurs than for opportunity entrepreneurs (35 and 47 compared to 27 and 44 years for "taking steps" and "having a business" and for necessity and opportunity entrepreneurs, respectively).¹² These results indicate that the time span is longer in which situations can occur to push individuals into self-employment than in which individuals can voluntarily decide to engage in entrepreneurship. There thus appears to be a higher need for opportunity entrepreneurs to take the decision to engage in start-up activities.

Irrespective of the motivation, the odds of "taking steps" and "having a business", relative to "never considered", are positively influenced by the level of education (Grilo and Thurik, 2008). Additional Wald tests show that the coefficients do not significantly differ from each other in case of "taking steps", but that the impact of education on the odds of "having a business" versus "never considered" is considerably larger for mixed-motivated individuals than for the other two types. Furthermore, the promotion of entrepreneurial initiative positively influences these two odds for opportunity, but not for necessity entrepreneurs.

Having a family role model increases the odds of "taking steps" relative to "never considered" for opportunity and mixed-motivated entrepreneurs, but not for necessity nascent entrepreneurs (see Wagner, 2005). The act of taking steps is independent of such role models for those who decide to start a business out of necessity. The influence of this variable on the odds of "having a business" versus "never considered", however, is equal for all motivational types as additional

¹¹ It turns out that the "opportunity coefficient" and "necessity coefficient" do not significantly differ from each other (corresponding p-value is larger than 0.05), both for the odds of "taking steps" versus "never considered" and "having a business" versus "never considered".

¹² The turning points for mixed-motivated individuals amount to 32 and 46 years.

coefficient tests show. Thus, also in case of a necessity-based start-up, self-employed parents provide the necessary resources to their children to let them actually start up their business.

Note that Grilo and Thurik (2008) find for 2002 and 2003 data that risk tolerance increases the odds of belonging to any engagement level relative to never having considered entrepreneurial engagement, except for "taking steps". Wagner (2005) and Morales-Gualdrón and Roig (2005) find that risk aversion hinders nascent entrepreneurial activity for opportunity and necessity entrepreneurs. We extrapolate the findings of Grilo and Thurik (2008) by concluding that risk aversion is not a hindering factor for taking steps for all motivational types.

Interestingly, stigma of failure is significantly negatively related to the odds of "taking steps" and "having a business" (again relative to "never considered") for mixed-motivated entrepreneurs, but not for opportunity- and necessity-driven entrepreneurs.

Grilo and Thurik (2008) conclude that the odds of "more active entrepreneurial positions" are significantly negatively affected by the perception of administrative complexities. We see that this result holds for all motivational types. Hence, this perception does not even withhold "necessity individuals" to start-up their business. Note that the perception of insufficient info does not result in any significant outcomes. Concerning the perception of lack of financial support, Grilo and Thurik (2008) conclude that this perception does not seem to discourage an active involvement in entrepreneurial activity. Our analysis reveals that this perception discourages active involvement for opportunity entrepreneurs (given the significant negative odds of "having a business" versus "never considered"), but that it does not play a role for the other motivational types.

Concerning country differences, we note (Grilo and Thurik, 2008) that the odds of "taking steps" versus "never considered" of all European countries are in no instance higher than the odds of the Anglo-Saxon countries. A different picture emerges when homing in on the odds of "having a business" relative to "never considered". Southern European and post-communist countries increase these odds for necessity-driven and mixed-motivated individuals, while the odds of these two country categorizations are at par with Anglo-Saxon countries in case of opportunity entrepreneurship. All other nationalities across the three motivational types have no higher odds of "having a business" than Anglo-Saxon countries.

5.3. Motivation and performance

In the remainder of this section, we will focus on the determinants of failure and sell-off for each motivational type. To perform these analyses properly, we will use another base category: "having a business" instead of "never considered". More specifically, Table 5 displays the estimation results, where for example in the second and third column the base category consists of opportunity entrepreneurs that currently have a business.

The odds of "failure" versus "having a business" can provide us information about the influence of the explanatory variables on the survival chances of existing businesses. It appears that there exist some important differences between the three motivational types concerning their probability of failure and sell-off. Table 5 reveals that women have lower survival chances than men, but only for those who started their business out of necessity.

A priori, it could be expected that older people have acquired more human capital and are less likely to return to wage-employment making their probability of failure smaller than that of young people. We find, however, no age effect for "failure" versus "having a business", whereas a U-shaped relationship is found between age and the probability of sell-off (the turning points at

which the influence of age becomes positive are 26, 38 and 35 years for opportunity-driven, necessity-driven and mixed-motivated individuals, respectively).

It has earlier been shown that self-employed parents may be important for firm survival (Cooper, 1993; Burke et al., 2008). We shed more light on this relationship in that having self-employed parents reduces the probability of failure for opportunity entrepreneurs, but that it is of no help for their necessity and mixed-motivated counterparts.

More educated people face higher opportunity costs while at the same time they are also more likely to have acquired the necessary skills to successfully manage a business. From Table 5 it appears that education does not influence the odds of "failed" versus "having a business", but that it negatively influence the odds of "sell-off" versus "having a business" only for opportunity and mixed-motivated individuals.

We have seen in Table 4 that risk tolerant individuals are more likely to engage in entrepreneurial activity. It now turns out that being risk tolerant enhances survival chances for opportunity-driven and mixed-motivated entrepreneurs, while no structural relationship emerges between necessity entrepreneurship and risk attitude.

Perceptions of environmental constraints can be inspired by the lack of resources in an environment or the lack of access to resources in an environment. The perception of lack of financial support increases the probability of failure for opportunity entrepreneurs (relative to "having a business" for this group), but it has no effect on this probability for necessity entrepreneurs. Furthermore, metropolitan or urban areas increase the probability of failure for opportunity-driven and mixed-motivated entrepreneurs, but not for necessity-driven entrepreneurs.

In conclusion, the probability of failure for necessity entrepreneurs and mixed motivated entrepreneurs is harder to predict than for opportunity entrepreneurs. The differences in the significances of the determining factors of the odds of "failed" and "sell-off" versus "having a business" stresses the importance of taking into account start-up motivations in entrepreneurship research.

6. Conclusion

Using survey data for 27 European countries and the US we investigate the impact of individual and regional factors on different levels of entrepreneurial engagement for opportunity-driven, necessity-driven and mixed-motivated individuals. Respondents indicated themselves whether they started a business because they saw an opportunity, because out of necessity, or because of both motivations. Starting from the observation that opportunity- and necessity-driven individuals as well as those who have both opportunity- and necessity-driven motivations typically have a different profile, we conclude that these types of entrepreneurs differ concerning the factors that inspire or hinder them to 'climb the entrepreneurial ladder' (Van der Zwan *et al.*, 2010). In this concluding section we highlight a number of our findings that are of particular interest for research and policy.

While several studies have explored the role of education in general in relation to entrepreneurship, our results provide insight into how entrepreneurship-specific education may affect an individual's engagement in entrepreneurship. In particular, our findings indicate that entrepreneurship education positively relates to engagement in opportunity-driven entrepreneurial

activities, which suggests that entrepreneurship education can be an important instrument for fostering opportunity-based entrepreneurship. In addition, entrepreneurship education is also found to reduce the odds of failure for opportunity motivated entrepreneurs.

Numerous studies have highlighted that individuals whose parents are self-employed are more likely than others to set-up their own businesses, for example because they are more inclined to view the creation of a new enterprise as a viable career option (Shapero and Sokol, 1982). The findings of this paper provide a more detailed picture of how having self-employed parents may impact entrepreneurial involvement. Focusing on present entrepreneurial activity in general (those taking steps and having a business), we conclude that having at least one self-employed parent increases the odds of being engaged in nascent entrepreneurial activity out of opportunity, but not out of necessity. Having self-employed parents also reduces the odds of failure for opportunity motivated entrepreneurs, but not for their necessity counterparts. In addition, we find that individuals with self-employed parents are more likely to be involved in necessity-based and mixed-motivated entrepreneurship than in opportunity-driven entrepreneurship, which contradicts earlier findings (Amit and Muller, 1995; Wagner, 2005).

Furthermore, we find indications that risk tolerance reduces the likelihood of failure for those who started their business out of opportunity and mixed motivations, but not for those who started out of necessity motivations.

In our study, we not only consider how individual-specific characteristics may affect entrepreneurial motivation and engagement, but we also investigate the role of an individual's perception regarding institutional arrangements for start-up activity. An interesting finding in this respect is that individuals who share the opinion that it is difficult to start one's own business due to a lack of available financial support are more likely to have necessity or mixed start-up motivations than to be opportunity-motivated. Multivariate analyses show that this perception does not seem to discourage an active involvement in entrepreneurial activity for necessity entrepreneurs, but that it does for opportunity-motivated entrepreneurs. We find that an individual's perception of whether or not it is difficult to obtain sufficient information on how to start a business does not impact whether the individual is entrepreneurially engaged or not (Grilo and Thurik, 2008).

We also consider potential region-specific influences on start-up motivations and entrepreneurial engagement. We find no indications that being located in a metropolitan, urban or rural area is related to an individual's start-up motivation. However, we do find indications that such regional aspects affect entrepreneurial engagement levels. Both new start-up initiatives and failed initiatives (only out of opportunity and not out of necessity) are more prevalent in metropolitan areas than in rural areas, indicating that metropolitan areas typically have higher levels of opportunity-based entrepreneurial dynamics.

A final aspect that we take into account in our study is how regional institutional environments in Europe may affect entrepreneurial motivation and entrepreneurial engagement. In this respect we distinguish between Scandinavian, Corporatist, Anglo-Saxon, Southern-European and post-communist countries (Stam *et al.*, 2010). Several interesting findings emerge from our analysis. For example, we find that Scandinavians are more likely than Anglo-Saxons to be involved in opportunity-motivated and mixed-motivated entrepreneurship than in necessity-based entrepreneurial activity. However, individuals living in post-communist European countries are more likely than Anglo-Saxons to be entrepreneurially engaged out of necessity and mixed motivations than out of opportunity motivation. Individuals living in Southern European and

post-communist countries (relative to Anglo-Saxons) are more likely to have a business out of necessity than to be entrepreneurially engaged out of opportunity-based motives or to be not entrepreneurially active at all.

Our study has a number of limitations. For example, our findings may be subject to self-reporting biases. Individuals may not recognize their true characteristics and motivations (Amit and Muller, 1995) or they may rely on the subjective interpretation of the present situation to assess their motivation at the time of start-up. Motivations may in fact change over time (Bird, 1993; Cassar, 2007) or a necessity-based (opportunity-based) start-up may evolve into an attractive (unattractive) alternative over time. We do not take into account such dynamic aspects. They may also report goals that are socially desirable, in the sense that people may prefer to say that they started a business because they want to exploit a profit opportunity than to admit that they had no other option. Also, one could argue that the distinction between push-pull factors (or between necessity and opportunity entrepreneurship) is relatively crude. Giacomini *et al.* (2007) find that some individuals are neither driven by pull nor by push motivations. Therefore, there may be a third type of entrepreneurship: entrepreneurship as a hobby.

From a policy perspective, given the observations that push- and pull-motivated entrepreneurs are different in terms of their profile, it can be argued that policies aimed at stimulating push-type entrepreneurs should not be similar to those stimulating pull-type entrepreneurs (Giacomini *et al.*, 2007).

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Table 4. Estimation results multinomial logit model; base category: "never considered starting a business"; results of engagement levels "failed" and "sell-off" are not presented

	Thinking	Gave up	Taking steps	Having a business	Taking steps	Having a business	Taking steps	Having a business
			Opp.	Opp.	Nec.	Nec.	Mixed	Mixed
Gender	0.321***	0.431***	1.115***	1.177***	0.862***	1.165***	0.149	1.014***
Age	-0.010	0.094***	0.089***	0.214***	0.207***	0.272***	0.221***	0.301***
(Age/100) squared	-4.802***	-10.828***	-16.552***	-24.453***	-29.453***	-28.687***	-34.345***	-32.534***
Education level	0.042***	0.015***	0.044***	0.026***	0.030	0.022***	0.064***	0.051***
Entrepr. education	0.274***	0.261***	0.330***	0.404***	0.346	0.155	-0.144	0.338**
Self-empl. parents	0.227***	-0.067	0.422***	0.525***	0.271	0.650***	0.524**	0.682***
Risk tolerance	0.386***	0.159***	0.197	0.503***	-0.003	0.284***	0.026	0.560***
Stigma failure	-0.212**	0.003	-0.288	-0.203	-0.200	-0.048	-1.111**	-0.829***
Perception of admin. complex.	-0.051	-0.042	-0.219	-0.357***	-0.072	-0.408***	-0.409	-0.524***
Perception of insufficient info	-0.072	-0.033	-0.021	-0.005	0.236	0.102	0.041	-0.054
Perception lack of financial support	0.193**	0.196***	-0.014	-0.264***	0.438	0.125	0.459	0.099
Metropolitan	-0.053	-0.143	0.300**	-0.085	0.181	-0.071	-0.643	-0.276
Urban	-0.026	-0.088	0.195	-0.145	0.193	-0.102	-0.377	-0.498***
Scandinavian	-0.286**	-0.358***	-0.813***	0.016	-1.009**	-0.180	0.041	0.490
Corporatist	-0.742***	-0.011	-0.986***	-0.274**	-0.583**	-0.525***	-0.023	0.007
Southern Europe	-0.554***	-0.028	-1.370***	-0.106	-1.190***	0.438***	-0.152	0.979***
Post-communist	0.193**	-0.182	-0.275	0.178	0.247	0.458***	0.786	0.843***
Intercept	-1.011***	-3.475***	-4.203***	-7.210***	-8.080***	-9.601***	-8.376***	-11.871***
Observations	13,340							
Log likelihood	-22,389.56							
McFadden R^2 (adjusted)	0.09 (0.07)							
Nagelkerke R^2	0.27							
LR χ^2	4,136.49							

Note: ** denotes significantly different from zero at 5%; *** at 1%.

Table 5. Estimation results multinomial logit model; base category: "having a business"; results of other engagement levels are not presented

	Failed	Sell-off	Failed	Sell-off	Failed	Sell-off
	Opp.	Opp.	Nec.	Nec.	Mixed	Mixed
Gender	-0.103	-0.303***	-0.651***	-0.487***	-0.652	-0.224
Age	0.000	-0.064***	-0.056	-0.144***	-0.083	-0.119
(Age/100) squared	1.949	12.142***	7.324	18.844***	8.819	17.194***
Education level	-0.019	-0.015**	0.004	-0.017	0.001	-0.025
Entrepr. education	-0.439***	0.032	0.265	-0.073	-0.245	-0.032
Self-empl. parents	-0.815***	-0.163	-0.164	-0.238	-0.072	0.302
Risk tolerance	-0.379**	-0.099	-0.175	-0.173	-1.359***	-0.256
Stigma failure	-0.009	0.145	-0.545	-0.065	-0.828	0.752
Perception of admin. complex.	-0.132	0.270**	0.348	0.152	0.581	0.067
Perception of insufficient info	0.076	-0.127	-0.077	0.100	0.328	0.284
Perception lack of financial support	0.565***	0.218	0.266	0.147	0.210	0.221
Metropolitan	0.516**	0.142	0.535	-0.146	0.902	0.398
Urban	0.257	0.021	0.140	-0.152	1.454***	0.418
Scandinavian	-0.029	-0.031	-0.925	0.001	-1.584	-0.493
Corporatist	-0.337	-0.341**	-0.342	-0.016	-1.803**	-0.117
Southern Europe	-0.205	-0.625***	0.238	-0.355	-1.265**	-0.741
Post-communist	0.033	-1.141***	0.020	-0.475	-1.348**	-0.618
Intercept	-1.161	0.325	-0.867	2.469***	0.649	-0.224
Observations	13,340					
Log likelihood	-22,389.56					
McFadden R^2 (adjusted)	0.09 (0.07)					
Nagelkerke R^2	0.27					
LR χ^2	4,136.49					

Note: ** denotes significantly different from zero at 5%; *** at 1%.

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