Schutjens, Veronique; Bosma, Niels; Hessels, Jolanda; Praag, Mirjam Van; Verheul, Ingrid

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The strength of a good example: How important are role models for early-stage entrepreneurs?

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ENTREPRENEURSHIP AND ROLE MODELS

Niels Bosma, Utrecht University

Jolanda Hessels, EIM and Erasmus School of Economics

Veronique Schutjens, Utrecht University

Mirjam van Praag, University of Amsterdam

Ingrid Verheul, Rotterdam School of Management

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ABSTRACT

In the media, role models are increasingly acknowledged as important influential factors for occupational choice and career outcomes. Apart from conceptual studies establishing a link between role models and entrepreneurial intentions, empirical research on the importance of role models for (nascent) entrepreneurs has been scarce and there is still little knowledge of what determines the use of specific entrepreneurial role models, as well as the precise function of such role models. Our explorative empirical study based on extensive face-to-face interviews with a representative sample of about 300 entrepreneurs who have recently started up a company in the Netherlands is a first step to fill this gap. We provide initial indications of the size and significance of the effect of role models on occupational choice, the function of role models and the relationship and similarity of characteristics between the (nascent) entrepreneur and the role model.

KEYWORDS: role models, (nascent) entrepreneurs, human capital, occupational choice, start-up phase

JEL-CODES: L26, M13, J24

1. INTRODUCTION

Individual decisions to engage in a certain behavior are often influenced by the behavior and opinions of, or examples set by, others (Ajzen, 1991). This also holds for the occupational choice of individuals (Krumboltz et al., 1976) and, more specifically, the decision to engage in entrepreneurship. Many entrepreneurs claim that their business start-ups and business activities have been influenced by other people. These 'other people' are often entrepreneurs, for example famous ones such as Steve Jobs or family members. They serve as role models. A role model is a common reference to individuals who set examples for others to be emulated, and who may stimulate or inspire others to make (career) decisions and achieve certain goals (Shapiro et al., 1978; Basow and Howe, 1980; Wright et al., 1997). The relevance of role models becomes evident in the popular business press that is littered with references to the alleged influence, names (elicited by numerous polls) and speeches of entrepreneurial role models.

Although entrepreneurial role models have become an important phenomenon in practice, as yet, their occurrence, function and characteristics have been studied to a limited extent by academics. In this paper we attempt to fill this gap by discussing the results from an empirical study that is explorative in nature and addresses the use of specific role models by entrepreneurs, both in the pre-and post-start-up phase of their company. For this purpose we collected data by means of in-depth face-to-face interviews with a representative sample of about 300 entrepreneurs who recently started a business in the Netherlands.

Our study is inspired by the scarce and scattered literature on role models in entrepreneurship.[1]Besides studies that establish role model effects on entrepreneurial intentions of students (Krueger et al., 2000; Scherer et al., 1989; Van Auken et al., 2006a & 2006b), three strands of literature may provide indications that role models matter for the decision to become an entrepreneur.

First, the stylized fact that the decision to become an entrepreneur, i.e., to start up a business, is correlated positively with having parents who have entrepreneurial positions, is often interpreted as the effect of parental role models (Parker, 2009, p. 134-138, Dunn and Holtz-Eakin, 2000; Fairlie and Robb, 2007; Hout and Rosen, 2000). However, it is acknowledged that genetic heritage (e.g., Nicolaou et al., 2008), the opportunity for learning on the job provided by a family business (e.g., Fairlie and Robb, 2007) or financial support

[1] More in general, it has been acknowledged that there have been few empirical studies investigating the characteristics and functions of role models within the context of individual careers (Gibson, 2004, p.135).

(e.g., Georgellis et al. 2005) may also underlie the observed association between the choice for entrepreneurship of parents and their children.

Second, it has been established that networks (e.g., Klyver et al., 2007) and peer groups (Djankov et al., 2006; Gianetti and Simonov, 2009; Koellinger et al., 2007; Nanda and Sorensen, 2009; Stuart and Ding, 2006) influence the decision to become an entrepreneur and it is assumed that networks and peer groups may provide role models. For instance, Koellinger et al. (2007, p.512) establish that: "Knowing other entrepreneurs is positively associated with start-up propensity".

The third strand of literature indicating that role models affect the decision to become an entrepreneur is obtained from a more aggregate perspective than the individual level. Research at the regional level hasshown that entrepreneurship is spread unevenly and that this regional variance in entrepreneurship is often persistent (Reynolds et al., 1994). Several studies have attributed these differences between clusters, regions and nations to the existence and availability of role models (Fornahl, 2003; Lafuente et al., 2007; Sternberg, 2009). Entrepreneurship can be seen as self-reinforcing (Minniti, 2005). That is, a region with high levels of entrepreneurship may further encourage new entrepreneurial initiatives because it is easier to find an appropriate example, draw information or resources from them, and legitimize the entrepreneurial aspirations and actions (Davidsson and Wiklund, 1997; Mueller, 2006).

These strands of empirical studies suggest an influence of role models on the decision to become an entrepreneur. However, they do not directly establish the effect of role model on entrepreneurship outcomes. Furthermore, empirical studies have not yet tested theoretical insights about factors that determine *who* has (or is) a role model or *how* role models actually contribute to new venture creation and development. Moreover, the source and proximity of the *relationship* between the entrepreneur and his/her role model are largely unknown. For example, role models can originate from the entrepreneur's direct environment, such as family or friends (i.e., strong ties), or can be less closely related to the entrepreneur, such as former employers or colleagues (i.e., weak ties). Alternatively, role models can be icons whom the entrepreneur doesn't know on a personal basis, such as Richard Branson or Bill Gates. If the entrepreneur knows the role model personally, there may be frequent contact such that the possibility of hands-on support arises. Finally, the match between entrepreneurs and their role models has not yet been studied. Do entrepreneurs use role models who are similar to themselves in terms of nationality, ethnicity, gender, age and education, or do they

select role models that are different and/or enterprising at a more ambitious scope and level? We explore these issues further in this paper.

Analyzing the factors that may drive individuals' decisions to become entrepreneurs is highly relevant given that new ventures contribute to economic growth and innovation (Parker, 2009; Van Praag and Versloot, 2007).Thus, the question 'what makes an entrepreneur', as Blanchflower and Oswald (1998) put it, has been studied extensively and in many different theoretical settings. Individual determinants of entrepreneurship that have been widely studied include, among others, personality factors like risk attitude (e.g., Caliendo et al., 2009) and the aforementioned family background. Recent empirical studies tend to build on the Penrosian resource based view, establishing the important link between human, financial and social capital, and entrepreneurship (e.g., Davidsson and Honig, 2003; Dunn and Holtz-Eakin, 2000, Parker and Van Praag, 2006; Van Praag et al., 2009). Of these factors, human capital plays a particularly important role in explaining (successful) entrepreneurial activity. In fact, the literature suggests that human capital is the major determinant of entrepreneurs' earnings. According to Parker (2009, p.582) few other explanatory variables, including ethnicity, family background, social capital, business strategy, or organisational structure, possess as much explanatory power. Entrepreneurial role models can be seen as a source of relevant human capital for aspiring and established entrepreneurs.

Within academia entrepreneurial role models have been largely neglected, whereas a better understanding of this potential driver of entrepreneurship may lead to the development and use of additional (policy) instruments to enhance entrepreneurial activity and outcomes. In fact, each year educational institutions and the media employ scarce resources to provide students and the audience at large with entrepreneurial role models in the classroom, on television, and in the press. Insight in the relationship between entrepreneurship and role models is important to find out whether resources put into these programs are spent wisely or could be used more effectively.

The remainder of the paper is structured conventionally. In Section 2 we discuss the conceptual (and partly empirical) literature on role models as much as possible applied to entrepreneurship leading to hypotheses. In Section 3 we discuss the data collection. Section 4 provides the results of testing the hypotheses. Section 5 concludes.

2. ENTREPRENEURIAL ROLE MODELS: THEORY AND HYPOTHESES

In what follows we first define role models and their various functions derived from role identification theory and social learning theory. Taking it from there, the second part of the section is devoted to the formulation of hypotheses about (A) human capital characteristics of entrepreneurs that lead to the selection of role models (in any of their particular functions); (B) The resemblance of the entrepreneur and the role model in terms of human capital characteristics, demographics, sector and location; and(C) The relationship, proximity and contacts between the entrepreneur and the role model.

2.1 Definition and functions of role models

It has long been acknowledged that role models may have a profound influence on career decisions (e.g. Krumboltz et al., 1976). Therefore, role models may also enhance the desire to become an entrepreneur and the entrepreneurial self-efficacy of individuals (Van Auken et al., 2006a; 2006b), which may, in turn, positively influence entrepreneurial intentions and, ultimately, entrepreneurial activity (Krueger et al., 2000).[2] Furthermore, once individuals are entrepreneurs, role models may contribute to the development of their firm.

As put forth by Gibson (2004, p.136): "The term 'role model' draws on two prominent theoretical constructs: the concept of role and the tendency of individuals to identify with other people … and the concept of modeling, the psychological matching of cognitive skills and patterns of behavior between a person and an observing individual". This implies that individuals are attracted to other individuals who are perceived to be similar in terms of behavior and/or goals (the role aspect), and that they learn certain abilities or skills from these role models (the model aspect).

Consistent with these role and model aspects, the phenomenon of role models is explained by theories of (role) identification and social learning (Gibson, 2003; 2004). Role identification can be seen as a cognitive response to an individual's belief that the characteristics of another person (the model) are close to his/her own motives and character (Kagan, 1958) and that this other person plays a desirable -often central - social role or occupies an attractive position (Bell, 1970). Identification may result in the formation or adaptation of an individual's preferences (Witt, 1991) or in imitative behavior if this is

[2] Role models may not only *promote* or influence people to select a similar career ("positive" role model). They may also *prevent* people from choosing a similar career ("negative" role model) (Gibson, 2004). We focus on positive role models.

expected to be rewarding (Kagan, 1958). It may provide someone with the motivation and inspiration to choose a particular direction, activity or career path (Krumboltz et al., 1976). In addition, role models provide living evidence that certain goals are achievable. The identification and comparison with role models may help individuals *define their self-concept* and enhance their self-efficacy (De Clerq and Arenius, 2006; Gibson, 2004; Lockwood and Kunda, 1997).[3] Thus, role models may enhance the desire to become an entrepreneur by providing legitimization and encouragement to turn entrepreneurial ambitions into reality (Arenius and De Clercq, 2005; Koellinger et al., 2007; Mueller, 2006), possibly mediated by their entrepreneurial self-efficacy (Van Auken et al., 2006a; 2006b).

Social learning theory or social cognitive theory (Bandura, 1977; 1986) argues that individuals are attracted to role models who can help them further develop themselves by learning new tasks and skills (Gibson, 2004). People are assumed to learn in a social context through the observation of otherswhom they can identify with and who perform well in an area where they themselves would like to be involved and/or excel in, i.e., *learning by example*(or modeling). The role of positive entrepreneurial examples is important for enhancing entrepreneurial activity (Fornahl, 2003, p. 50).

In addition, role models may provide entrepreneurs with actual practical support and advice as a mentor to a mentee, i.e., *learning by support* (Nauta and Kokaly, 2001).In fact, many entrepreneurs find information on markets, industries, administrative regulations, and potential pitfalls in their social network (Ozgen and Baron, 2007; Schutjens and Stam 2003).

Gibson (2004, p.149) summarizes the various functions that role models may fulfill and argues that the importance of role models lies in three interrelated functions: “to provide learning, to provide motivation and inspiration, and to help individuals define their self-concept”. Assessing role model influences on students’ academic and vocational decisions, Nauta and Kokaly (2001) add a support component to the function of role models, arguing that role models not only provide individuals with inspiration and modeling but also with support and guidance.

Building on the theories of role identification and social learning as well as the proposed role model functions by Gibson (2004, p.149) and Nauta and Kokaly (2001, p. 95), we argue that entrepreneurial role models may perform four interrelated functions: (i), inspiration and motivation (i.e., role model creates awareness and motivates people to get started), (ii) increasing self-efficacy (i.e., role model makes people confident that they too can

[3] Self-efficacy is considered an important driver of a person’s motivation and ability to engage in a certain behavior (Ajzen, 1991), including entrepreneurship activities (Shane, 2003).

reach a certain goal), (iii) learning by example (i.e., role model provides guidelines for action) and (iv) learning by support (i.e., role model provides hands-on support or advice). The first two functions result (indirectly) from role identification theory whereas the third and fourth are implied by social learning theory. These four possible functions of role models are distinguished in our empirical analysis to test the hypotheses formulated below.

2.2 Entrepreneurs and their role models

(A) Human capital characteristics of entrepreneur and role model (functions)

An entrepreneur's human capital, i.e., an individual's knowledge and competencies obtained by education and (work and life) experience, can serve as a substitute for the use of a role model. Individuals with higher levels of *human capital*(whether general or specific) may be less likely to use entrepreneurial role models as a source of inspiration, learning and self-efficacy, because they (believe they) have the ability to start their own business and make it successful. Indeed, human capital tends to improve the ability to solve problems during the start-up process; help individuals become aware of lucrative business opportunities; and increase their self-confidence (Davidsson and Honig, 2003), functions that can also be fulfilled by role models. After start-up, human capital is also found to be of crucial importance for venture performance, with higher educated and more experienced entrepreneurs performing better than others (e.g., Gimeno et al., 1997; Hamilton, 2000; Hartog et al., 2010; Parker and Van Praag, 2006; Stuart and Abetti, 1990; Van Praag et al., 2009). We formulate and test the following hypotheses:

H1a: Higher levels of *general* human capital (acquired through education or experience) will decrease the likelihood of having an entrepreneurial role model.

H1b: (Higher levels of) *Entrepreneurship-specific* human capital (acquired through previous entrepreneurial experience) will decrease the likelihood of having an entrepreneurial role model.

Thus, higher levels of human capital, both general and specific, are likely to decrease the need for role models in any of their functions. In addition, entrepreneurship specific human capital is likely to further decrease the demand for role models as a source of inspiration/motivation and increased entrepreneurial self-efficacy. Entrepreneurs with *entrepreneurship-specific*

human capital will be less likely to have a role model for inspiration and motivation purposes because they had already decided to pursue an entrepreneurial career earlier on. In addition, experienced entrepreneurs are expected to have a lower need of a role model to increase their entrepreneurial self-efficacy, given that they have decided to become an entrepreneur again, because the previous entrepreneurial experience is likely to have boosted the extent to which they believe they have what it takes to be(come) a successful entrepreneur.

H1c: *Entrepreneurship-specific* capital will decrease the likelihood of using a role model for inspiration/motivation or to enhance the entrepreneur's self-efficacy, relative to using a role model for learning by example or support.

Role models may have different functions in different stages of an individual's career. Gibson (2003) found that the tendency to observe role models does not change over an individual's career span, but the purpose of using role models does change. According to Gibson (2004, p. 601) in the early career stage individuals are focused on *acquiring* as much information as possible and look for a role model that helps them to develop a 'viable self-concept' and 'professional identity'. In the middle- and late career stages the emphasis is more on learning lessons and developing specific skills. Furthermore, it can be expected that the role model function of inspiration and motivation (i.e., creating awareness and motivating people to become involved in entrepreneurship) is more important in the decision than in the action stages of entrepreneurship, whereas actual learning (through example or support)will be more prominent in the action (i.e., post-start-up) phase, when the business is up and running. We formulate the following hypothesis on the effect of the firm stage on role model functions.

H1d: In the pre-start-up phase of the entrepreneur's venture, the entrepreneur is more likely to use a role model for inspiration/motivation or to enhance the entrepreneur's self-efficacy, whereas learning by example and support are role model functions that are used more in the post-start-up phase.

(B) Resemblances; similar versus dissimilar role models

Based on role identification theory and the role model function of increasing self-efficacy, some degree of similarity between the individual and the role model (at least in the perception of the role model user) is to be expected, even if the role model occupies a (more) desirable position. Otherwise, it is difficult for the role model user to perceive the behavior of the role

model as compatible with one's own behavioral opportunities, i.e., 'I can do what (s)he can'.[4] According to Slack (2005), role models may inspire potential entrepreneurs, especially when they resemble each other. Indeed, there is some empirical evidence suggesting that demographic similarity in terms of, for example, gender and race, is important for the matching between individuals and their role models (Hernandez, 1995; Maccoby and Jacklin, 1974).

Based on the social learning theory, there should be opportunities to learn from a role model (by example or support) and this is more likely when the role model is dissimilar and higher qualified than the role model user: i.e., there is potential learning in dissimilarity. A role model has often a higher hierarchical position than the role model user (e.g., Kram and Isabella, 1985; Shapiro et al., 1978). Also, Bandura and Walters (1963) argue that, to be imitated, a role model needs to behave socially effectively (successfully).

The conclusion from role identification theory is that entrepreneurs will use role models they can identify with because they resemble the entrepreneur with respect to relevant domain and some personal characteristics but who have reached a desirable position. Social learning theory proposes that role models have positions, skills and experiences the role model user can use (learning) and implies that the role model occupies not only a desirable position, but has also better qualifications, for instance, in terms of human capital. Thus, in terms of such characteristics as gender, sector and nationality (where differences do not imply any hierarchy, ranking or achievement) we expect entrepreneurs and role models to be similar, whereas in terms of human capital characteristics and firm performance we expect role models to be 'ranked higher' than their users and lead firms operating at a more ambitious and larger scale. Furthermore, similarity will be more important for role models with functions explained by role identification theory, i.e. to inspire and improve self-efficacy, whereas higher levels of skills (in relevant domains) are more likely for role models who serve as an example or a mentor (providing support), i.e., the functions derived from social learning theory. Hypotheses 2a and 2b combine the implications from role identification and social learning theory.

H2a: Entrepreneurs use role models that operate in the same sector, have the same gender and nationality (similarity and relevant domain), especially when the

[4] Superstars provoke self-enhancement and inspiration when their success and excellence in a relevant domain seems attainable but self-deflation when it seems unattainable (Lockwood and Kunda, 1997).

role model's primary function is inspiration/motivation and/or increasing self-efficacy.

H2b: Entrepreneurs use role models with higher (human capital) qualifications than they have themselves and whose businesses operate more successfully and at a more ambitious scale. These dissimilarities between the entrepreneur and her role model are of particular relevance for role models whose primary function is learning (by example or support).

Based on hypothesis 1d, i.e., that inspiration/motivation and increasing entrepreneurial self-efficacy are more important in the pre-start-up phase, whereas learning may be more important in the post-start-up phase, we expect the extent of similarity to depend upon the stage in the entrepreneurial process. In the pre-start-up phase, role models tend to resemble their users more, while the extent of similarity may be of less importance in the post-start-up phase where the presumed higher status of the role model is more important for imitation or learning:

H2c: Role model resemblance is more likely in the pre-start-up phase than in the post-start-up phase.

(C) The relationship and contacts between entrepreneur and role model

Role models may come from the group of the so-called 'strong ties', i.e., friends or family members (including parents whose alleged role was discussed in the introduction) or the group of so-called 'weak ties'. Weak ties are, for example, acquaintances, distant relatives or (former) colleagues and superiors. Weak ties networks bridge the close network to new information and knowledge, which may help entrepreneurs to explore new horizons and eventually expand the business.

Hite & Hesterly (2001) propose that the personal network of the entrepreneur evolves from a network where strong ties play the most prominent role (an 'identity-based network') to a network rich on weak ties (an 'intentionally managed network'). Similarly, Davidsson and Honig (2003) find that weak ties (bridging social capital) become more important relative to strong ties (bonding social capital) in later phases of the business. Therefore, we hypothesize

H3a: When people have role models in the pre-start-up phase, they are more likely to source from the network of strong ties, while role models in the post-start-up phases are more likely to come from the network of weak ties.

A role model can be considered 'close' when there is opportunity for frequent interaction. This provides a direct link between the closeness of the role model and the function assumed. A close role model can fulfill a mentoring function, which assumes an active relationship between the role model and his/her protégé (Higgins and Kram, 2001). A role model is 'distant' when there is infrequent contact or only one-sided communication, e.g. through intervening media such as television (Gibson, 2003; 2004). Distant role models can take the form of acquaintances or famous people who are unaware that others perceive them as role models (Singh et al., 2006). Distant role models tend to influence large groups of people and their actual contribution to the development of entrepreneurial competencies is often lower than for close role models (Gibson, 2004). Indeed, it has been argued that the transfer of tacit knowledge is only possible when individuals interact with their role models (Filstad, 2004).

The use of a close or distant role model is likely to depend on the career stage the role model user is in (Gibson, 2003). In early career stages, individuals tend to prefer role models close to them, whereas individuals in later career stages often prefer more distant role models (Gibson, 2003). We hypothesize that this also applies to entrepreneurial role models:

H3b: Entrepreneurs who have an entrepreneurial role model in the pre-start-up phase are more likely to have personal contact and/or frequent interaction as compared to those who have an entrepreneurial role model in the post start-up phase.

H3c: Entrepreneurial role models who assume a mentoring function will have more personal and frequent contact with the entrepreneur for whom they are role models than role models with another role.

3. DATA

In this section we first discuss the data collection and then describe the statistics of the resulting sample of entrepreneurs, their firms and the functions of their role models. Other

relevant descriptive statistics are discussed in Section 4 because these are relevant for testing the hypotheses.

3.1 Data Collection

Our empirical analyses are based on a sample consisting of 298 Dutch young business owners. The sample has been randomly drawn from a population of owner-managers of young firms (start-up year 2006-2008) in the cities of Amsterdam, Rotterdam and Utrecht (Netherlands) and in the sectors retail, hotels and restaurants, business services and other services. These four particular industries counted for most start-ups between 2006 and 2008.[5] The Dutch Chambers of Commerce provided us with contact details from the firm register database based on the abovementioned parameters. In Spring 2009 we have sent a letter to all selected firms to inform them of the possibility that they would soon be approached by telephone and invited to participate in a research project on the start-ups and development of recent start-ups in the region and the possible influence of other entrepreneurs.[6] We involved students participating in the entrepreneurship courses that we were teaching (at the universities in Amsterdam, Rotterdam and Utrecht) in the spring semester of the academic year 2008-2009 in our research. As part of their curriculum they were required to make interview appointments by telephone with three out of fifteen firms in a specific city and sector we had listed for each individual student, i.e., a subset from the lists we had obtained ourselves. Subsequently they were expected to interview these entrepreneurs at the location of the entrepreneur's preference. The face-to-face interviews lasted approximately 40 minutes.[7] Interviews were completed with 298 entrepreneurs.

[5] The distribution of firms over the selected cities and sectors is not necessarily representative due to a stratified sample selection approach.

[6] In order to avoid a prescribed (and possibly too narrow) definition of the phrase 'role model' to entrepreneurs in our sample, we introduced the research theme as follows to the respondents: "Entrepreneurs have intense experiences in the phases after and just before the start-up of their firm. It is a busy and thrilling period of time, in which entrepreneurs have to think of and be active in various domains. The start-up of a firm can be seen as a milestone already, but also searching and binding clients, (further) developing a network or setting strategic business targets in terms of prices, turnover, profit and so on are important for the performance of start-ups. Policy makers and academics have developed lately a genuine interest in the exemplary function that other entrepreneurs fulfil in the start-up stage and beyond. The Amsterdam Center for Entrepreneurship of the University of Amsterdam, Utrecht University and the Rotterdam School of Management have joined forces, together with the Chamber of Commerce to analyze the start and development of firms that have been started up recently in this region. We kindly request your participation in this research project".

[7] As part of the course the students also interviewed the entrepreneurs about a self-selected topic after completing the interview for our purposes.

Based on the literature we designed a semi-structured questionnaire. It included an extensive set of questions on the role models of the entrepreneur that were used before and during the start-up of the company (pre-start) and afterwards, i.e., in years 1-3 of the firm's life cycle (post-start). The basic structure of the interview was for the entrepreneurs to first state whether 'one or more other (ex-)entrepreneurs (or alternatively firms) influenced their decision to start up a business themselves', i.e., before the start-up of their firm. For those who answered affirmatively, several characteristics of these other entrepreneurs and/or firms were collected along with information on the role model's (perceived) function. The exact same procedure was followed for possible role models in the post-start-up phase of the firm, i.e., the influence of other entrepreneurs on 'the further development of their firm'. In addition, the questionnaire contained a section with questions about the entrepreneur and the characteristics and performance of her firm.

3.2 Descriptive Statistics

Entrepreneur characteristics

The procedure described resulted in a sample apt for analysis of 292 usable observations of which 159 (54%) have a role model in either the pre- or post-start-up phase. Table 1 shows the key descriptive statistics.

<<Insert Table 1 here>>

The upper half of Table 1 shows demographic and human capital characteristics of the entrepreneurs in our sample. The gender, age and education distributions in our sample are representative for the population of starting business owners in the Netherlands in this time period, based on comparisons with a Dutch start-up panel (1998-2008) and GEM data (2002-2008): almost forty percent of the sample is female, the average entrepreneur who recently started a firm is 38 years old and 54% has a college or university degree. Moreover, 81% is born in the Netherlands, whereas almost two third of the sample has a parent who is or was a business owner. A quarter of our sample has previously obtained entrepreneurship experience, whereas this experience has been obtained for over five years by fifteen percent of the sample.

The lower half of Table 1 describes the firm characteristics. A quarter of the interviewed firms are located in Amsterdam whereas the rest is equally distributed over the cities Rotterdam and Utrecht. This distribution is not representative, as we announced already

and due to stratification. The same is true for the distribution of sampled firms over sectors. One third of the firms are active in the business services sector, 15 percent in the hotels/restaurants sector and the remaining half is distributed equally across the retail and 'other services' sectors. Table 1 also shows that half of these recent start-ups are run from home and that over a third of the sample co-owns a firm together with one or more partners.

The sample size in the bottom row of the various columns, finally, shows that 54% percent of the sample has indicated to have 'used' a role model at any stage of the life cycle of their business, so within the maximum 3 years of business existence.

A comparison of columns II (the group of entrepreneurs with role models) and III (entrepreneurs without role models) based on the t-test statistic indicates the following differences. Entrepreneurs with role models are significantly younger than entrepreneurs without. Moreover, entrepreneurs with role models have significantly higher levels of education and they have less experience in entrepreneurship than the ones without role models. Moreover, entrepreneurs with role models are less likely to be active in the retail sector and more likely to be active in the business services sector.

Columns IV to VI show the distributions of the key entrepreneur statistics for the subgroups with role models in the start-up phase, after the start-up phase and with role models in both phases. The last row of the table indicates that 59 entrepreneurs (37% of the role model users) had a role model at start-up but not afterwards, for 30 (19%) entrepreneurs this is the other way around, while it is most common among role model users to use them both pre- and post-start-up, i.e., 70 entrepreneurs (44%). Sixty percent of the latter group uses the same role model in both phases (not tabulated here). There are only a few differences between the average values in columns VI to IV. Based on a Pearson Chi Square test it is established that the education distribution is distinct for the three groups: those who have role models exclusively in the post-start-up phase are, on average, higher educated than those who have role models in both phases or only in the pre-start-up phase. The percentage of higher educated entrepreneurs using a role model in both phases is (exactly) equal to this percentage in the whole sample of entrepreneurs, including those without role models.

Role model functions

We first assessed the importance of the role model, in whatever function, for the entrepreneur by eliciting scores on the statement: '*Without this entrepreneur, I would not have started up a firm'* ('*Without this entrepreneur, I would not have continued my firm after start-up*'). The applicability of this statement is evaluated by the respondents (for each of the stages in the life

cycle of their firms in which they claimed to use a role model) using a five points Likert scale: '1' = 'fully disagree' and '5' = 'fully agree'. It appears that 28% of the entrepreneurs with role models (fully) agree that their role model has been of crucial importance for undertaking the venture (pre-start) or continuing it (post-start). This percentage is higher for entrepreneurs with role models in the start-up phase than for entrepreneurs with role models in the post-start-up phase, 33% and 21% respectively. The difference between these two percentages is significant ($p<.05$) thereby indicating that role models are of particular importance in the very early stage of the firm in gestation.

As we discussed in the previous section, we distinguish four functions of role models. We evaluate the importance of each of these functions for the entrepreneurs with role models in the various stages of their firm based on four statements; see Table 2. Again, the applicability of each of the statements is evaluated by the respondents (for each of the stages in the life cycle of their firms in which they claimed to use a role model) using a five points Likert scale: '1' = 'fully disagree' and '5' = 'fully agree'. Table 2 shows the results, depicting the percentage of role models that scored 4 or 5 ((fully) agree) on the statements.

<<Insert Table 2 here>>

Table 2 shows that the four identified functions of role models are all highly valued both before and after the start-up of the entrepreneurs' companies. Column II that pertains to all entrepreneurs in the sample with a role model reveals that entrepreneurs view learning by example as the most important function of their role models. Increasing self-efficacy turns out to be their least valued function in both stages. However, limiting the selection to role models who are perceived –according to the entrepreneurs involved- of crucial importance to the start-up (33%) or performance (21%) of their firm (column I), this picture alters. While learning by example remains the dominant function of role models, the inspiration and motivation function is assessed significantly more important than average. The last two columns show that role models perform about the same functions before and after start-up, with the exception of learning by support, which is significantly more appropriate in the post start-up phase.

We used the answers to the open questions (that precedes the statements in the course of the questionnaire) '*How did this entrepreneur influence your decision to start up a firm?*' with regard to the pre-start-up phase and '*How did this entrepreneur influence the further development of your firm?*' pertaining to post-start-up to verify whether our statements indeed

captured the most important functions. They turned out to do so, since 'providing confidence', 'stimulate', 'motivate', 'practical advice' and 'example' where the influences that were mentioned spontaneously most frequently.

To conclude, role models seem wide spread: 54 percent of the entrepreneurs have a role model in either phase of the firm life stage (while these firms are all younger than four years). Of these entrepreneurs, almost half have a role model in both the start-up phase and afterwards (often this is the same person). Moreover, many entrepreneurs think that their role models fulfilled important functions and a significant part of them even claims that they would not have started (or continued) their business without their role model. The dominant function of the role model is 'learning by example'. The next section is devoted to testing the hypotheses by means of multivariate regression analyses where needed and combined with simple comparative descriptive statistics.

4. RESULTS

The results are presented in three parts, each testing one of the three hypotheses.

4.1 Human capital and the use of role models

We assess to what extent the human capital characteristics of entrepreneurs determine the use of entrepreneurial role models by estimating a probit model. Table 3 shows the results. The results reported in the first, third and fifth columns are obtained without including controls in the regressions, whereas the results shown in the second and fourth column are obtained while including controls, see the note below the table. The first two columns analyze the use of role models in the start-up phase, whereas the other three columns show the results of a probit model including role models in both the pre- and post-start-up phase.

<<Insert Table 3 here>>

Table 3 shows that human capital matters for having a role model. More specifically, we find that general human capital (in terms of age and education) does not play a role for the presence of a role model at start-up. However, entrepreneurs with higher levels of education are more likely to have a role model after start-up than their lower educated counterparts, see the final three columns in Table 3 where both pre-and post-start-up role models are taken into

account. This effect may be explained based on the argument found in the literature on absorptive capacity (Cohen & Levinthal 1990), stating that in order to value, interpret and apply (external) knowledge, i.e. role model influences, economic actors should themselves have a certain level of specific knowledge and experience. In addition, higher educated individuals may have more ambitious goals regarding their company, and may therefore be in higher need of successful examples or support, particularly after the start-up phase when their company is taking off. We reject hypothesis 1a stating that 'Higher levels of *general* human capital (acquired through education or experience) will decrease the likelihood of having an entrepreneurial role model'.

The role of entrepreneurship specific human capital is consistent with Hypothesis 1b. More *entrepreneur specific* human capital (acquired through previously obtained entrepreneurial experience) decreases the likelihood of having a role model in both the pre- and post-start-up phase. However, more entrepreneur experience does not decrease the likelihood of having a role model that is of crucial importance for the start or development of their (new) firm. Besides the effects discussed that are relevant to hypotheses 1a and 1b none of the coefficients of the variables in the model are significant ($p<0.05$). Apparently, human capital is center stage in determining who uses a role model and who does not.

In order to test hypotheses 1c we need to establish whether the effect of entrepreneurship specific experience decreases the need for role models with particular functions (motivation and increasing entrepreneurial self-efficacy) to a greater extent. Table 4 shows the human capital related results of the probit regression explaining the (perceived) function fulfilled by the role model.[8] General and entrepreneurship-specific human capital has little explanatory power for the particular functions that entrepreneurs assign to their role models.[9]

To test hypothesis 1d we have also included a dummy variable in this table that distinguishes entrepreneurs and their role models in the pre-start-up phase from those post-

[8] We tested whether the analysis requires a framework of a two stage Heckman probit model in which the first stage decision is having a role model at all and the acknowledged functions of the role model are seen as a second stage decision. The first and second stage may be correlated and would lead to biased estimates of the second stage when excluding the first stage decision. This is not the case in the current application where the correlation coefficient is estimated to be not significantly different from zero (with p-values between 0.44 and 0.93). Variables used as identifying variables for the first stage regression are sector dummies, size of the firm at start-up (in FTES) and a dummy variable indicating team start-ups versus solo start-ups. In further tables, we will refrain from including a first stage.

[9] The frequency of personal contact between the entrepreneur and her role model will turn out to be associated significantly negatively with the education level of the entrepreneur and positively with her entrepreneurial experience (the analyses on which Table 8 column IV is based reveal this).

start-up. The results show evidence in support of hypothesis 1d: entrepreneurs in the post start-up phase are less likely to have role models for motivation/inspiration and they are more likely to have role models for 'learning by support'.

<< Include Table 4 here>>

4.2 Resemblance of entrepreneur and role model

To test hypothesis 2a, we analyze the differences between entrepreneurs and their role models in terms of gender, nationality and sector (Table 5) and we relate these differences to the function assigned to the role model (Table 6).

<< Include Table 5 here>>

Based on column I of Table 5, we first note that 68 percent of the entrepreneur-role model combinations (the statistic combines entrepreneur-role model matches in the pre-start-up and post-start-up phase) is of the same gender. If role models were drawn at random (with respect to gender), given the fact that 40% of the entrepreneurs (with a role model) in the sample is female, one would expect a much lower percentage of 0.6*0.6+0.4*0.4 = 52% of same gender matches. The difference in the actual and random proportions (68 versus 52) is statistically significant ($p < 0.01$) indicating that entrepreneurs tend to use role models that are of the same gender. It is noticeable that male entrepreneurs are more likely to use same gender role models than females. Males use male role models in 87% of the cases, whereas females use female role models in only 36% of the cases.

For nationality, 80% of the entrepreneurs use role models with the same nationality. For Dutch entrepreneurs this percentage is 85%. Given that 84% of the entrepreneurs with a role model are Dutch, a random draw would result in 0.84*0.84= 71% Dutch entrepreneurs with Dutch role models. We conclude, again, that entrepreneurs seek similar role models (proportions are significantly different, $p<0.01$).

The first column of Table 5 shows furthermore that 40% of the entrepreneurs with role models operate in the same sector as the role models do. Without any benchmark, we are confident that this percentage is much higher than a random draw would generate.

Table 6 shows the results from a probit regression in which the determinants of similarity between the entrepreneur and her role model have been established for the

characteristics gender (column 1), sector (column 2) and nationality (column 3). The dependent variable is one whenever the entrepreneur and her role model, either pre or post start-up, are similar on the dimension indicated. The table shows little support for the second half of hypothesis 2a: few similarities are associated with the role model's function that has been indicated by the entrepreneur as important. The only significant association is between the likelihood of gender similarity and the function of increasing entrepreneurial self-efficacy in line with hypothesis 2a.

<< Include Table 6 here>>

We test hypothesis 2b based on Table 7 that establishes the (dis)similarity between entrepreneurs and their role models by means of paired t-tests on the dimensions human capital and firm performance. The first three columns of the table show that role models have indeed higher levels of human capital than their users: they are significantly older (age is our proxy of experience) but equally highly educated. The firms of the role models are different from the firms of the entrepreneurs who use them in one respect: they are significantly larger (22 versus 3.5 FTE). However, contrary to the expectation expressed by hypothesis 2b, they are not more innovative and they do not serve more international or less local clients than their users. Columns IV-VI of Table 7 show that the same differences are also present (or absent) when the sample is limited to 'entrepreneur-role model with learning function' matches.

<< Include Table 7 here>>

To test the second half of hypothesis 2b the differences of the differences between entrepreneurs and their role models (first difference) compared between matches of entrepreneur and role model with a learning function and those matches without a learning function (second difference) are measured in column VII. The small size of these differences and the large size of the confidence intervals suggest that the matches with the subgroup of role models with learning functions largely resemble the matches within the subgroup without learning functions, leading to the rejection of the second part of hypothesis 2b.

Columns VIII-X of Table 7, finally, show the differences between entrepreneurs and their role models when these are used before the start-up phase (column VIII) and after the start-up phase (column IX) and compare these differences (column X, differences in

differences) to test hypothesis 2c. None of the inter-phase differences of the entrepreneur-role model differences is significant: in the post-start-up phase the differences are even smaller – and the resemblances larger –, however, with the exception of innovation strategy. Hence, we reject hypothesis 2c –which is in fact a combination of hypothesis 1d and 2a- that states that dissimilarities should be larger in the post-start-up phase than in the pre-start-up phase.

All in all, we conclude that entrepreneurs and their role models resemble each other in terms of the characteristics that facilitate role identification, i.e., gender, sector and nationality. In terms of human capital characteristics and firm performance, role models are older (more experienced) and have larger firms than their users leading to the conclusion that they will probably occupy a (more) desirable position, required for role identification and that they have the qualifications, as hypothesized, required for their learning function, either by example or support. However, neither the functions they are assigned to according to their users, nor the phase of the life cycle of the business venture of the role model user have significant effects on the (dis)similarities that we hypothesized.

4.3 The relationship and contacts between entrepreneur and role model

According to the literature, 'weak' and 'strong ties' perform distinct functions in setting up or developing business ventures. A minor part (41%) of the role models mentioned by entrepreneurs in our sample can be characterized by 'strong tie': 22% is a relative (parent or other family), and 19% of all role models originates from a group of friends.Interestingly, only 25% of all role models for entrepreneurs with entrepreneurial parents source from the family. In many cases role models are former employers or former colleagues: almost one-third of all role models. The remaining role models form a miscellaneous group, consisting of old study mates, professional contacts and people from (parental) personal networks. It is remarkable that almost none of the entrepreneurs (only two of them) mention that they consider an 'icon', i.e. a distant and famous (inter)national entrepreneur or firm as their role model. Therefore, one should not overestimate the importance of distant entrepreneurial examples. Role models are found 'close by'. This is also indicated by the fact that 84% of the entrepreneurs with role models in our sample have (or had) personal contact with their role models. Moreover, more than half of all role models with which entrepreneurs stay in touch personally, is – or was - contacted at least weekly.

The third set of hypotheses relates to the determinants of these relationships and contacts between entrepreneur and role model. Based on the theory, we consider differences

between the pre-start-up phase and the post-start-up phase (hypotheses 3a and 3b) and between role models with a mentoring function and others(hypothesis 3c).Tests of these hypotheses are found in Table 8. The various columns show the results from panel data regressions explaining whether the role model sources from weak or strong ties (columns I and II, panel probits), whether or not the entrepreneur and her role model have personal contact (column III, panel probit) and the frequency of contact (column IV, panel tobit). The panel character of the data reflects that we may have, in fact, an observation at $t = 0$ (pre-start) and $t = 1$ (post-start) for each of the entrepreneurs in the sample.

<<IncludeTable 8 here>>

Hypothesis 3a, stating that role models in the pre-start-up phase are more likely to source from the network of strong ties, while role models in the post-start-up phase are more likely to come from the network of weak ties is rejected. The first two columns in Table 8 show no difference in the strengths of ties between the entrepreneur and her role model between the two phases. Hypothesis 3b is also rejected: entrepreneurs with role models in the pre-start-up phase do not have more personal contact (column III) or interact more frequently (column IV) with their role model compared to entrepreneurs and role models the post-start-up phase.

Hypothesis *3c*, finally, stating that a mentoring role model function coincides with more personal and frequent contact with the entrepreneur for whom they are role models cannot be rejected. Role models with this function are more likely to be known personally by the role model user and the interaction takes place more frequently. Moreover, role models with a mentoring function are more likely to be family members, i.e., weak ties.

We conclude that entrepreneurs seldom recognize ‘icons’ as their role models. It is much more common that the primary role model of an entrepreneur is someone (s)he knows personally (84%) and with whom (s)he has frequent interactions. The minority stems from ‘strong ties’. A common source of role models is former colleagues and employers (see also Nanda and Sorensen, 2009). Unlike hypothesis 3a and 3b, we observe no differences between the source of role models and contacts between the entrepreneur and her role model across the pre- and post-start-up phases of the entrepreneur’s company. However, we find strong evidence that mentoring entrepreneurs are personal contacts of the entrepreneur, often from the family, with whom they have frequent interaction, as was hypothesizes (hypothesis 3c).

5. Conclusions

In the media, role models are increasingly acknowledged as important influential factors for occupational choice and career outcomes. Moreover, educational institutes around the globe seem to pay much attention and at an increasing rate to involving 'icon' entrepreneurs in their educational programs to motivate, inspire and support entrepreneurship among pupils and students. The efficiency and effectiveness on spending means and (student) time on role models in the classroom have received much less attention. More in general, researchers have, as yet, paid limited attention to studying entrepreneurship and role models. Apart from conceptual studies establishing a link between role models and entrepreneurial intentions, empirical research on the importance of role models for (nascent) entrepreneurs has been scarce and there is still little knowledge of what determines the use of specific entrepreneurial role models, as well as the precise function of such role models.

Our explorative empirical study based on extensive face-to-face interviews with a representative sample of about 300 entrepreneurs in the Netherlands has been a first step to fill this gap. We provide initial indications of the size and significance of the effect of role models on occupational choice, the function of role models and the relationship and similarity of characteristics between the (nascent) entrepreneur and the role model. As such, this study is a first attempt to unravel the meaning and importance of role models to entrepreneurs in their first start-up stage.

A first conclusion is that – relying on the opinions of the entrepreneurs themselves - role models matter for entrepreneurial careers. The use of entrepreneurial role models is widespread: 54 percent of the entrepreneurs have a role model in either phase of the firm life stage. Of these, 81% uses their role model before or just after starting up their venture and 53% afterwards, i.e., in the course of years one to three of the business's operations. 44% (81+53-100) of these entrepreneurs use a role model both pre- and post-start-up and for the majority of these entrepreneurs, the role model is the same person pre- and post-start-up. For first ventures all these percentages are likely to be even higher: our sample consists for 27% of experienced entrepreneurs who are less inclined to use role models.

Second, role models are viewed as influential persons by a significant proportion of the entrepreneurs who use them, especially in the early start-up phase of their venture. One third of the role model users at pre-start-up claim they would not have started up their venture without the presence of this role model. One fifth of the role model users in the post-start-up phase claim they would not have continued their business without the role model. This seems

to suggest that stimulation of role model usage by prospective entrepreneurs has the potential to contribute to a higher number of start-ups whereas stimulating the use of role models post-start-up may coincide with less firm dissolutions.

The dominant function of the role model is 'learning by example' although 'learning by support', 'increasing entrepreneurial self-efficacy' and 'inspiration/motivation' are also important (perceived) functions of role model as was predicted by social learning theory and role identification theory. In the pre-start-up phase the functions implied by role identification are acknowledged more (especially inspiration/motivation) whereas learning (especially by support) is a more acknowledged function of the role model in the post-start-up phase of the entrepreneur's venture. Thus, to promote entrepreneurship as a career choice it is important to bring together potentially aspiring and inspiring entrepreneurs who know each other. The fact that actual support by role models is important for entrepreneurs in the post-start-up phase and is usually provided by family members has been overlooked so far. This may have policy implications since family members can thus provide an efficient alternative to expensive channels of entrepreneur support that are often facilitated by (local) governments.

Third, few characteristics of entrepreneurs and their firms determine the use of role models. Human capital, though, forms an exception. Our results are consistent with the hypothesis that role models compensate for a lack of entrepreneurial experience. Those individuals who have no previous entrepreneurial experience are indeed more likely to have a role model than those who have previous start-up experience. However, the probability that these *de novo* entrepreneurs claim that their role model was of crucial importance is not higher than for experienced entrepreneurs.

Moreover, entrepreneurs with higher levels of education are more likely to use a role model in the post-start-up phase and the likelihood that these entrepreneurs view their role models as crucially important is significantly higher. This may be explained by their higher absorptive capacity (Cohen & Levinthal 1990), stating that in order to value, interpret and apply (external) knowledge, i.e. role model influences, economic actors should themselves have a certain level of specific knowledge and experience.

Fourth, we conclude that entrepreneurs and their role models resemble each other in terms of the characteristics that facilitate role identification, i.e., gender, sector and nationality. In terms of human capital characteristics and firm performance, role models are older (more experienced) and have much larger firms than their users(and than average) leading to the conclusion that they will probably occupy a (more) desirable position, required for role identification and that they have the qualifications required for their learning function,

either by example or support. These resemblances and differences between entrepreneurs and their role models apply irrespective of the function of the role model and the venture phase of the entrepreneur.

Fifth, while individuals are extensively and increasingly exposed to entrepreneurial role models through the media, these 'icons' are seldom considered role models for entrepreneurs in our sample. Our results strongly suggest that entrepreneurial role models tend to be next-door examples rather than more remote 'icons'. Most often, entrepreneurs know the entrepreneurs who influenced them personally, through networks in personal or professional spheres, where 'weak ties' dominate 'strong ties' (and the family is not a more important source of role models for entrepreneurs with entrepreneurial parents). The majority of entrepreneurs with role models they know personally have contacts with their role model on a weekly basis, at least. A common source of role models is former colleagues and employers (see also Nanda and Sorensen, 2009), suggesting that seeing peers being successful in entrepreneurship convinces them that they can do it themselves. We observe no differences between the source and frequency of contacts with role models across the pre- and post-start-up phases of the entrepreneur's company. However, we find strong evidence that mentoring entrepreneurs are personal contacts of the entrepreneur, often from the family, with whom they have frequent interaction. This seems natural (but was never demonstrated before).

Our explorative analysis of entrepreneurship and role models is prone to a number of limitations, which, at the same time provide indications for possible avenues for future research. Because our sample includes only entrepreneurs, it was not possible to gain insight into the extent to which role models influence individuals to abstain from entrepreneurship as a career choice (i.e. negative role models). Furthermore, we used a rather static design by concentrating on the most important role model only, while, in practice, entrepreneurs may be impacted by different role models at the same time. In addition, the focus of our study is the extent and determinants of role model usage (including their functions). It remains unclear whether and how using role models impacts the development of the firm of the role model users. More in general our study is descriptive in nature and the associations we find cannot be interpreted as causal effects. Future research could fill these gaps by concentrating on the effect of role model use on venture performance.

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Table 1: Descriptive Statistics of Entrepreneurs and their Firms

	I	II	III	IV	V	VI
	All	Without RM	With RM	With RM prestart	With RM Post-start	With RM pre-&post-start
Female (d)	0.39	0.39	0.40	0.43	0.50	0.33
Age	38.47	40.21***	37.04	38.0	37.2	36.1
Age < 30 (d)	0.19	0.14	0.23*	0.24	0.23	0.23
Age 30-44 (d)	0.51	0.49	0.54	0.49	0.53	0.57
Age 45+ (d)	0.26	0.33**	0.21	0.27	0.23	0.14
Higher education (d)	0.54	0.43	0.63***	0.61	0.87***	0.54
Born in NL (d)	0.81	0.77	0.84	0.88	0.73	0.86
Parent Entrepreneur (d)	0.64	0.65	0.64	0.75*	0.50	0.61
Entrepreneur experience (d)	0.27	0.38***	0.17	0.24	0.20	0.10
Entrepreneur experience >5 yrs (d)	0.15	0.23***	0.08	0.08	0.07	0.09
Region Amsterdam (d)	0.26	0.23	0.28	0.27	0.33	0.26
Region Rotterdam (d)	0.38	0.44*	0.33	0.39	0.17	0.34
Region Utrecht (d)	0.37	0.33	0.40	0.34	0.50	0.40
Sector retail (d)	0.28	0.35**	0.23	0.32	0.20	0.16
Sector hotels/restaurants (d)	0.14	0.17	0.13	0.14	0.20	0.09
Sector business services (d)	0.33	0.26	0.38**	0.32	0.40	0.43
Sector other services (d)	0.24	0.22	0.26	0.22	0.20	0.33
Shared ownership (d)	0.35	0.37	0.33	0.32	0.30	0.34
Home business (d)	0.51	0.51	0.51	0.46	0.63	0.50
N	292	133	159	59	30	70

The asterisks in columns II-III indicate the outcome of 2-tailed unpaired t-tests of the difference between the average values of the particular variable in the group of entrepreneurs with role models versus those without role models. The column in which the stars are depicted has a significantly higher average value for that variable. The asterisks in columns IV to VI indicate to what extent entrepreneurs with role models in different stages (pre-start, post-start of both) have similar distributions. The asterisks pertain to results from a Pearson Chi square test (for dummy variables) and an F-test (for continuous variables). Again, the column in which the asterisks are depicted has a significantly higher average value. A significant difference at the 10% (5%) [1%] level is denoted by * (**) [***].

Table 2: Descriptive Statistics: Functions of Role Models (RM)

Function	Statement pre-start (post-start)	I	II	III	IV
Percentage (fully) agreeing, by (sub)sets of role models		RM crucial importance	All RM	RM pre-start	RM post-start
(i) Inspiration / motivation	I admired this entrepreneur before I started (in the phase of the further development of) my company	0.80**	0.68	0.72	0.64
(ii) Self-efficacy	With this entrepreneur in mind, I thought: ' if (s)he can do this, I can do this too'	0.56	0.57	0.56	0.59
(iii) Example	This entrepreneur has been a positive example for me at the start-up (further development) of my company	0.91*	0.83	0.83	0.83
(iv) Support	This entrepreneur has really supported me with starting up my firm (after starting up my firm)	0.73	0.71	0.65	0.80**
N		64	228	129	99

The asterisks in column I indicate the outcome of 2-tailed unpaired t-tests on probabilities (pr-test) of the difference between the probability score of the particular variable in the group of entrepreneurs with role models that are of crucial importance and those that are *not* of crucial importance. The asterisks in column IV indicate the outcome of 2-tailed unpaired t-tests on probabilities (pr-test) of the difference between the probability score of the particular variable in the group of entrepreneurs with role models at pre-start-up and afterwards. A significant difference at the 10% (5%) level is denoted by * (**).

Table 3: Probit Regression Explaining Role Model Presence

Dependent variable = 1 for entrepreneurs who report to have used a role model (at start-up in the columns I and II; at any stage in columns III and IV) and 0 for entrepreneurs who have not acknowledged any role model (at start-up in columns I and II). The dependent variable in column V = 1 for entrepreneurs who *fully* agree that their role model has been of crucial importance pre- or post-start-up and = 0 otherwise.

	Marginal effect				
	Role model pre-start		Role model pre-or post-start		
	I	II	III	IV	V (crucial importance)
Female (d)	-0.14 (0.17)	-0.17 (0.19)	0.02 (0.18)	0.00 (0.19)	0.35 (0.19)*
Age (in years)	0.01 (0.05)	0.04 (0.05)	0.01 (0.05)	0.03 (0.06)	-0.02 (0.06)
Age^2 / 100	-0.02 (0.07)	-0.05 (0.07)	-0.03 (0.07)	-0.06 (0.07)	0.025 (0.07)
Education high (d)	0.17 (0.17)	0.07 (0.18)	0.56 (0.17)***	0.45 (0.18) **	0.56 (0.19)***
Dutch nationality (d)	0.29 (0.21)	0.25 (0.22)	0.12 (0.21)	0.07 (0.22)	-0.02 (0.23)
Parent entrepreneur (d)	0.27 (0.20)	0.32 (0.20)	0.23 (0.20)	0.25 (0.20)	0.27 (0.21)
Entrepreneur experience (d)	-0.54 (0.26)**	-0.58 (0.27) **	-0.52 (0.26) **	-0.54 (0.27) **	0.02 (0.28)
Entrepreneur experience > 5 years (d)	-0.26 (0.35)	-0.24 (0.36)	-0.40 (0.34)	-0.39 (0.35)	-0.47 (0.39)
Firm controls included	no	yes	no	yes	no
N	256	256	256	256	256
Log pseudo likelihood	-165.03	-161.12	-157.22	-153.17	-129.73
Prob>χ^2	0.0164	0.0135	< 0.0001	< 0.0001	0.0034
Pseudo R^2	0.062	0.0841	0.110	0.133	0.092

Standard errors in parentheses. A constant term and city dummies are included in all equations. The firm controls included in specification II and IV are all measured at start-up and include sector dummies, the firm size at start-up (FTE) and whether the entrepreneur shared the ownership with others (dummy).A significant coefficient at the 10% (5%) [1%] level is denoted by * (**) [***].

Table 4: Probit Regression Explaining Role Model Function [1=(fully) agree & 0=other](RM is present)

	Marginal effect on assigning the specified function to the entrepreneurial role model			
	Inspiration / motivation	Self-efficacy	Learning by example	Learning by support
	I	II	III	IV
Age (in years)	0.14 (0.09)	-0.07 (0.09)	-0.12 (0.10)	0.08 (0.09)
Age^2 / 100	-0.18 (0.11)*	0.07 (0.12)	0.15 (0.12)	-0.11 (0.11)
Education high (d)	-0.14 (0.23)	-0.02 (0.21)	-0.27 (0.24)	0.14 (0.23)
Entrepreneur experience (d)	0.11 (0.32)	0.49 (0.28)*	0.25 (0.33)	-0.10 (0.28)
Role model post-start (d)	-0.34 (0.15)**	0.07 (0.14)	0.01 (0.17)	0.46 (0.16)***
N (censored)	211	217	217	217
Log pseudo likelihood	-117.23	-138.89	-95.50	-121.19
Prob>χ^2	0.0016	0.1720	0.8396	0.0169
Pseudo R^2	0.1111	0.0677	0.0363	0.0792

Standard errors in parentheses. The standard errors are corrected for clustering for entrepreneurs with the same role models in both phases. A significant coefficient at the 10% (5%) [1%] level is denoted by * (**) [***]. A constant term and city dummies are included in all equations. The models include controls for gender, nationality and parental background, see Table 3.

Table 5: Descriptive Statistics: Similarity of Entrepreneurs and Role Models (RM)

	I	II	III	IV (II versus III)
Entrepreneur Characteristics	All Entrepreneur RM combinations	Entrepreneur RM combinations Pre-start-up	Entrepreneur RM combinations Post-start-up	T-test
Gender (% equal)	0.68	0.68	0.67	0.01
Female entrepreneur (% equal)	0.36	0.33	0.40	-0.07
Male entrepreneur (% equal)	0.87	0.89	0.85	0.03
Nationality (% equal)	0.80	0.80	0.79	0.01
If entrepreneur from NL (% equal)	0.85	0.84	0.86	-0.02
If entrepreneur from abroad (% equal)	0.35	0.38	0.33	0.04
City (% equal)	0.41	0.47	0.33	0.14*
Sector (% equal)	0.40	0.44	0.34	0.09
N	145	87	58	

Excluded are entrepreneur-role model combinations that are the same in the pre-start-up and post-start-up phase. A significant coefficient at the 10% level is denoted by *.

Table 6: Probit Regression Explaining Similarity Entrepreneur-Role Model

Dependent variable = 1 for entrepreneurs who report to have used a role model of the same gender (column I), the same sector (column II) or the same country of origin (column III); and 0 otherwise	Marginal effect		
	Same gender	Same sector	Same country
RM function: Inspiration / motivation	-0.09 (0.13)	-0.21 (0.13) *	-0.09 (0.16)
RM function: Increasing self-efficacy	0.35 (0.14) ***	0.067 (0.10)	0.05 (0.11)
RM function: Learning by example	-0.02 (0.13)	0.21 (0.13)	0.13 (0.16)
RM function: Learning by support	0.07 (0.10)	0.10 (0.09)	-0.10 (0.11)
N	211	211	211
Log pseudo likelihood	-88.72	-129.37	-89.72
Prob>χ^2	0.0000	0.1420	0.0175
Pseudo R^2	0.2957	0.0929	0.1982

Standard errors in parentheses. The standard errors are corrected for clustering for entrepreneurs with the same role models in both phases. A significant coefficient at the 10% (5%) [1%] level is denoted by * (**) [***]. A constant term and city dummies are included in all equations. Moreover, age, education, experience, nationality, gender and pre- versus post-start-up controls are included in the analysis but the coefficients are not included in the table.

Table 7: Paired t-tests: Similarity between Entrepreneurs (E) and their Role Models (RM)

	I	II	III	IV	V	VI	VII	VIII	IX	X
	All Entrepreneur-RM combinations			Entrepreneur-RM in learning function combinations [1]			Diff in Diff Learning function (VI) versus non-learning function	Pre and post-start-up phases comparison		
	E	RM	Difference (t-test)	E	RM	Difference (t-test)		Pre-start-up Diff between E and RM	Post-start-up Diff between E and RM	Diff in Diff (XI-VIII)
Human capital										
Age < 30 (d)	0.23	0.04	0.19***	0.21	0.04	0.17***	-0.04	0.16***	0.16**	-0.01
Age 30-44 (d)	0.55	0.44	0.11***	0.57	0.48	0.09	-0.06	0.18**	0.12	-0.06
Age 45+ (d)	0.19	0.45	-0.27***	0.17	0.41	-0.24***	0.06	-0.31***	-0.24***	0.07
Higher education (d)	0.60	0.60	-0.01	0.59	0.60	-0.01	-0.05	-0.02	0.08	0.10
Firm performance										
Firm size (current FTE)	3.5	22.1	-18.6**	3.2	7.8	-4.6***	30.4	-12.6**	-5.8***	6.8
Products/services considered novel (d)	0.36	0.39	-0.03	0.34	0.41	-0.07	-0.08	-0.08	-0.17*	-0.09
Novel technology applied (d)	0.27	0.33	-0.06	0.28	0.37	-0.09	-0.07	-0.11*	-0.09	0.02
Percentage international clients	0.15	0.16	-0.00	0.14	0.13	0.01	0.03	-0.04	-0.01	-0.03
Percentage local clients	0.58	0.53	0.05	0.58	0.51	0.07	0.08	0.08	0.07	-0.01
N	229	229	229	135	135	135		87	59	

[1]The entrepreneur-role model in learning function combination equals one when the example and support functions (see Table 2) have both been acknowledged by the entrepreneur. The asteriks in columns III, VI, VIII and IX denote the significance of the difference tested by a 2-tailed paired t-tests as indicated. A significant difference at the 10% (5%) [1%] level is denoted by * (**) [***]. For the columns VII and X, denoting diff-in-diff values, we could not establish the significance levels of the differences because they result from comparisons of different subsamples.

Table 8: Panel Probit Regression: Sourceand Contacts with Role Model

	I		II	III	UV
	Strong Ties		Weak Ties	Personal Contact (d)	Frequency of Contact (1-5)[1]
	Family (d)	Friends (d)	(Previous) Employer / Colleague (d)		
Role model post-start (d)	-1.24 (0.80)	0.68 (0.39)*	-0.17 (0.32)	0.48 (0.70)	-0.05 (0.14)
RM function: Inspiration / motivation	1.43 (0.62)**	-0.59 (0.31)*	-0.02 (0.23)	-0.12 (0.52)	0.11 (0.14)
RM function: Increasing self-efficacy	-2.06 (0.73)***	-0.14 (0.22)	0.39 (0.20)*	-0.22 (0.41)	0.01 (0.11)
RM function: Learning by example	0.45 (0.98)	0.16 (0.29)	-0.18 (0.25)	0.54 (0.60)	-0.06 (0.15)
RM function: Learning by support	2.05 (0.67)***	0.22 (0.23)	-0.27 (0.16)*	1.84 (0.63)***	0.65 (0.10)***
N (nr of unique individuals)	211 (149)	211 (149)	211 (149)	211 (149)	211 (149)
Log pseudo likelihood	-69.36	-79.71	-102.61	-64.26	-314.79
Prob>χ^2	0.0060	0.8016	0.5038	0.7977	<0.0001

Standard errors in parentheses. Age, education, experience, nationality and gender controls are included in the analysis but the coefficients are not included in the table. Random effects are included for 149 entrepreneurs (who may have role models in either or both phases). A significant coefficient at the 10% (5%) [1%] level is denoted by * (**) [***]. A constant term and city dummies are included in all equations.

[1]Panel tobit with lower and upper bound. Category 1 includes 'no contacts', category 2 'incidental', category 3 'monthly', category 4 'weekly' and category 5 'daily'.