# Entrepreneurial Role Models

*The Determinants and Consequences of Entrepreneurial Role Models*

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## Declaration and copyright

# Acknowledgements

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Finalizing this Master thesis means ending my time as a student in Rotterdam, and starting a whole new period full of opportunities. The choice of an entrepreneurial thesis is in line with my aspirations, as one day I would like to start my own business. With this program I learned many valuable attributes which may prove to be worthy in the future.

Before this thesis commences I want to take the opportunity to thank Prof. dr. Roy Thurik and Dr. Jolanda Hessels for their support. After each meeting I left the room full of inspiration and devotion to complete this project.

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# Table of Contents

# Executive summary

Some entrepreneurs are drawn to other entrepreneurs and consider them as role models. Literature about entrepreneurial role models is scarce, therefore I complement the literature by placing role models in an entrepreneurial context, providing policy makers with a new instrument –role models- . This research elaborates on role models that own a company, using a data set of 129 Dutch entrepreneurs. I investigate the variables that lead to the presence of an entrepreneurial role model. This is followed by examining various consequences of having a role model. Logistic binary regressions are used to test the variables. The results indicate that younger entrepreneurs are more often in the presence of an entrepreneurial role model. The entrepreneurs that have a role model were more innovative (measured for product and process innovation) and were more likely to hire more than one employee, compared to the entrepreneurs that lacked a role model.

# 1.    Introduction

## 1.1    Role models

Many people are influenced by role models, which makes it a very interesting topic to investigate. By nature individuals emulate other human beings. From local hero's to global super stars, their behavior is monitored and imitated. Most people are drawn to specific attributes of role models, such as freedom or success. As the title suggests this thesis covers entrepreneurial role models. I test which factors influence young business owners to having other entrepreneurs or businesses as role models and investigate the various consequences that occur in the presence of an entrepreneurial role model. With this information policy makers can try to increase the amount of role models and stimulate an entrepreneurial career choice in order to increase economic growth and innovation.

The impact of a role model has changed over the years, especially after the late 1930s when the television was introduced, making it possible to reach millions of viewers. At this point people were exposed to various marketing campaigns that were trying to sell an image, increasing the importance of a role model. On many different aspects the role model became more essential, e.g. in sports, management, political leaders and art. Although the popular media frequently uses role models and the importance has been stressed by various scholars (i.e. Gibson, 2003; Bandura, 1997; Lockwood and Kunda, 1997), research specifically on role models in entrepreneurial activities remains scant. In this thesis the focus is on the impact of role models on entrepreneurs. The definition of a role model used in this research is a description by Gibson (2003a pp. 199.):

''A role model is a person an individual perceives to be similar to some extent, and because of that similarity, the individual desires to emulate (or specifically avoid) aspects of that person's attributes or behaviors.''

In this research some entrepreneurs consider other entrepreneurs as role models while others consider another business as a role model, meaning that an image can also function

as a role model. An example of this is "Apple" which strives to meet the demands of the individual and creating a friendly, personalized image.

The definition of a role model can be divided into two basic components, it is a combination of ''role'' and ''modeling''. Katz and Kahn (1978) define ''roles'' as forms of behavior and sets of activities, with part of status positions, such as a manager, leader or teacher. The idea of ''modeling'' is explained by Bandura (1986) as the psychological matching of cognitive skills and patterns of behavior between a target and an observing individual.

Demographic and personal characteristics are influential and can determine whether an individual has a role model. This research will take these factors into consideration. Arenius and Minniti (2005) stress the importance of personal characteristics and the environment of an individual when choosing to become an entrepreneur. The results indicate that subjective perceptions, such as the presence of another entrepreneur, tends to correlate more with starting a business than objective expectations. Thurik and Wennekers (1999, pp. 28) state that: "In linking entrepreneurship to economic growth: we find that personal conditions lead to entrepreneurship, this leads to innovation and competition which leads to economic growth". In this Master thesis I zoom in on the personal conditions to see if role models have an effect on personal conditions and, among other effects, test if having a role model directly leads to more innovation.

A new data set is created by interviewing 129 Dutch entrepreneurs, questioning them about how a role model contributed. This data is used in various analyses in order to find an answer to the research question stated in section 1.3. The interview questions are displayed in Appendix A.

## 1.2    Relevance

As stated, this thesis will contribute to the existing body of literature relating to role models, by adding the entrepreneurial context. Scholars investigating the influence of role models have been concentrating mainly on employees and vocational decisions. Super (1963) found that having a role can effect in a boost of motivation and inspiration. Are there any further

consequences based on the presence of a role model? Few scholars have studied this topic, therefore I will try to find an answer to these research questions related to the potential effects that result from having a role model. I will take a closer look at the role model itself in section 4.2.1 answering questions like "are highly educated more often drawn to highly educated role models?" and "are female entrepreneurs drawn to female role models?". Followed by an answer to the question: "What variables can determine the presence of an entrepreneurial role model?". This is relevant as it can be used by policy makers to increase the amount of role models. An increase in role models may draw more people to become an entrepreneur which leads to more economic growth and innovation in the long run. Yet for policy makers the impact of their actions remains unclear. The section determinants will give the policy makers a notion in what way to increase the amount of role models. If for instance young people are more drawn to role models they can use this information in their policy. The policy makers will be interested in the effect from having a role model, if the results of this thesis indicate that entrepreneurs with a role model are more innovative than policy makers have another instrument to increase innovation in their region.

## 1.3    Research question

As pointed out earlier in this chapter my research focuses on Dutch entrepreneurs and their role models. After having collected the data I will see what the determinants variables for having a role model are and how it effect the entrepreneurs. In order to examine this subject I will apply the following research question:

"What are the determinant variables and the observed consequences of Dutch entrepreneurs for having an entrepreneurial role model?"

I will start by focusing on the relationship between entrepreneurs and role model in chapter 4.2.1, giving an idea of the nature of the respondents and how they relate to role models. Secondly, the deciding factors of having a role model are examined into detail. Finally, the last part of the research contains the impact of having a role model. The main contribution

of this research is that all respondents are entrepreneurs, leading to a better understanding about how this specific group conceives role models.

## 1.4    Thesis outline

With the introduction now covered, the remainder of this Master thesis will be as follows. The existing literature about role models will be discussed in the next chapter, the subject of the literature can be indirectly related to the topic of this thesis, as the current literature about role models in combination with entrepreneurs remains scarce. The methodology used to test the research question is presented in chapter 3, consisting of a research strategy, research design, sample, data collection, data analysis, and description of the variables. This chapter is followed by the results of the analyses, which are transcribed. Chapter 5 will provide the conclusions about the results, in addition the limitations and recommendations for further research are presented. An introduction and brief summary will be provided in each chapter.

In short this thesis focuses on newly founded businesses that have entrepreneurs or other businesses functioning as a role model. In order to get a better understanding on the determinants and effects of role models on entrepreneurs, the outcome of this research will be of importance in order to stimulate entrepreneurship in the Netherlands.

## 2. Literature Review

### 2.1    Introduction

This section contains an overview of the existing literature about role models. The aim is to provide the different ideas, results, and theories from the leading scholars that focus on this topic. Literature about role models linked to entrepreneurs is very limited. I will now elaborate on the different agents and focus on the role model.

Theory indicates that several agents can have an effect on an individual when forming a self-concept. Mentors are defined as persons who provide advice and support to a protégé through an interactive relationship (Higgins and Kram, 2001). Role models are less task specific, do not require an interactive relationship, and allow to be observed from a distance yet still providing the individual with essential lessons. Kram (1985) points out that there may be an overlap in the two agents, as a mentor can also be considered as a role model. The main difference between a mentor and a role model is the amount of individuals they can reach. A mentor is restricted to 1 or 2 protégés, whereas a role model is able to potentially reach millions using popular media. Finally, a role model is not actively trying to become a role model and sometimes even unaware of being one. This is in contrast to a mentor who is always aware, as an interactive relationship is required. Kram (1985) found that people often select significant people – such as supervisors, teachers, and mentors- as role models.

Having pointed out the different agents, I now solely focus on the appearance role models. Literature shows that two different modeling theories exist about why people chose a role model. The role identification theory suggests that individuals are attracted to role models because of similarities in terms of attitudes, behaviors, goals, or the desirability of their status position. By observing and emulating the role model, the individual enhances the similarities (Erikson, 1950; Foote, 1951; Kagan, 1958; Kohlberg, 1963). The second theory, the social learning theory, is more based on how the individual can acquire new skills, tasks, and norms by learning from a role model (Bandura, 1977b; Miller & Dollard, 1941; Wood &

Bandura, 1989). In this theory more emphasis in on the learning aspect of a role model. Yet both theories suggest that an individual has only one role model, however Bucher & Stelling (1977) have shown that often people identify with multiple role models rather than a dominant one. They also categorized role models in five different types: partial, charismatic, stage, option, model, and negative. The partial model demonstrates skills or characteristics which are emulated by individuals, this is the most common mentioned model. A role model that is conceived as admirable or attractive is classified as a charismatic model. Stage models help people in finding an ideal point in socialization. Option models provide an alternative view of current behavior. Finally a negative role model can have a demoralizing effect. In addition to this Lockwood and Kunda (1997) found that the entrepreneur can indeed experience a negative effect when role model seems unattainable. It is also likely that entrepreneurs take notion of what their fellow entrepreneurs have achieved, praising their achievements but not considering them as role models.

The existing literature that elaborates on role models in general is used when forming hypotheses to test if the discovered outcomes by the relevant academic also applies to entrepreneurs. I will first form 6 hypotheses for the determinants, followed by 4 hypotheses to test the various consequences of having a role model. The approach of this thesis will follow the same basic principle as Shapiro (1978) used. First I state the definition of a role model (1.1). Subsequently, I investigate how a role model is formed, and lastly the functions of a role model are examined. Section 2.2 describes the potential determinants found in the literature in order to form hypotheses. In section 2.3 the effects of having a role model that emerged from the literature are discussed and transformed into hypotheses. This chapter will finalize with a brief summary in part 2.4.

## 2.2    Determinants

The existing literature about role models follows from two main psychological theories. Firstly the social learning theory by Bandura (1986) states that individuals are attracted to role models that are actively helpful in requiring new tasks, skills, attitudes, and norms. This theory takes no notion of demographical factors like age and gender, it suggests that the

individual conceives a role as an opportunity to improve. Secondly, the identification theory by Slater (1961) finds that individuals feel an emotional and cognitive relationship with the role models. This theory includes the notion that role models are selected because of similarities with the individual. Based on the literature I construct hypotheses that potentially determine the presence of an entrepreneurial role model. Firstly some related literature is mentioned and from that I construct the hypotheses.

Literature has focused on the career development of women and how a role model is important in the process of career aspirations and choices. Almquist and Angrist (1970) have done a longitudinal study about career planning of college women. Among other variables the influence of occupational role models was tested, the results stress the importance of older female role models. Non-career orientated woman identified family members and relatives as role models, in contrast to the more ambitious female students that reported teachers, professors, and people in the occupation as role models. In addition to this, Angrist (1969) concludes that a woman's own self-refection is molded by significant others by paying attention to age, gender, and functions of the role model. After a while, increasing effort, time and money has been invested in projects to promote women in traditionally male professions. These projects have concentrated on providing role models and mentors to women. A distinction is made between a ''total role model'' that supposedly provides an ideal self in every aspect of life, and a ''partial role model'' of whom only particular traits are emulated by others. Shapiro (1978) found that a total role model can have a destructive effect on both the female student and the role model, as the expectation level can become too high. Hacket (1989) investigated the influences of female role models and concluded that they play a significant role in career-related aspirations and choices. The results also indicate that the presence of a role model interacts with performance self-esteem. The most common mentioned female role models include professors and teachers, parents and family, partners, and other significant adults. The presence of a role model has been notified as an important positive factor, and the absence of it has been identified as a significant barrier to some women's career development (Tidball, 1973). The professional relationship between a female student and a female role model is far stronger than that of a male student and male role model, both parties identified with a role model for personal similarities (Gilbert, 1985).

Marx and Roman (2002) investigated the influence of role models on women's math test performance. This research tests the consequences of interference of a role model. Results indicate that female math students performed better when a female experimenter gave the test, opposed to when a male experimenter did. Yet another tests showed that although the performance was better, the state of self-esteem declined when students were exposed to a female role model with superior math skills. This is in line with Tesser's (1986) work, as he describes that unfavorable comparisons can damage a person's self-evaluation. A similar research is done by Boswell (1985), she states that female mathematic students who have examples of female role models in the same field, are less likely to be disturbed by the gender stereotype and perform better in their math test. Sternglanz and Serbin (1974) elaborate on the effect role models on television have on the behavior of children. Results indicate that not only do male and female models perform different actions, but they also experience different consequences for those actions. With these different stereotyped sex roles, the behavior of children is influenced at a young stage, which can have on influence when seeking a role model.

Having discussed the various differences between how men and women experience a role model, I now want to test if females indeed are more drawn to role models. Entrepreneurs are mostly men, yet the literature suggests that female entrepreneurs may be more drawn to an entrepreneurial role model. Here I want to test if there is an association between female entrepreneurs and the presence of a role model. The data is cross sectional therefore no causality can be tested. This leads to the following hypothesis:

> ➢ *Hypothesis 1: The presence of a female entrepreneur is significantly and positively associated with the presence of a role model.*

Demographic factors can play a great role in the acquiring of a role model. Local role models are formed from close interaction, here the distance between the role model and entrepreneur proves important. In 1992 Kulik and Ambrose take notion of the importance of demographic factors such as gender, age, background as well as prior experience. Stuart and Abetti (1990) stated that the time entrepreneurs spend on their new venture is far more valuable than time spend in school or at large firms. They also investigated 24 new technical firms and came to the conclusion that experience had a strong influence on the initial

success of a new venture. In this research I test if less experienced entrepreneurs are more likely to have a role model. In order to formulate the second hypothesis I will focus on the prior experience factor and associate it with the presence of an entrepreneurial role model. I assume that less experience leads to being in need of a role model. Less experience may be more open to advice as most problems they face or new and challenging. In this thesis gender, age and background will also be more closely examined and tested for their influence when selecting a role model. The assumption based on experience leads to the hypothesis 2 constructed as:

> *Hypothesis 2: Having less that 3 years of experience as an entrepreneurs is significantly and positively associated with the presence of a role model.*

Betz and Fitzgerald (1987), in their research on what influences the career of a woman, found that facilitating background factors involve: a working mother, supportive father, highly educated parents, and a female role model, along with work experience. Individual factors such as an androgynous personality, high self-esteem, strong academic self-concept, and high ability were identified as facilitating factors. Davidsson (1995) found that 40 percent of small business owners have a self-employed parent as a role model. The family can play a role in two ways, one way is to provide money in the sense of start-up capital or introduce their relative to a network. Other factors like emotional support can also play an important role for an entrepreneur, the impact of a family can impose a lot of difference and influence on important decisions. Family and friends can provide help when in need. These are all indicators that family members can function as role models. I address only entrepreneurial role models which means that the family member has to be an entrepreneur in order to be taken into account, with this in mind I assume that having an entrepreneurial family is positively associated with the presence of a role model, which does not mean that the family is the role model. I therefore formulate hypothesis 3 as:

> *Hypothesis 3: Having family as entrepreneurs is significantly and positively associated with the presence of a role model.*

Gibson (2003b; pp. 15) states that most sampled participants have a range that peaks at the age of 30. Qualitative studies that interview individuals over 40 years old are non-existent. He finds that: ''Early-stage respondents who are working on creating a viable self-concept were more likely to construe their role models as positive, close, and sources of a range of attributes. Middle- and late-stage respondents were more likely to see their role models as sources of specific, and often negative, attributes.'' In other studies he finds that older respondents are more likely to identify with multiple role models in their organization. The identification is important to develop a self-concept, yet the way older employees learn from their role model is different from young employees. More specific attributes of a role model are copied by older employees, while younger employees are emulating the general attributes (Gibson, 1995). Coutu (2000) acknowledges this finding as his research concludes that old employees often lack behind in technological knowledge and therefore want to emulate the technical skills of the younger, more technological advanced employees. In addition to this theory Markus and Nurius (1986) conclude that role models are important in creating possible selves, differing depending on age. They find that younger respondents have a greater number of role models, in different fields, implying that they are still searching for their identity. Older respondents focus on fewer and more attainable possible selves. This thesis the amount of role models is not taken into account. Ibarra (1999) finds that young employee's ability to adopt to work challenges is positively influenced by role models. This result is not striking, as often employees have role models that work at the same company. It is interesting to test whether the same outcome is found for entrepreneurs. I expect that few role models have a negative influence on entrepreneurs since their pick their own role model and are less bound to a work floor, as employees often are. Wood (1996) found that role models can be divided into self selected role models, and role models that are imposed by the environment. I examine if young entrepreneurs are more often associated with entrepreneurial role models. Since they are less specific in finding certain attributes in a role model and research has proven that having a role models helps employees in their ability to adopt to work challenges, the same may hold for entrepreneurs. The arguments provided in the existing literature lead to:

> *Hypothesis 4: Being a young entrepreneur is significantly and positively associated with the presence of a role model.*

The effects of having a role model are mostly in relationship with the choice in career development (Krumboltz, 1996; Speizer, 1981) and, within organizations, the impact on new employees (Ostroff and Kozlowski, 1992). Different groups of individuals all regard role models as important in their development, as they emulated attitudes, professional identity and goals. (Gibson, 2003). Sexton and Bowman (1986) formulated characteristics which they considered most important, they include: high need for autonomy and low conformity. The fifth hypothesis will further examine if the need for autonomy will lead to finding a role model. I assume that an entrepreneur that is really driven to become independent will need a role model to emulate in order to achieve his goal. Low conformity may draw an entrepreneur to an "out of the box" entrepreneurial role model, they cannot find on any work floor. They arguments lead to the following hypothesis:

➢ *Hypothesis 5: Having the motive to become your own boss is significantly and positively associated with the presence of a role model.*

Lockwood and Kunda (1997) conclude that only when an individual finds a role model relevant to his or her needs and goals, and views the position of the role model as potentially attainable, a role model can provide motivation and inspiration. These two qualifications -relevant and attainable- need to be fulfilled, if not than a role model can even have a negative effect. Here more focus is on the effects of having a role model, which will be discussed in the next section. Yet, attainability is related to fear of failure, which can be considered as a determinant for having a role model. Most individuals are risk averse, yet the data set contains only entrepreneurs, implying that the fear of failure should be lower than the average, this does not mean that no fear of failure is observed. Baron (2000) and Begley and Boyd (1987) have shown that the presence of a role model can enhance self-efficacy, which can reduce fear of failure. Minniti (2004) has explained the increase in confidence and reduce in ambiguity by the presence of a role model. Wieber and Milliman (1997) found similar results, nevertheless added the fact that an entrepreneur, having a role model, was now part of a network and gained access to new information. Aldrich (1999) states that the role model increase the confidence of an entrepreneur by providing advice, support and examples. The findings of these results all contribute to the idea that an entrepreneur that still experiences fear of failure is more likely to search for a role model.

The role model can support the entrepreneur with comfort and information which can be facilitating. Therefore this research will examine the following hypothesis:

> *Hypothesis 6: Having fear of failure as an entrepreneurs is significantly and positively associated with the presence of a role model.*

## 2.3    Consequences.

Most studies that relate to role models address the influence of role models on career choices. A way to measure the effects of role models is the Influence Role Models Scale (IRMSl Basow and Howe, 1980), yet this instrument is limited as it only tests if the respondents perceive a positive or negative influence. This research will elaborate on more specific consequences of having a role model. The literature is scarce on some of the variables I investigate, therefore this thesis provides further understanding of these factors. Once some of the effects of having a role model are situated policy makers know that they have to increase the amount of role models to achieve this effect.

A social consequence of having a role model that received a lot of theoretical attention is the notion of possible selves. This mechanism for identity change is defined as ideas about who one might become, would like to become, or fears of becoming (Markus and Nurius, 1986). A role model is the center of attention is this process as he transfers his behavior and attitudes to his followers, sometimes without being aware. Ibarra (1999) elaborates on individuals with a changing professional career who experiment with images that serve as "possible selves" in order to bridge a gap between their current capacities and self-conceptions, and the expected behavior in their new role. Entrepreneurs can be exposed to new challenges for which they have to adjust their behavior, e.g. an entrepreneur that hires employees needs to adjust his/her behavior in some way to obtain appreciation from his employees. In this situation a role model may provide a good example in order to obtain a credible pick-order. Ibarra (1999) found that participants that observe a role model learn tacit display rules and signaling professional traits. All participants learned different skills, this can be explained using the identity-matching theory which states that individuals direct attention to those elements of the role models behavior that most matched (or mismatches) their own skills, preferences, inclinations or values (Ibarra, 1999). The participants were

likely to chose a feasible role model, the most objective factors measured were age, nationality and gender. Some participants emulate selectively, as they chose from a broad group of role models, they chose only the relevant characteristics from various role models, forming a customized model, this is referred to as selective imitation. Others were more drawn to one dominant role model. Finally, Ibarra (1999) found that after the participants received feedback which led to the need to improve their image, the urge to find a role model severely increased. Robert and Lent (1994) stress the importance of the self efficacy in choosing a career path and performance in that career. A role model has a great deal of influence on people's judgments, this research will further investigate the influence on the performance of an entrepreneur. In the literature the effect of role models on career choice has been examined (Krumboltz, 1996). Super (1963) has written an article about vocational development where he mentions the influence of role models, stating that identification with significant others is important when choosing an occupation. The importance of a role model is accentuated, as it can influence the preferences in the childhood and adolescent years of an individual. This research has shown the importance of role models, as it helps individuals to define their self-concept.

With the general notion that the literature provides on the effect of the presence of a role model now covered, I will elaborate on potential consequences in order to construct hypotheses based on the literature.

A role model helps to construct an identity, which is very important in a social and psychological manner. An entrepreneur that is exposed to other very innovative entrepreneurs may himself become more innovative. This section will see what the existing literature finds on what the effects of having a role model entail. There are scholars that consider a role model to be of vital importance, suggesting that having good role models may lead to a successful career, and failure is due to a lack of role models. (Girona, 2002; McQuillan, 2002; Ross, 2002). The social learning theory states that individuals want to have a role model they can learn from. In the extend of this theory Lockwood & Kunda (1997) state that people insist on finding a role model that can help in achieving certain goals in life. As entrepreneurship is commonly related to innovativeness, and a role model increases an entrepreneurs network, and thus the sharing of ideas, I test if a role model has a positive

influence on the innovativeness of an entrepreneur. The hypothesis 7 tests for product innovation followed by hypothesis 8 that concerns process innovation.

➢ *Hypothesis 7: Having a role model is significantly and positively associated with product innovation.*

➢ *Hypothesis 8: Having a role model is significantly and positively associated with process innovation.*

The presence of a role model is an element that influences the perceptions individuals have about an entrepreneurial career. Arentius and Minniti (2005) state that entrepreneurship is about people, and people are easily influenced by others. As various other scholars (Wit & van Winden, 1989) extended their research about role models, more interest occurred in the presence of role models and the qualitative effects. The 'entrepreneurial preparedness' and 'entrepreneurial career expectancy' were found to be positively influenced by the presence of a role model (Scherer et al, 1989), even the desire of founding a firm occurred when exposed to a positive entrepreneurial role model (Krueger, 1993). Rich (1997) concluded that role models in the sales department had a significant positive indirect effect on overall performance. Here the amount of employees is taken as a performance measure of performance. The ninth hypothesis assumes that entrepreneurs that have a role model will thus have easy excess to advice and support relating to the hiring of employees. Consequently entrepreneurs with a role model are more often associated with the presence of a role model. To test if this assumption holds I formulate hypothesis 9 as stated bellow.

➢ *Hypothesis 9: Having a role model is significantly and positively associated with having two or more employees.*

Lockwood and Kunda (1997) formulate the difference between three outcomes of having a role model. Firstly, they relate to the potential motivation and boost to aspiration and the self image, followed by possible negative effects, like demoralization under uncertain circumstances. In some cases no effects are observed. Lockwood and Kunda (1997) elaborate further on these different outcomes and introduce the term superstar, defined as individuals of outstanding achievement, serving as role models to others. They pose that

superstars only affect self views when they are considered relevant, and the impact will depend on the perceived attainability of their success. If the role model's success seems attainable, the preceptor will be inspired and motivated. Demoralization will occur if the success of a role model is unattainable in the perspective of the individual. This contradicts the findings of Tesser (1986) who assumed that if a role model excels at a relevant domain, the dedicational consequences are bound to be negative. Being motivated can result in spending more time on your enterprise. In order to test if entrepreneurs with a role model are more inspired, motivated and thus dedicated I use the amount of working hours, for which a dummy is created with a frontier at 40 hours a week. This leads to the following hypothesis:

➢ *Hypothesis 10: Having a role model has is significantly and positively associated with the level of dedication.*

## 2.4 Summary

Chapter 2 gave a short overview of the literature which lead to 10 hypotheses, helping to provide an answer to the main research question. Firstly the determinants leading to the presence of a role model are discussed based on the literature. Subsequently, the literature about the effects that occur when having a role model are presented. Figure 1 gives a schematic overview of the situation. Literature provides unclear evidence of these variables and this research will contribute to further understanding about role models.
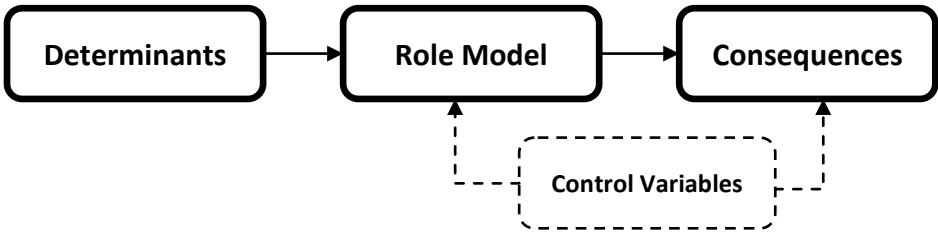


Figure 1: Schematic overview research

# 3. Methodology

## 3.1 Introduction

An investigation of the existing literature has lead to the formulation of 10 hypotheses in order to present an answer to the main research question. Figure 2 displays all hypotheses in a synoptic way.

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**Determinants**

- *Hypothesis 1: The presence a female entrepreneur is significantly and positively associated with the presence of a role model.*
- *Hypothesis 2: Having less that 3 years of experience as an entrepreneurs significantly and positively associated with the presence of a role model.*
- *Hypothesis 3: Having family as entrepreneurs is significantly and positively associated with the presence of a role model.*
- *Hypothesis 4: Being a young entrepreneur is significantly and positively associated with the presence of a role model.*
- *Hypothesis 5: Having the motive to become your own boss is significantly and positively associated with the presence of a role model.*
- *Hypothesis 6: Having fear of failure as an entrepreneurs is significantly and positively associated with the presence of a role model.*

*Consequences*

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- *Hypothesis 7: Having a role model is significantly and positively associated with product innovation.*
- *Hypothesis 8: Having a role model is significantly and positively associated with process innovation.*
- *Hypothesis 9: Having a role model is significantly and positively associated with having two or more employees.*
- *Hypothesis 10: Having a role model is significantly and positively associated with the level of dedication.*

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Figure 2: All hypotheses

Chapter 3 will cover the methodology used to test the research question. Firstly the research design is reviewed in which I explain what strategy is applied to test the main research question. Subsequently the research design is introduced, here the sample data collection and data analysis is presented. The variables are discussed in section 3.4, Appendix A contains an overview of the variables. A brief summary is given at the end of this chapter in section 3.5.

## 3.2 Research strategy

This section contains a short explanation of two research paradigms, followed by the research approach used in this thesis. According to Hussey and Hussey (1997) the research paradigm entails people's philosophies and assumptions about the world and nature of knowledge. About how research should be conducted in a scientifically accepted manner. Two main research paradigms are the qualitative and the quantitative paradigm. The qualitative research approach is associated with an explorative way of examining, using small data sets and focusing on forming new theories and insights. Research methods used when applying this paradigm are in-depth interviews, usually face to face confrontations in order to get to know the details that are required to eventually construct a new theory. The results are usually of an indicative nature as more data needs to be collected to test if the conclusions hold. The quantitative research paradigm has a very different approach. Scholars using this method start by formulating hypotheses and make use of a large data set to test if the hypotheses hold or should be rejected. The empirically constructed data sets require a lot of effort and are very time consuming. Statistical programs are often used in order examine the collected data.

For this research a quantitative approach is chosen. In order to draw objective conclusions based on the data set I statistically test hypotheses. The interviews that were taken have a quantitative nature as it mainly consists of multiple-choice questions. The hypotheses that are tested out of the relatively small data set will provide further understanding about entrepreneurs and the influence of an entrepreneurial role model, giving this research an indicative nature.

### 3.3    Research design

This paragraph will cover the sample, data collection, the data analysis and a description of the variables. It provides a clear understanding of the data set and the variables which are used in statistical analyses in chapter 4.

### 3.3.1         Sample

In 2008 interviews were held with young business owners identified by the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS). Part of the data was collected by the EIM an independent research and consultant organization which is part of Panteia and carries out policy research. As the question were in Dutch the criteria for the respondents was that they understood the Dutch language. Nascent entrepreneur were not taken into account for the questions that provided a detailed answer about the existing enterprise. For other more objective questions, for instance for the demographical variables they were taken into account. The focus of the survey was on whether the respondents were influenced by role models in setting up or deciding to set up their own firm. The role model can either be another entrepreneur or another business. The sample consist of interviews taken in two different moments in time. The first interviews were taken in 2008, reaching 240 entrepreneurs that all accepted to be contacted in a follow up survey, yet in that survey, one year later, only 159 could be reached, it appeared that 34 of the addresses were not usable. Nonetheless not all respondents were still active in setting up their own business at the end of 2009. Finally 129 participants that were owning or setting up their own business at the time the first interview were taken, were still active at the end of 2009. This final group was used in the analysis.

### 3.3.2         Data collection

All interviews were taken over the phone and typically lasted 40 minutes, ranging from 30 minutes to an hour. It is unique data especially collected for the purpose of gaining understanding about the impact of role models on entrepreneurs. The interview questions are displayed in Appendix A and some characteristics can be located in Chapter 4.1. Most questions are multiple choice questions, also some open questions were put in the

questionnaire, they were formed into dummy variables. All interviews were in Dutch and later translated into English.

### 3.3.3 Data analysis

The collected data set is analyzed using the static analyzing program SPSS (Statistical Package for the Social Sciences). This program is used in many scientific articles and considered as a solid analytical program. The data is analyzed as follows. Firstly descriptive analyses of the characteristics, determinants and consequences are provided in order to gain further understanding of the dependent and independent variables. Each variable is investigated by applying descriptive analyses in the form of correlation tables and cross tabulations. The literature has provided hypotheses which will be tested in the next chapter. The data set in analyzed using various regressions, I will use binary logistic regressions since the dependent variables are dichotomous. The initial model contains only the dependent and independent variables, later the control variables are inserted to see if the results still hold. Firstly the determinant variables are tested, subsequently the regression for the consequences of having a role models are run. The data is cross sectional and therefore no causation can be tested. Relations will be tested on 1%, 5% and 10% significance interval. The regressions were adherent to a co-linearity test (VIF), which in none of the cases displayed an outcome higher than 1,301. This indicates that no multi co-linearity has occurred.

### 3.4 Variables

The interviews contain various questions about how the respondents were influenced by their role model, the answers to these questions are formed into variables and used in the regressions. Appendix A displays which questions were asked and how the answers are transformed into dichotomous and categorical outcomes.

The determinant variables are firstly explained in order acquire a better understanding as to what the variables mean and why there were chosen. The dependent variable, the role model dummy, is dichotomous as you can either have or lack a role model. The same applies to variables such as gender, family as entrepreneur, motive to become your own boss and

fear of failure. This last one is chosen because literature suggests that a role model enhances self-efficacy, as stated before, this research tests if a form of self-efficacy (fear of failure) is an indicator of the presence of a role model. The "type of person variable" is divided in entrepreneurs that consider themselves as all-rounder or as specialist and is used as a control variable. The experience variable divides the entrepreneurs between those with more than 3 years of experience and those with less. Age is split in 6 categories, resulting in a deviant mean. The education dummy separates the group 'low education' (lower than university) and 'high education'. The industry variable is parted in 4 options, the primary sector, manufacturing industry, financial sector, and consumer orientated industry. This variable also has a different mean and is taken as control variable. The primary sector is the emitted variable and the other three were implemented in the regression. This is done in order to check if there is a difference between the primary sector and the other sectors. The first variable is related to innovation and measures the consequences on innovation, which is divided into product and process innovation. The first relates how many of the consumers consider the product as new, taken from the perspective of the entrepreneur. Process innovation divides the data into those entrepreneurs who use technologies that are known for more than 5 years, and those known less than 5 years. The employee dummy measures the amount of entrepreneurs with no employees or just 1, compared to those with more than one employee. A way to measure dedication, which can be increased in the presence of a role model, is working hours. The threshold is set on 40 hours a week, in order to turn the dummy positive. This approach was chosen because the use of dummies eliminates any outliers.

## 3.5        Summary

The data set contains interviews with 129 Dutch entrepreneurs, containing questions relating to how they are influenced by role models. The paradigm used in this research is a quantitative method. The variables used in this research are summarized in Appendix A. The descriptive analyses contain correlation tables and cross tabulations of the characteristics, determinants, and consequences of having a role model. This is followed by a more extensive research on the determinant and consequence variables, using a logistic binary regression. All tests are run using the statistical program SPSS.

# 4. Results

## 4.1 Introduction

Having clarified the introduction of the relevant topic, given an overview of the literature, and elaborating on the methodology used for this research, this chapter will provide the results of the statistical tests in order to provide an answer to the main research question. At first the descriptive analyses are displayed, this is done to provide a better understanding of the data set. Correlation tables are used to gain a first insight, followed by cross tabulations which are described into detail. The characteristics of the data set, possible determinants and the effects are described in this way. The hypotheses based on the literature will be tested using binary logistic regression analyses, in this section regressions are run in order to find results about the determinants and consequences of having a role model. Firstly the regression will be run without any control variables, secondly the control variables are inserted in the regression to see if the outcome holds. The results will be compared and discussed into more detail. Lastly this chapter will finish by giving a short summary and overview of the results.

## 4.2 Descriptive analysis

### 4.2.1 Characteristics

The data set contains answers from 129 entrepreneurs of which 37,2% actually have a role model. Not all questions refer to the determinants or consequences of having a role model. In this paragraph the general characteristics of the participants relating to role models are discussed using a frequency table displayed in table 1. The variables are not tested in any regressions, however they are relevant when drawing conclusions, and when discussing any limitations. It needs to be emphasized that this table refers to how the participants conceive their role model. This is followed by cross tabulations proving more information about gender, age, and education variables.

| Variable | Percentage |
|---|---|
| Interaction after start-up | 97,1 |
| Role model is Dutch | 91,4 |
| Role model is Entrepreneur | 88,6 |
| Positive example | 80,0 |
| Role model works fulltime | 74,3 |
| Respondent did not change business plan | 68,6 |
| Role model offered concrete opportunities | 62,9 |
| Role model uses newest technologies | 45,0 |
| Directly stimulate | 31,4 |
| Friends circle | 31,4 |
| Customers consider product as new | 22,9 |
| Role model has foreign customers | 20,0 |

Table 1: Characteristics about the data set

The first thing that stands out is the fact that almost all participants still interact with their role model after they started their own business, indicating a stable relationship with the role model. Gibson (2003) designates these role models as ''close'', since they provide vivid examples for their followers and remain available for any further assistance. Bandura (1986) mentions that available role models contribute more to individual learning and effectiveness. Shuval and Adler (1980) studied interaction between medical students and their teachers. Three basic patterns were identified: active identification (individual emulate the role model), active rejection, and inactive orientation (reinforcement of existing values). The most observed interaction was active identification.

As the most participants are Dutch entrepreneurs it is plausible that also their role models are Dutch entrepreneurs, yet this again shows that although a great example like Steve Jobs *can* reach many people, in this case he is rarely mentioned as a role model. The vast majority (80%) has a role model that sets a positive example. The results illustrate that 68,6% do not change their business plan, a reason to have a role model potentially lies in different aspects like motivation or other non practical elements of starting a business. Of the participants 62,9% confirmed that the role model offered concrete business opportunities, which points out the importance of networking. The results indicate that the role models are not very innovative as only 45% offers new technologies and 22,9% focuses on product innovation. Finally, the amount of foreign customers is very low as only 20% has any foreign customers implying that the ambition to expend and go abroad is scarce among the role models, this partially explains the interaction.

In addition to the frequency tables, the following cross tabulations will shine a light over the gender, age, and education variables. The results are followed by a short explanation and link to the literature. A short article by Wright et al (1997, pp. 3) concluded that ''knowing which characteristics students look for in their role model should help identify the physicians who may be most influential in medical student's career choice''. Variables that were considered important by the students were personality, clinical skills and teaching ability. This stresses the importance of section 4.2.1.

| Gender Role Model | Gender Respondent | | Total |
| | Female | Male | |
|---|---|---|---|
| Female | 6 | 1 | **7** |
| % within Gender Respondent | 30% | 6,7% | **20%** |
| Male | 14 | 14 | **28** |
| % within Gender Respondent | 70% | 93,3% | **80%** |
| Total | 20 | 15 | **35** |
| | 100% | 100% | **100%** |

Table 2: Gender Role model * Gender Respondent Cross tabulation

This table shows that 80% has a male role model, yet the 20 out of the 35 respondents are female. Most male respondents (93,3%) have a male role model and 70% of the female respondents also have male as role model. These results imply that there is a scarcity on female role models and male respondents have a profound preference for male role models. The importance of same-sex role models for female students have been emphasized by Erkut and Mokros (1984) and Stake and Noonan (1985). Having a cross-sex model relationship can bring forth negative implications, especially for female students. Goldstein (1979) identified several issues with cross-sex role models, the fear of sexual tension and stereotypical attitudes of the male toward the female's competence were observed. In line with this result, Gilbert et al. (1983) results show that male role models tend to negatively influence the female student's perceptions of her own competence as the relationship becomes less comfortable and more challenging. Another negative impact on cross-sex role model was found by Ehrhart and Sandler (1987) who reported that role innovating woman received negative feedback from male model, where female model were more supportive. The results of table 2 indicate that only 30% of the female respondents have a same-sex role model. Still terrain can be won for female role models in order to stimulate female entrepreneurs.

| Age Role model | Age Respondent | | Total |
|---|---|---|---|
| | *<40* | *> 40* | |
| < 40 | 8 | 3 | **11** |
| % within Age Respondent | 50% | 16,7% | **32,4%** |
| > 40 | 8 | 15 | **23** |
| % within Age Respondent | 50% | 83,3% | **67,6%** |
| Total | 16 | 18 | **34** |
| | 100% | 100% | **100%** |

Table 3: Age Role model * Age Respondent Cross tabulation

Table 3 indicates that entrepreneurs and role models with the same age category tend to be drawn to each other. Half of the 'younger' entrepreneurs have a 'young' role model, the total group displays that only 32,4% has a younger role model. Older individuals stick together as 83,3% of the older entrepreneurs have a role over 40 years old, compared to 67,6% when the role model dummy is not taken into account. On the psychosocial side this can be explained, because older entrepreneurs have a more stable self conception and thus less in need of a younger role model. However with the fast technological development of today, older individuals will need young role models to help them comprehend the complex technological adjustments (Coutu, 2000).

| Education Role model | Education Respondent | | Total |
|---|---|---|---|
| | *low* | *high* | |
| low | 15 | 2 | **17** |
| % within Education Respondent | 62,5% | 50% | **60,7%** |
| high | 9 | 2 | **11** |
| % within Education Respondent | 37,5% | 50% | **39,3%** |
| Total | 24 | 4 | **28** |
| | 100% | 100% | **100%** |

Table 4: Education Role model * Education Respondent Cross tabulation

Information about whether education is a determinant for having a role model is scarce, yet being more exposed to teachers and professors would incline more chance of having a role model. The influence of education and educational programs on entrepreneurship and self-efficacy are briefly described. Best practice entrepreneurial programs provide a way to stimulate entrepreneurship among students. It increases awareness and the self-efficacy of participants via social experience and interaction, allowing to observe entrepreneurial role

models. Kram (1983) and Shapiro and Sokol (1982) found that experiences with an educational program increases the perceived desirability of starting a business. In addition to this Shapiro (1975) suggests that prior work experience and the presence of a role model influences the attitude towards entrepreneurship. The educational programs also had an effect on the self-efficacy of the participants, which Shapiro's model considers to be central to intentions towards starting a business. Gasse (1985) first mentions the importance of primary and secondary school in directing more attention to role models and entrepreneurship, as it is believed that childhood and adolescence years are the ideal stage to start learning about these subjects. This tabulation provides an answer to the question: ''are entrepreneurs and role models of the same education level drawn to each other?''. For ''lower educated'' occurs slightly more as 62,5% have the same education level as their role model, yet the total percentage is 60,7% which is a marginal difference. Those with a ''high education'' (2 out of 4) are more drawn to each other as the total percentage is 39,3, however the data is in short supply. A research by Almquist and Angrist (1970) indicates that college women with career-orientated plans for the future were shown to have mothers with higher education serving as a role model. This is in line to the findings of table 4. Academic research by Bates (1995), Bowen and Hisrich (1986), and Robinson and Sexton (1994) found evidence implying that entrepreneurs have a higher education level than the general public. However, others find that education does not stimulate entrepreneurship as it prepares students to become employees and diminishes creativity (Timmons, 1994; Plaschka & Welsch, 1990). To draw any conclusions on this topic further research is required. The education variable will be used as a control variable in the binary regressions.

### 4.2.2 Determinant variables

The interviews that were taken contain questions about some potential determinants of having a role model. The first part of the research question relates to the variables that contribute to having a role model. In this paragraph these variables are explored using correlation tables and cross tabulations.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Independent** | | | | | | | | | | | |
| **1 Gender** | 1 | | | | | | | | | | |
| **2 Experience** | 0,142 | 1 | | | | | | | | | |
| **3 Family** | -0,132 | -0,079 | 1 | | | | | | | | |
| **4 Age** | 0,139 | -0,024 | 0,014 | 1 | | | | | | | |
| **5 Own boss** | 0,156 | 0,051 | 0,114 | -0,230* | 1 | | | | | | |
| **6 Fear of failure** | -0,136 | -0,030 | 0,012 | -0,047 | 0,114 | 1 | | | | | |
| **Control** | | | | | | | | | | | |
| **7 Type of person** | -0,210* | 0,197* | -0,135 | 0,065 | -0,153 | -0,086 | 1 | | | | |
| **8 Education** | -0,013 | 0,122 | 0,089 | 0,037 | 0,048 | 0,074 | -0,133 | 1 | | | |
| **9 Industry** | -0,130 | 0,201* | 0,103 | 0,120 | -0,069 | -0,123 | 0,249** | 0,072 | 1 | | |
| **10 Income** | 0,179 | 0,007 | 0,000 | -0,014 | -0,244* | -0,060 | -0,075 | 0,010 | 0,013 | 1 | |
| **Dependent** | | | | | | | | | | | |
| **11 Role Model** | -0,115 | -0,087 | -0,054 | -0,212* | 0,184 | 0,045 | 0,025 | -0,029 | -0,018 | -0,011 | 1 |
| **Mean** | 0,590 | 0,202 | 0,692 | 2,811 | 0,570 | 0,134 | 0,520 | 0,131 | 3,08 | 0,388 | 0,372 |
| **SD** | 0,493 | 0,403 | 0,464 | 0,988 | 0,498 | 0,341 | 0,502 | 0,339 | 0,840 | 0,489 | 0,485 |
| **N** | 161 | 124 | 120 | 159 | 102 | 157 | 128 | 160 | 154 | 116 | 129 |

* indicates significance at 10% level ** indicates significance at 5% level *** indicates significance at 1% level
Table 5: Correlation table determinants

This correlation table displays the coefficients between the variables that potentially determine if the respondent has a role model and the role model dummy (11). Also the mean, standard deviation (SD) and the number of respondents (N) that answered the related question are displayed in table 5. Gender is negatively correlated with the role model dummy, showing that females more frequently have role models is this data set. The less experienced entrepreneurs are also more drawn to a role model as the negative coefficient

of this variable signifies. Strangely table 5 indicates that having no family as an entrepreneur is correlated with the presence of a role model, no significant result was found. The age variable displays a significant outcome of -0,212 at a level of 10%. This indicates that younger entrepreneurs are more often accompanied by role models. Having the motive to become independent correlated with the role model dummy, results in a coefficient of 0,184 which is a non-significant effect. The entrepreneurs with fear of failure are also drawn to role models as table 5 finds a weak positive result of 0,045, also non-significant.

The control variables display no significant effects on the dependent variable. The N differs because not all respondents answered all questions. The mean of the dummy variables indicates the average in percentage, ranging from 0,339 to 0,502. I will now elaborate on the results of the cross tabulations of the determinant variables and the control variables.

*Cross Tabulations Determinants*

| Role model dummy | Gender Participant | | Total |
| --- | --- | --- | --- |
| | *Female* | *Male* | |
| 0 | 31 | 50 | **81** |
| % within Gender | 56,4% | 67,6% | **62,8%** |
| 1 | 24 | 24 | **48** |
| % within Gender | 43,6% | 32,4% | **37,2%** |
| Total | 55 | 74 | **129** |
| | 100% | 100% | **100%** |

Table 6: Role model dummy * Gender cross tabulation

Table 6 displays that relatively more females have role models, the 43,6% is higher than the total percentage of 37,2, showing that a potential determinant is being female. Overall more men took part on this research. The table does not display the gender of the role model, only that of the participant. This cross tabulation provides an insight on hypothesis 1 and shows that female entrepreneurs more frequently possess an entrepreneurial role model. To test if this determinant is significant related to the presence of a role model, a binary regression is run in the next section.

| Role model dummy | Experience as entrepreneur | | Total |
| --- | --- | --- | --- |
| | <3 years | ≥3 years | |
| 0 | 61 | 18 | **79** |
| % within Experience | 61,6% | 72% | **63,7%** |
| 1 | 38 | 7 | **45** |
| % within Experience | 38,4% | 28% | **36,3%** |
| Total | 99 | 25 | **124** |
| | 100% | 100% | **100%** |

Table 7: Role model dummy * Experience as entrepreneur cross tabulation

The experience dummy, coded 1 if a respondent has 3 or more years experience as an entrepreneur, shows that 72% have experience and no role model. This is relatively frequent as the total group displays a percentage of 63,7%. Those with less than 3 years of experience are more likely to have a role model relatively to the total group. This next section will provide an answer to whether experience is considered as a significant determinant for the presence of a role model.

| Role model dummy | Family as entrepreneur | | *Total* |
| --- | --- | --- | --- |
| | *no* | *yes* | |
| 0 | 22 | 54 | **76** |
| % within Family | 59,5% | 65,1% | **63,3%** |
| 1 | 15 | 29 | **44** |
| % within Family | 40,5% | 34,9% | **36,7%** |
| Total | 37 | 83 | **120** |
| | 100% | 100% | **100%** |

Table 8: Role model dummy * Family as entrepreneur cross tabulation

The literature suggests that having family as entrepreneur indicates that an entrepreneur has a role model, yet the data demonstrates otherwise. Participants with no family as entrepreneurs (40,5%) have slightly more role models than the total group (36,7%). This surprising result is also tested using binary regressions.

| Role model dummy | Age in six categories | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | *0-20* | *21-30* | *31-40* | *41-50* | *51-60* | *61-80* | |
| 0 | 0 | 4 | 20 | 33 | 19 | 4 | **80** |
| % within Age | 0,0% | 50% | 52,6% | 64,7% | 76% | 80% | **62,5%** |
| 1 | 1 | 4 | 18 | 18 | 6 | 1 | **48** |
| % within Age | 100% | 50% | 47,4% | 35,3% | 24% | 20% | **37,5%** |
| Total | 1 | 8 | 38 | 51 | 25 | 5 | **128** |
| | 100% | 100% | 100% | 100% | 100% | 100% | **100%** |

Table 9: Role model dummy * Age in six categories cross tabulation

The age divided in 6 categories suggests that young participants are more likely to have a role model. The first 3 categories all present a higher percentage than the total percentage of 37,5% for entrepreneurs with a role model. Kram (1985) found that more established, often older employees are less in need and also less attracted to role models, this table indicates that the same could apply for entrepreneurs.

| Role model dummy | Motive: becoming own boss | | Total |
|---|---|---|---|
| | *no* | *yes* | |
| 0 | 27 | 28 | **55** |
| % within Motive: becoming own boss | 73,0% | 54,9% | **62,5%** |
| 1 | 10 | 23 | **33** |
| % within Motive: becoming own boss | 27,0% | 45,1% | **37,5%** |
| Total | 37 | 51 | **88** |
| | 100% | 100% | **100%** |

Table 10: Role model dummy * Motive: becoming own boss cross tabulation

The most mentioned motive to becoming an entrepreneur was to become independent. Now I will test if this also has an influence on having a role model. The cross tabulation indicates a relatively great difference between the total group and those with the motive to becoming one's own boss.

| Role model dummy | Fear of failure | | Total |
|---|---|---|---|
| | *no* | *yes* | |
| 0 | 71 | 10 | **81** |
| % within Fear of failure | 65,1% | 58,8% | **64,3%** |
| 1 | 38 | 7 | **45** |
| % within Fear of failure | 34,9% | 41,2% | **35,7%** |
| Total | 109 | 17 | **126** |
| | 100% | 100% | **100%** |

Table 11: Role model dummy * Fear of failure cross tabulation

Fear of failure is usually negatively correlated with starting up an enterprise. The data set contains entrepreneurs that suffer from fear of failure, yet started their own business. This cross tabulation indicates that those with fear of failure seem more likely to having a role model as the 41,2% exceeds the 35,7%.

To provide more insight in the control variables a short description of each variable is provided below.

| Role model dummy | Type of person | | Total |
|---|---|---|---|
| | *All-rounder* | *Specialist* | |
| 0 | 40 | 41 | **81** |
| % within Type of person | 64,5% | 62,1% | **63,3%** |
| 1 | 22 | 25 | **47** |
| % within Type of person | 35,5% | 37,9% | **36,7%** |
| Total | 62 | 66 | **128** |
| | 100% | 100% | **100%** |

Table 12: Role model dummy * Type of person cross tabulation

The cross tabulation shows that more people with a role model tend to be specialists, yet this table displays that the difference is marginal. No real conclusions or speculation can be drawn as the percentage of role models are very close to the total percentage. This variable is used as a control variable in the regression.

| | Education Respondent | | |
|---|---|---|---|
| Role model dummy | *low* | *high* | *Total* |
| 0 | 71 | 10 | **81** |
| % within Education | 62,3% | 66,7% | **62,8%** |
| 1 | 43 | 5 | **48** |
| % within Education | 37,7% | 33,3% | **37,2%** |
| Total | 114 | 15 | **129** |
| | 100% | 100% | **100%** |

Table 13: Role model dummy * Education cross tabulation

This cross tabulation indicates that having a role model is most likely not influenced by the level of education as the percentages do not differ very much. Results have indicated that people tend to focus on role models with the same level of education, yet the level of education is very unlikely to be a determinant factor.

| | Industry Sector | | | | |
|---|---|---|---|---|---|
| Role model dummy | *Primary* | *Manufacturing* | *Financial* | *Consumer* | *Total* |
| 0 | 1 | 17 | 25 | 31 | **73** |
| % within Age | 33,3% | 65,4% | 61% | 62% | **61%** |
| 1 | 2 | 9 | 19 | 19 | **47** |
| % within Age | 66,7% | 34,6% | 39% | 38% | **38%** |
| Total | 3 | 26 | 41 | 50 | **120** |
| | 100% | 100% | 100% | 100% | **100%** |

Table 14: Role model dummy * Industry cross tabulation

The industry variable seems not to differ for the role model group, compared to the total group, except for the primary sector, but the difference in percentages is diminutive. This variable is taken as a control variable and implemented in the regressions.

| | Role Model Dummy | | |
|---|---|---|---|
| Income dummy | *0* | *1* | *Total* |
| Low – Medium | 45 | 26 | **71** |
| % within Role Model | 60,8% | 61,9% | **61,1%** |
| High | 29 | 16 | **45** |
| % within Role Model | 39,2% | 38,1% | **38,8%** |
| Total | 74 | 42 | **116** |
| | 100% | 100% | **100%** |

Table 15: Income dummy* Role model dummy cross tabulation

The fact that a participant has a role model leads to no real difference in comparison to the total group of participants when income is taken into consideration. The cross tabulation also indicates that having a role model does not lead to either a high or low income. The

percentage of the total group is approximately similar to that of the group with or without a role model.

### 4.2.3  Consequences variables

What does it mean to have a role model? To what extent is a participant really influenced by their role model and what are the consequences for the participants. This chapter will elaborate on these questions by providing a correlation table and cross tabulations. In the next chapter more extensive regressions are run in order to find an answer to the hypotheses formed in chapter 2.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dependent | | | | | | | | | | | |
| **1 Product Innovation** | 1 | | | | | | | | | | |
| **2.Process Innovation** | 0,341* | 1 | | | | | | | | | |
| **3.Employees** | 0,073 | 0,241* | 1 | | | | | | | | |
| **4.Dedication** | -0,118 | 0,060 | 0,278* | 1 | | | | | | | |
| Control: | | | | | | | | | | | |
| **5.Age** | 0,179 | 0,109 | -0,063 | -0,110 | 1 | | | | | | |
| **6.Experience** | 0,017 | 0,119 | 0,152 | 0,008 | -0,024 | 1 | | | | | |
| **7.Gender** | 0,003 | 0,196* | 0,012 | 0,312* | 0,139 | 0,142 | 1 | | | | |
| **8.Education** | 0,115 | 0,158 | 0,162 | -0,032 | 0,037 | 0,122 | -0,013 | 1 | | | |
| **9.Industry** | 0,174 | 0,051 | 0,039 | -0,085 | 0,050 | 0,202* | -0,183* | 0,123 | 1 | | |
| **10 Income** | -0,056 | 0,028 | 0,061 | 0,023 | -0,014 | 0,007 | 0,179 | 0,010 | 0,013 | 1 | |
| Independent | | | | | | | | | | | |
| **11 Role Model** | 0,158 | 0,123 | 0,105 | 0,121 | -0,212 | -0,087 | -0,115 | -0,029 | -0,52 | -0,011 | 1 |
| **Mean** | 0,413 | 0,839 | 0,281 | 0,353 | 2,811 | 0,202 | 0,590 | 0,131 | 3,080 | 0,388 | 0,372 |
| **SD** | 0,495 | 0,369 | 0,451 | 0,480 | 0,989 | 0,403 | 0,493 | 0,339 | 0,840 | 0,489 | 0,485 |
| **N** | 121 | 118 | 121 | 122 | 159 | 124 | 161 | 160 | 154 | 116 | 129 |

\* indicates significance at 10% level \*\* indicates significance at 5% level \*\*\* indicates significance at 1% level
Table 16: Correlation table consequences

This correlation table displays potential consequences of having a role model. No distinct conclusions between the dependent and independent variables can yet be made, therefore at a later stage regression are run. This table provides solely a first insight to gain a better perception of the situation. The two indicators of innovation –product and process- both positively correlate with the independent variable role model. This is a first sign that having a

role model can lead to more innovation. The employee variable measures if the presence of a role model leads to 2 or more employees on the payroll. Table 16 shows an outcome of 0,105 for this correlation. The final dependent variable is dedication which measures the amount of working hours spent on the business. A positive relationship between dedication and the presence of a role model is displayed in table 16. The dependent variables and the role model dummy show no significant results. The control variables neither indicate any significant correlation with the role model dummy. However a noteworthy remark is the significant relationship between gender and process Innovation, indicating that males are more likely to innovate their process. Followed by the significant relationship between gender and dedication, which signals that male entrepreneurs spent more time on their enterprise. Again the mean, standard deviation and number of respondents are displayed in the final three rows. The correlation table is followed by the results of the cross tabulations, which are described below.

*Cross Tabulations Consequences*

| Product Innovation | Role Model Dummy | | Total |
|---|---|---|---|
| | *0* | *1* | *Total* |
| 0 | 48 | 23 | **71** |
| % within Role Model | 64,9% | 48,9% | **58,7%** |
| 1 | 26 | 24 | **50** |
| % within Role Model | 35,1% | 51,1% | **41,3%** |
| Total | 74 | 47 | **121** |
| | 100% | 100% | **100%** |

Table 17: Product Innovation* Role model dummy cross tabulation

As stated before the innovation variable is divided in product and process innovation, firstly the product innovation is considered. Respondents with a role model tend to be more innovative because more customers conceive their product as new (Appendix A). There is almost a 10% difference between respondents with a role model being innovative compared to the total group. The result are in line with hypothesis 7, yet no conclusion can yet be drawn.

| Process Innovation | Role Model Dummy | | Total |
|---|---|---|---|
| | *0* | *1* | |
| >5 years | 63 | 36 | **99** |
| % within Role Model | 87,5% | 78,3% | **83,9%** |
| 0-5 years | 9 | 10 | **19** |
| % within Role Model | 12,5% | 21,7% | **16,1%** |
| Total | 72 | 46 | **118** |
| | 100% | 100% | **100%** |

Table 18: Process innovation* Role model dummy cross tabulation

The second measure for innovativeness is process innovation. The results from table 18 point out that entrepreneurs with a role model and focus on process innovation account for 21,7%. This is higher than the 16,1% of the total entrepreneurs, not taking the role model dummy into account. This result offers a first insight and the regression will test if this effect is due to the presence of a role model.

| Employees | Role Model Dummy | | Total |
|---|---|---|---|
| | *0* | *1* | |
| ≤ 1 Employees | 56 | 31 | **87** |
| % within Role Model | 75,7% | 66% | **71,9%** |
| >1 Employees | 18 | 16 | **34** |
| % within Role Model | 24,3% | 34% | **28,1%** |
| Total | 74 | 47 | **121** |
| | 100% | 100% | **100%** |

Table 19: Employees* Role model dummy cross tabulation

Cross tabulation 19 shows that having a role model can be an indication of having more than one employee, the 10 percent difference in relation to the total group is relatively high. The employee dummy is coded zero if the entrepreneur has no or one employee, a 1 indicates that the entrepreneur has two employees or more. In this research, having more than one employee is taken as a potential consequence of having a role model.

| Dedication | Role Model Dummy | | Total |
|---|---|---|---|
| | 0 | 1 | |
| <40 hours a week | 52 | 27 | 79 |
| % within Role Model | 69,3% | 57,4% | 64,8% |
| ≥40 hours a week | 23 | 20 | 43 |
| % within Role Model | 30,7% | 42,6% | 35,2% |
| Total | 75 | 47 | 122 |
| | 100% | 100% | 100% |

Table 20: Dedication* Role model dummy cross tabulation

Dedication is measured in the amount of working hours, with the frontier at 40 hours. Respondents with a role model relatively spend more time on their business. This is indicated by the difference between the 42,6% and the 35,2%. This table provides a first insight to the question whether the presence of a role models leads to more dedication of an entrepreneur.

## 4.3    Regression analyses

In this section the results of the binary regression analyses are shown. Two regression tables are created to display the determinants and consequences of having a role model. The first regression table contains 6 different independent determinant variables with the role model dummy as dichotomous dependent variable. The determinant variables are inserted at first, then the control variables are implemented into the model. Section 4.3.2 will provide the second table which includes several regression analyses relating to the impact of the presence of a role model. The independent variable is related to the potential consequences, and the dependent variable refers to the role model dummy. Four potential effects from having a role model are tested separately, and afterwards with the implementation of the control variables. Although the quantity of the data is limited, this section will strive to find any significant results in order to test the main research question, what the determinants for having a role model are and what the impact is on an entrepreneur. Results from the regression analyses will be compared and the impact described. The relationship will be measured on a 10%, 5% and 1% significance level.

### 4.3.1 Determinant variables

The following table shows the results of the binary logistic regressions which are run in order to examine what factors encourage entrepreneurs to having a role model. The first model contains the independent variables, followed by a model which tests for the control variables as well. This section will elaborate on the findings of table 21.

Dependent variable: Role Model Dummy

| Determinants | Initial Model | Control variables included |
|---|---|---|
| **Independent variables** | | |
| 1 Gender | -0,336 (0,602) | -0,026 (0,731) |
| 2 Experience | -0,359 (0,807) | -1,846 (1,344) |
| 3 Family as Entrepreneur | -0,718 (0,603) | -0,544 (0,768) |
| 4 Age Category | -0,685 ** (0,322) | -1,203 *** (0,462) |
| 5 Motive: own boss | 0,811 (0,601) | 0,764 (0,725) |
| 6 Fear of failure | 0,594 (0,647) | -0,378 (0,853) |
| **Control Variables** | | |
| All-rounder/Specialist | | 0,435 (0,715) |
| Education | | -1,619 (1,234) |
| Industry | | -0,182 (0,389) |
| Income | | -0,304 (0,720) |
| Constant | 1,255 (1,073) | 3,028 (2,068) |
| **Nagelkerke R Square** | 0,206 | 0,333 |

* indicates significance at 10% level ** indicates significance at 5% level  *** indicates significance at 1% level

Table 21: Binary logistic regression of determinants

The regression analyses of the determinant variables give information about in what way, and to what extent having a role model is determined by other factors. The results of the initial model are in line with what was found when using the descriptive analysis.

The gender variable indicates that being female influences having a role model in a positive way, as the dummy is coded zero for a female participant and the coefficient is negative. However no significant correlation is observed which means that gender does is not associated with the presence of a role model. When the control variables are inserted, the coefficient remains negative, and again no significant result is found for this variable. The experience variable indicates no significant outcome. This means that there is no relation between experience and having an entrepreneurial role model. When the control variables are added to the initial model the coefficient still yields no significant relationship for the experience dummy. The assumption that less experienced entrepreneurs have a role model on a more frequent basis is rejected. A potential explanation for this result is that due to the lack of experience an entrepreneur needs to spend all the available time on his or her enterprise leaving less time to socialize and meet potential role models. More research is needed to explain this result.

Having family as an entrepreneur is expected to positively correlate with having a role model. The result of the regression analysis provides a different outcome, as the coefficient is negative and stays negative with the inclusion of the control variables. Moreover no significant correlation is observed and I can thus conclude that having a family as an entrepreneur is not associated with the presence of an entrepreneurial role model. This result implies that entrepreneurs seldom mention their entrepreneurial family as role models, meaning that they potentially appoint role models outside the family. This result can be explained by social learning theory implying that the entrepreneur is in need of finding specific attributes in a role model which may not be met by the family.

Table 21 suggests that having a role model is more likely at a young age. The results display a significant coefficient of -0,685 at a 5% significance level. With a small data set this result is very strong and implies that a determinant for having a role model is age. When the control variables are included the coefficient becomes -1,203, which entails a stronger relationship and even more the relationship is now significant at a 1% interval level. A potential determinant for having a role model is the motive to becoming your own boss. The outcome of table 21 yields a strong positive relationship (0,811) for these two variables, yet no

significant result is observed. With adding the control variables little changes occur, meaning that no relation is noticed. This can potentially be explained by the fact this motive has more impact on becoming an entrepreneur than having a role model. In some cases new employees consider their superior as a role model, but in time they are convinced of the fact they may do a better job and feel the need to become independent and do so.

As entrepreneurs deal with fail of failure the need to finding a role model may become greater, this suspicion was hypothesized in chapter 2. The results of table 21 display a positive coefficient in the initial model. However the result is not significant, meaning that there is no correlation. When the control variables are added the coefficient becomes negative, implying that the control variables play a great role in explaining the initial relationship. Again there is no significant outcome. Further research needs to be done in order to draw any conclusion in this topic.

The final row of table 21 displays the Nagelkerke $R^2$ which explains the goodness of fit of the model. The initial model finds an $R^2$ of 0,206 is rather high as it measures for several variables. With the inclusion of the control variables the $R^2$ becomes 0,333 as more variables are included the goodness of fit grows. In short the only variable that determines an entrepreneur to be drawn to a role model is age, more specifically: being 'young'.

### 4.3.2 Consequences variables

Having identified the determinant variables for the presence of a role model, I now focus on the consequences of having a role model. Javidan et al. (1995) discuss that most research about role models centers around who individuals chose as a role model, rather than whether having a role models has any effects. This research tries to fill the gap that has emerged in the literature over the years, with the aim to provide policy makers with a new instrument -a role model- to obtain their goals. In order to identify the effects of what happens to entrepreneurs with a role model I run multiple logistic binary regressions, as discussed in chapter 3. The initial model contains solely the independent role model variable, followed by a model including the control variables. This method is chosen to test if the conclusion of the initial model holds when control variables are added, this way the influence of the control variables are tested.

| Dependent variable / Independent variable | 7a Product Innovation Initial | 7b Product Innovation With Control | 8a Process Innovation Initial | 8b Process Innovation With control |
|---|---|---|---|---|
| **Role model** | 0,656 * (0,380) | 1,287 *** (0,500) | 0,665 (0,505) | 1,581 ** (0,714) |
| **Control Variables** | | | | |
| **Age** | | 0,588 ** (0,259) | | 0,586 (0,373) |
| **Experience** | | 0,381 (0,631) | | 1,117 (0,747) |
| **Gender** | | 0,048 (0,468) | | 2,287 ** (0,957) |
| **Education** | | 0,827 (0,696) | | 1,343 (0,820) |
| **Industry** | | 0,485* (0,267) | | 0,324 (0,407) |
| **Income** | | -0,440 (0,458) | | 0,095 (0,654) |
| **Constant** | -0,613 ** (0,244) | -3,992*** (1,358) | 1,946 (0,356) | -7,337 *** (2,287) |
| **Nagelkerke $R^2$** | 0,033 | 0,177 | 0,025 | 0,305 |

* indicates significance at 10% level ** indicates significance at 5% level *** indicates significance at 1% level

| Dependent variable / Independent variable | 9a Employees Initial | 9b Employees With Control | 10a Dedication Initial | 10b Dedication With Control |
|---|---|---|---|---|
| **Role model dummy** | 0,474 (0,410) | 0,985 ** (0,489) | 0,516 (0,387) | 0,569 (0,476) |
| **Control Variables** | | | | |
| **Age** | | 0,040 (0,255) | | -0,273 (0,241) |
| **Experience** | | 1,505 ** (0,625) | | 0,026 (0,606) |
| **Gender** | | -0,150 (0,496) | | 1,431*** (0,497) |
| **Education** | | 0,835 (0,665) | | -0,390 (0,675) |
| **Industry** | | -0,035 (0,282) | | -0,177 (0,269) |
| **Income** | | 0,306 (0,282) | | -0,108 (0,448) |
| **Constant** | 1,135 *** (0,271) | -1,655 (1,294) | -0,816 *** (0,250) | -1,079 (0,920) |
| **Nagelkerke $R^2$** | 0,016 | 0,162 | 0,020 | 0,165 |

* indicates significance at 10% level ** indicates significance at 5% level *** indicates significance at 1% level

Table 22: Binary regression of the consequences

Table 22 shows the results of 8 models which will be transcribed in this section. Starting with the effects of having a role model on product innovation. The initial model (7a) indicates that possessing a role model has a positive significant influence on product innovation. The coefficient is 0,656 and is significant at a 10% interval level. With the inclusion of the control variables the result still holds, the relationship becomes even stronger (1,287), and the result is now significant at a 1% level. Process innovation is initially not significantly related to the role model variable, yet a positive coefficient is observed. This relation turns significant when the control variables are implemented and displays a value of 1,581 which is significant at a 5% level, and has a much greater impact. The employee variable tests if the acquiring of a role model leads to hiring more than one employee. The first model on the employee dummy indicates a positive, yet non-significant outcome. Model 9b contains the control variables as well and finds a significant result at a 5% level with a coefficient of 0,985. Finally the dedication variable is examined, testing if this is a potential effect of having a role model. The outcome of the initial regression displays no significant result, even when the control variables are inserted, no significant correlation is monitored. This means that dedication is not influenced by the presence of a role model.

Having discussed the results of the dependent variable, I now shift focus to the control variables in order to elaborate on any interesting findings. The control variable age seems to have a significant positive effect on product innovation, this is surprising as it is generally expected that younger entrepreneurs are innovative, yet sometimes capital needs to build up in order to launch a new product which makes this result more plausible. Product innovation also depends on various sectors, as the industry control variable was also found to have a significant relationship. The gender control variable significantly correlates with two independent variables. Firstly a negative relationship is observed for process innovation, suggesting that female entrepreneurs are more likely to innovate their process. The other variable that significantly correlates with gender is dedication, here a strong positive coefficient of 1,431 is detected, which is significant at a 1% level. Finally table 22 shows that the experience has a positive significant effect on having more than one employee. With the inclusion of the control variable the Nagelkerke R-square increases because inserting more variables leads to a greater explanatory power as the goodness of fit increases.

In order to find out which variable is influenced and to what extent, figure 3 provides the results of the odds ratio's. This is needed to complete this research, as final conclusions are formulated.

| Variables | Odds ration |
|---|---|
| **Determinant** | |
| Age | 0,300 |
| **Consequence** | |
| Product Innovation | 3,623 |
| Process Innovation | 4,860 |
| Employee (>1) | 2,677 |

Figure 3: The Odds ratio's

The influence of the determinant variable age is 0,300, which means that younger entrepreneurs are three times more likely to have a role model than older entrepreneurs. The general notion that younger entrepreneurs are accompanied by entrepreneurial role model does apply. As mentioned before, having a role model leads to more innovation of the entrepreneur. Figure 3 indicates that process innovation is more likely to occur that product innovation. Finally entrepreneurs with a role model are 2,677 times more likely to having 2 or more employees than entrepreneurs without a role model.

## 4.4    Summary

This chapter covered statistical tests on the collected data for this research. After the introduction I described the descriptive analyses of the characteristics, determinants and the consequences of having a role model. Remarkably 97,1% still interacts with their role model after having started their business, also I found that although 80% have a male role model, 20 out of 35 entrepreneurs are female. The characteristic section shows that role models and entrepreneurs with the same education level and age are drawn to each other. The results of the logistic binary regressions indicated that a determinant for having an entrepreneurial role model is age, implying that being young increases the likelihood of

having a role model. The regression analyses of testing the consequences found that having a role model leads to more focus on product innovation. When the control variables were inserted in the equation I found that this result holds and in addition process innovation, and having more than one employee were significantly correlated with the role model dummy.

# 5.    Conclusion

## 5.1    Introduction

In this section conclusions are drawn from the results found in the previous section. The results are compared to what was found in the literature segment. Each hypothesis is described and discussed in order to provide an answer to the main research question concerning the determinants and consequences of having a role model. The conclusions of this research are summarized in figure 4. Furthermore this chapter will elaborate on the limitations, offering a critical view on this research. This thesis will finalize with recommendations about possible directions for further research based on the results of this study.

## 5.2    Conclusion

Role models have received some attention in the literature, still a lot more research needs to be done. The main essence has been stressed by various scholars. However, literature that places role models in the entrepreneurial context is non-existent. This thesis makes a contribution to the scarce existing literature and tries to fill the gap by elaborating on entrepreneurial role models. The data set contains interviews with young business owners of which some have an entrepreneur as a role model in the form of another entrepreneur or business. The results of chapter 4 are discussed in order to provide an answer to the main research question: ''What are the determinant variables and the observed consequences of Dutch entrepreneurs for having an entrepreneurial role model?''. To facilitate further insight I concentrate on the cause and effects of entrepreneurial role models. First I present the conclusions of the 6 hypotheses that examine the potential determinants of having a role model. Secondly, I conclude if the presence of a role model has any further impact on the behavior of an entrepreneur, which is tested in 4 hypotheses. By understanding what factors contribute to the presence of a role model, this effective way is found to stimulate personal factors that contribute to the growth of an entrepreneurial venture, which in the long run

stimulates the economy. Two major conclusion emerge from this research,. Firstly, I find that age plays a significant part in determining if an entrepreneur has a role model. Secondly the results indicate that having a role model contributes to innovativeness and amount of employees of an entrepreneur. Figure 3 indicates that the odds ratio is highest for the process innovation variable. I will now elaborate on each of the variables that were implemented in this research.

Results of hypothesis 1 indicate that gender has no effect on the occurrence of a role model. This result is surprising because from the literature I suggested that female individuals were more drawn to a role model, however no significant result was found in the regressions. Women entrepreneurship is conceived as a nontraditional profession, therefore the results of this research is not in line with the findings of Lunneborg (1982) who concluded that nontraditional professional women reported more support and encouragement from significant others than women with more traditional aspirations. The second hypothesis tests if those who have experience as an entrepreneur more often have a role model. Again no significant relationship resulted from the regression analyses. The most surprising result of the analyses was the fact that having entrepreneurs in the family did not mean that more role models were observed, as no significant relationship was found, and the hypothesis rejected. Hypothesis 4, which tests if being a young entrepreneurs has a positive relationship on the presence of a role model, holds. This significant result implies that younger entrepreneurs are more often in the presence of a role model. The literature already suggested this result and in addition to this Nicholson (1984) mentions the influence of time, stating that role models potentially outlive their usefulness, as the learning curves stabilizes. Implying that older entrepreneur more often lack a role model. In time people experience a personal change and eventually they can shift to new role models (Van Maanen, 1980). This research finds that in time entrepreneurs can even drop their role model, which is in line with the results of this research, indicating that older entrepreneurs less frequently have a role model. Older entrepreneurs have more life experience and can be more aware of the downsides of having an entrepreneurial role model. In addition to this they may be more able to put things in perspective, as they become more responsible and risk averse. Younger entrepreneurs more frequently have entrepreneurs as a role model which can be explained by the fact that they can be more ambitious and admire other entrepreneurs that already made a career.

The need to become independent is not significantly correlated with the presence of a role model. Implying that this is not considered as a determinant for the occurrence of role models. The data set contains entrepreneurs that still suffer from fear of failure, the sixth hypothesis implies that this could result in the presence of a role model, yet this hypothesis is rejected as no significant result is observed.

Having elaborated on the determinants of having a role model I will now discuss the four remaining variables that can result from having a role model. Literature lacked in providing evidence of the impact a role model has on the innovativeness of an entrepreneur. Surprisingly the results indicate that having a role model has a strong significant relationship on being product innovative. Role models and product innovation are often combined in marketing campaigns, as celebrities often wear the newest trends in fashion which is displayed in multiple magazines. This relationship seems to also occur for entrepreneurs, suggesting that they may emulate their innovative entrepreneurial role model. However section 4.2.1 showed that only 22,9% of the role models are product innovative. The result therefore has to be explained by the fact that having an interacting role model can provide new ideas (and extends an existing network), leading to more product innovation. Further investigation on this relationship is needed to fully understand the impact.

Process innovation is also stimulated for entrepreneurs with a role model, as it shows a significant positive coefficient. An explanation could be that the entrepreneurs emulate their role model, or are inspired which leads to more process innovation. Section 4.2.1 in this case shows that only 45% of the role models were process innovative, suggesting that emulation is hard. There must be another explanation for the fact that the entrepreneurs with a role model using technologies that exists less than 3 years. The role model keep the entrepreneur up to date as they exchange information, given the fact that 97,1% still interacts with their role model.

An indicator of success is the dummy for having more than one employee (as the first is usually the companion). The hypothesis suggested that entrepreneurs with a role model more frequently have two employees or more. This hypothesis holds at a significance interval of 5%. Entrepreneurs are more likely to be drawn to successful entrepreneurial role models, this may trigger them to become more ambitious themselves, leading to more employees in the long run. A role model can also provide practical support when hiring an employee, by mentioning what characteristics are considered important when hiring

someone. The final hypothesis states that entrepreneurs with a role model are more committed to their enterprise and will spend more time on it. This hypothesis is rejected based on this research. The outcome was fairly surprising, yet no difference is made between effective time and wasted time. It could be that entrepreneurs with a role model are more effective as they learn specific skills, yet again more research is needed on this topic. Figure 4 displays the significant results in an synoptic way.
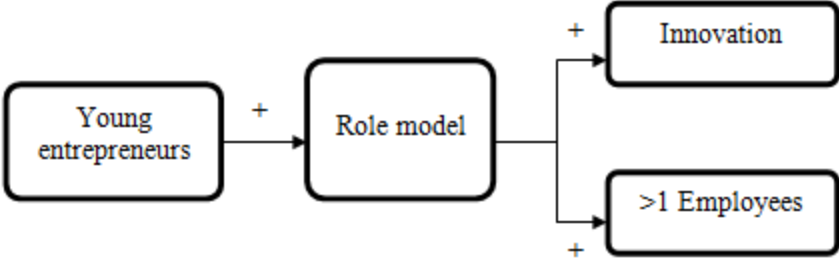


Figure 4: Conclusion of this research

I hope that with this research role models will become more aware of their potential impact on entrepreneurs and become more actively involved in stimulating other entrepreneurs to start up a business. In order to get entrepreneurs and role models to interact social meetings and entrepreneurial gatherings should be stimulated. Universities can play a role in this as they can influence nascent entrepreneurs by provide educational programs or inviting inspirational entrepreneurs to conferences, that potentially function as entrepreneurial role models. Policy makers can use the results of this thesis to increase the amount of role models by focusing on young entrepreneurs. Innovation and the amount of employees can be stimulated by increasing the amount of role models, as the association is significant.

## 5.3 Limitations

This study has taken the initiative of finding a range of variables that are associated with entrepreneurial role models, however the variables used in the research are the main limitation of this thesis. The information is simplified as dummies are created. The

participating entrepreneurs had to answer to multiple choice questions, which do not always include the best possible answer. An example of this is the variable "fear of failure" which in some cases cannot be answered with a dummy variable as it depends very much on the specific situation. In this thesis interaction refers to face-to-face interaction, yet with the technological opportunities of today this is outdated. The amount of variables is also limited, other relevant factors that potentially effect from having a role model are not taken into account. Although the interviews were taken at two points in time, no longitude panel data could be constructed, as the question about role models relate to the past and the questions asked in the second run contain new questions. This brings me to another limitation, that of causality. It remains uncertain if role models make people more innovative or innovation drives people to having a role model. This thesis does confirm that a significant relationship exists. With a panel data the influence of time can be measured, as sometimes role models can be forsaken, as e.g. most golfers did not consider Tiger Woods in time as a role model after his illegitimately affairs. Furthermore the data set is limited, not only in quantity but also in diversity. Only Dutch entrepreneurs are taken into account, a more diversified sample will deliver results that can be better generalized across countries or professions.

## 5.4    Further research

One of the main conclusions of this research is that the presence of a role model leads to more innovation of an entrepreneur. However, as mentioned before, it is interesting to see what the underlying cause for this occurrence is. Further research should investigate if the entrepreneurs emulate their role model or are inspired and therefore become more innovative. In other words it is interesting to try to find an answer relating to the question how role models stimulate the behavior of entrepreneurs. In addition to this the effects of being a role model should be further investigated, if an entrepreneur becomes a role model does this lead to him or her to more responsible behavior? The data set contains entrepreneurs that are very close related to the role models, as almost all of them still interact with their role model. In order to test the impact of a "super star" which reaches millions of people through popular media more research needs to be conducted.

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# 7. Appendices

Appendix A contains the question that were asked to entrepreneurs (respondents) who considered another entrepreneur or another business as a role model.

| Variable name | Description | Question |
| --- | --- | --- |
| Role Model | 0 = no role model<br>1= role model | Respondent has other entrepreneur or business as role model |
| **Determinants** | | |
| 1 Gender | 0 = Female<br>1 = Male | Is the respondent female or male? |
| 2 Experience as entrepreneur | 0 = less than 3 years of experience as entrepreneur<br>1=More than 3 years of experience as entrepreneur | How many years of experience does the respondent has as entrepreneur? |
| 3 Family as entrepreneur | 0 = no family as entrepreneur<br>1= family as entrepreneur | Does the respondent have any family as entrepreneur? |
| 4 Age | 0 = '0-20'  2= '31-40' 4= '51-60'<br>1= '21-30' 3= '41-50' 5= 61-99' | What is the respondents age? |
| 5 Motive: being own boss | 0 = no<br>1 = yes | What is the motive to start-up a business? |
| 6 Fear of failure | 0 =  no fear of failure<br>1 = fear of failure | Does the respondent suffer from fear of failure? |
| **Consequences** | | |
| 7 Product innovation | 0 = none of the customers<br>1= some to all customers | Will none, some or all of your customers consider the respondents product as new? |
| 8 Process innovation | 0= longer than 5 years<br>1 = between 0 and 5 years | How long are the technologies or methods for the respondents product or service available? |
| 9 Employees | 0 = 0 or 1 employee<br>1= more than 1 employee | How many employees does the respondent have? |
| 10 Dedication | 0 = less than 40 hours a week<br>1= more than 40 hours a week | How many hours a week did the respondent on average spent on their own business. |
| **Control** | | |
| Income | 0 = low – medium income; less than 50.000 euro<br>1= high income; around 50.000 euro and more | In what category falls the respondents income? |
| Type of person | 0 = All rounder<br>1 = Specialist | Does respondent sees himself as all rounder or a specialist? |
| Education | 0 = Low education (lower than University)<br>1= High education (University) | What is the higher completed study of the respondent? |
| Industry | 1= Primary sector<br>2 = Manufacturing<br>3= Financial<br>4=Consumer | In what sector is the respondents business located? |