Family and Entrepreneurship - how family traits affect lifetime entrepreneurial success

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Abstract

This paper explores the impact of family traits on entrepreneurship. I analyze data from the Netherlands Longitudinal Lifecourse Study (NELLS) 2009 wave. I use propensity score matching to examine the effects of parental divorce, marital status, educational level, and employment status on entrepreneurship. The results reveal that family traits significantly influence entrepreneurial outcomes. Parental togetherness, higher parental education, and maternal employment positively affect entrepreneurship. At the same time, parental divorce and paternal entrepreneurial employment show no significant influence. The study suggests the importance of family traits in fostering entrepreneurship and calls for further research to explore the effects of parental divorce on entrepreneurial outcomes. These findings inform policymakers and practitioners in supporting entrepreneurial aspirations within families and society.

Contents

1   Introduction

Entrepreneurship is a dynamic and multifaceted phenomenon that drives innovation, economic growth, and societal transformation (Shane and Venkataraman, 2000). On the other hand, family traits encompass a wide range of attitudes, behaviors, values, and skills shared and exhibited within a family unit (Fox, 2005). They may play a vital role in shaping an individual's entrepreneurial aspirations and outcomes. However, how large and significant is that role? This paper explores the relationship between family traits and entrepreneurship. By examining the complex interplay of these factors, we can deepen our understanding of how family traits contribute to the entrepreneurial landscape, opening the door for targeted initiatives that encourage and support entrepreneurship within families and societies.

1.1   Background

Entrepreneurship is a multifaceted phenomenon characterized by creating, growing, and managing new ventures or innovative initiatives. It involves taking risks, identifying opportunities, mobilizing resources, and navigating uncertainties to achieve economic and social value. Entrepreneurship is a topic of great interest in various fields, such as business, economics, psychology, and sociology, because it drives innovation, economic growth, and social change (Shane and Venkataraman, 2000).

On the other hand, family traits are a wide range of characteristics and dynamics shared within a family. Attitudes, behaviors, values, and skills passed down from generation to generation can influence the experiences and development of family members. Genetic, environmental, and social factors, cultural norms, family values, and interpersonal dynamics influence family traits (Fox, 2005).

The influence of family traits on entrepreneurship has been a subject of research and exploration. An individual's perception of entrepreneurship and propensity to engage in entrepreneurial activities can be influenced by growing up in an entrepreneurial family and being exposed to entrepreneurial role models. Family support, both emotional and financial, can play a crucial role in facilitating entrepreneurial pursuits (Aldrich and Cliff, 2003).

Additionally, family traits can influence an individual's attitude towards risk-taking, work ethic, independence, and innovation, which are critical factors in entrepreneurial decision-making and success. Cultural values and fam-

ily norms likewise shape the perception of entrepreneurship within a family, with some families fostering an entrepreneurial mindset and others prioritizing stability and risk aversion (Cuervo, Ribeiro and Roig, 2007).

1.2 Research Question

This study aims to find out how family traits and entrepreneurship are linked. As well as how these shared traits, attitudes, behaviors, values, and skills affect people's entrepreneurial aspirations and outcomes. Specifically, this study explores how family traits influence the likelihood of engaging in entrepreneurial activities and subsequent success or failure. Therefore, the research question addressed in this study is:

How do different family traits affect the likelihood of entrepreneurial success?

By exploring this research question, this study aims to deepen our understanding of the role of family traits in shaping the entrepreneurial landscape. It seeks to shed light on how the presence or absence of certain family traits, such as parents' family, educational and employment status, impact individuals' influence on people's tendency to seek entrepreneurial ventures. Furthermore, the research will investigate whether family traits significantly influence entrepreneurial success, including income and firm size.

1.3 Contributions

This research makes several significant contributions to entrepreneurship and family studies. Firstly, it adds to the understanding of the influence of family traits on entrepreneurship by providing empirical evidence and insights into the relationship between these factors. By examining the effect of shared characteristics, attitudes, behaviors, values, and skills within a family unit on entrepreneurial outcomes, this study fills a gap in the existing literature, where Shane and Venkataraman (2000), Fox (2005) and Aldrich and Cliff (2003) among others, do not address this specific relationship.

Secondly, this research contributes to the entrepreneurial ecosystem by highlighting the importance of family environments in shaping individuals' entrepreneurial aspirations and outcomes. This study provides valuable information that can inform targeted initiatives and support systems designed

to nurture and encourage entrepreneurship within families by identifying the specific family traits that influence entrepreneurial engagement and success.

Practically, the study's findings have implications for policy initiatives, family counseling, and education on entrepreneurship. Understanding the effect of family traits on entrepreneurship can assist in developing educational programs that foster entrepreneurial mindsets and skills within families. It can also guide family counselors in supporting aspiring entrepreneurs, acknowledging the role of family dynamics in shaping entrepreneurial journeys. Moreover, policymakers can use these insights to design strategies that foster entrepreneurial ecosystems and leverage the strengths of family environments in promoting entrepreneurship.

This research uses data from the Netherlands Longitudinal Lifecourse Study (NELLS). The NELLS data set is a longitudinal survey that includes various questions about various aspects of the respondents' lives. The questions include information about the parental marital status and job characteristics. The first wave, collected in 2009, will be used in this research. Because the data set is an observational study, we obtain results by using propensity score matching to address any selection bias issues. Additionally, we conduct numerous robustness checks to validate the results and ensure their reliability.

The construction of the rest of this paper is as follows: The second chapter contains a literature review, providing an in-depth exploration of existing literature and studies. The third chapter describes the used data and methodology, from which the results follow in the fourth chapter. Lastly, in the fifth chapter, "Discussion and Conclusion," the findings from the previous chapters are analyzed, interpreted, and discussed. This section also provides the limitations of this research.

2 Literature Review

2.1 Existing Research

The existing literature on the effect of family on entrepreneurship has yielded valuable insights into the relationship between family dynamics and entrepreneurial outcomes. However, there needs to be more research explicitly focusing on the impact of family traits on the entrepreneurial aspirations and behavior of the next generation.

Several studies have examined the influence of family on entrepreneurship from a broader perspective. For example, Aldrich and Cliff (2003) emphasized the widespread influence of family on entrepreneurship, highlighting how family relationships, resources, and norms shape entrepreneurial decisions and outcomes. Similarly, Astrachan and Jaskiewicz (2008) explored the emotional aspects of family businesses and their impact on business valuation, emphasizing the role of love, loyalty, and commitment. Sharma, Chrisman, and Chua (2003) investigated succession planning in family businesses and identified the factors that influence the intention and behavior of family business owners.

In addition, Carr and Sequeira's (2007) and DeTienne and Chandler's (2004) 's studies have shown that factors like previous exposure to family businesses and the identification of opportunities influence entrepreneurial intentions and behaviors. However, these studies have yet to explicitly focus on the influence of parents' family, educational and employment status on the entrepreneurial aspirations and behavior of the next generation.

Despite the wealth of research on family entrepreneurship, there is limited empirical evidence and theoretical development concerning the specific impact of family traits on next-generation entrepreneurship. The literature still needs to explore the role of parents' family, educational and employment status.

2.2 Gap in and Contribution to Literature

Despite the significant body of research exploring the factors influencing entrepreneurship, there still is a notable gap in understanding the specific role of family traits in shaping the entrepreneurial outcomes of individuals, particularly in terms of their impact on the next generation.

This research aims to contribute to the existing literature on entrepreneur-

ship and family dynamics by addressing this gap. Where Carr and Sequeira (2007) and DeTienne and Chandler (2004), among others, do not address the specific relationship between family traits and the effect on entrepreneurship. By examining the impact of family traits, like parents' family, educational and employment status, in next-generation entrepreneurship, this study intends to shed light on the specific mechanisms through which these factors influence entrepreneurial outcomes.

Furthermore, this research seeks to contribute to the broader understanding of entrepreneurship by highlighting the significance of family dynamics and traits. It recognizes the potential influence of family factors as crucial determinants in shaping individuals' entrepreneurial mindsets, aspirations, and activities, extending beyond the traditional focus on personal traits and environmental factors.

Policymakers, educators, and practitioners involved in fostering an entrepreneurial ecosystem can benefit from the findings of this study. By identifying the specific family-related factors that impact next-generation entrepreneurship, this research can inform the development of targeted interventions, educational programs, and support systems to encourage and facilitate entrepreneurial aspirations and behaviors in individuals from diverse family backgrounds.

2.3   Hypotheses

This research is structured on the following hypotheses:

A vital definition that comes up in this hypotheses is "entrepreneurship." We define entrepreneurship as a person who works independently and not as an employee. In the questionnaire from the data set (see Appendix D, question A40), there is a question that contains these two answers. When the person answered the question that they work independently, we consider them as an entrepreneur. Later, we distinguish entrepreneurship's success based on wages and the company's size.

Hypothesis 1: Parental divorce affects child's entrepreneurship.

This hypothesis suggests parental divorce may impact a child's entrepreneurial aspirations and behavior. While numerous studies have explored the impact of divorce on various aspects of a child's development, including psychological well-being, educational outcomes, and social relationships, more research

needs to examine its influence on entrepreneurial aspirations and behavior.

The label "Parental divorce" is acquired when the respondent answers question C6 (see Appendix D) that his or her parents are divorced. It implies that the respondent's parents are divorced and not together. Question C7 (see Appendix D) asks at what age the respondent's parents got divorced. Here we can distinguish the effect of divorced parents based on age.

Amato and Keith (1991) found that children from divorced families may experience lower levels of educational attainment and face challenges in forming stable relationships later in life. These findings highlight the potential long-term effects of divorce on individuals' life paths and provide a basis for exploring its impact on entrepreneurial outcomes. By addressing this hypothesis and investigating the potential effect of parental divorce on a child's entrepreneurship, this research aims to fill the gap in the existing literature. It will provide insights into how family disruptions, specifically divorce, may impact the development of the next generation's entrepreneurial intentions, skills, and behaviors. Understanding these dynamics can contribute to a more comprehensive understanding of the factors that shape entrepreneurial outcomes and inform interventions and support systems to foster entrepreneurial development in children from divorced families.

Hypothesis 2: Parents who stay together have a positive impact on a child's entrepreneurship.

This hypothesis suggests that parents who stay together can positively impact their child's entrepreneurial intentions. The same applies to the first hypothesis; there is limited empirical evidence about the effect of parents' marital status on next-generation entrepreneurship.

The label "Parents who stay together" is acquired when the respondent answers question C6 (see Appendix D) that his or her parents never divorced. It implies that the respondent's parents are still together.

Research by Waldfogel, Craigie, and Brooks-Gunn (2010) found that children from intact families have higher educational attainment and better academic performance than those from disrupted families. These educational advantages can contribute to developing skills and knowledge necessary for entrepreneurial success. Exploring the role of parents together as a source of support, encouragement, and role modeling can provide valuable insights into how family dynamics shape the entrepreneurial aspirations and behavior of the next generation.

Hypothesis 3: Educational level of parents has a positive influence on child's entrepreneurship.

This hypothesis suggests that the higher the parents' educational level, the more positive the impact on the child's entrepreneurship. While previous research has acknowledged the importance of education in shaping various aspects of a child's development, including academic achievement and career choices, there is limited empirical evidence explicitly focusing on the influence of parental educational status on entrepreneurial outcomes.

A longitudinal study by Davis-Kean (2005) revealed that parental education predicts children's educational attainment and occupational success later in life. Children of highly educated parents are likelier to pursue higher education, enter professional careers, and experience upward socioeconomic mobility. Despite these indications of a positive relationship between parental educational status and child development outcomes, there needs to be more literature regarding its specific influence on entrepreneurial outcomes. This hypothesis will contribute to a deeper understanding of how parental education impacts entrepreneurial aspirations and behavior.

Hypothesis 4: Entrepreneurial employment status of the parents has a positive influence on child's entrepreneurship.

This hypothesis suggests that if the parents are an entrepreneur, this will increase the positive influence on the child becoming an entrepreneur. Existing literature suggests that parental role modeling and exposure to entrepreneurial environments can shape children's attitudes, beliefs, and aspirations toward entrepreneurship. A study by Kautonen, Gelderen, and Fink (2015) highlighted the significance of role models in shaping entrepreneurial behavior. Children growing up with parents actively engaged in entrepreneurial ventures tend to have firsthand experience of entrepreneurship's challenges, rewards, and skills. This exposure can catalyze entrepreneurial engagement and increase the likelihood of pursuing entrepreneurial careers. Despite these indications of a positive relationship between parents' entrepreneurial employment and their child's entrepreneurship, there needs to be more literature regarding this specific influence of parents' entrepreneurial employment on the entrepreneurial outcomes of their children. This hypothesis will contribute to a deeper understanding of how parents' entrepreneurial

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employment is a source of inspiration, guidance, and support in fostering entrepreneurial aspirations and behavior in the next generation.

Hypothesis 5: Mother's employment status has a positive influence on child's entrepreneurship.

This hypothesis suggests that if a mother has a job during childhood, this positively affects the child's entrepreneurship. Existing literature suggests that maternal employment can have a range of effects on child development. Studies have shown that employed mothers can be important role models for their children. Additionally, according to Crouter et al. (2005), maternal employment has been associated with positive outcomes such as improved cognitive development, higher educational attainment, and enhanced self-esteem in children. This hypothesis will contribute to a deeper understanding of how the parent's employment status impacts the acquisition of entrepreneurial skills, development of entrepreneurial aspirations, and engagement in entrepreneurial activities by their children.

Addressing these hypotheses will enhance our understanding of the mechanisms through which family dynamics shape entrepreneurial outcomes and provide practical implications for policymakers, educators, and families seeking to promote entrepreneurship among future generations.

3   Data and Methodology

This section provides an overview of the data and methodology employed in this study to investigate the relationship between family traits and entrepreneurship. First, we describe the data set used in this study. We provide information about the origin of the data and the specific wave or period used. Secondly, we describe the methodology used to examine the relationship between family traits and entrepreneurship. This part will also describe the variables used in this research. Lastly, this section will discuss any assumptions and limitations of this method.

3.1   Data Description

We derive data used in this paper from the Netherlands Longitudinal Life-course Study (NELLS) data set, available via Data Archiving and Networked Services (DANS). NELLS is a longitudinal survey that follows a sample of Dutch individuals. The survey includes various questions about the respondents' lives, including family characteristics, educational trajectories, employment patterns, health, well-being, and social relationships. It includes two waves of a panel study on an initial sample of 5312 inhabitants of the Netherlands, age group 15-45. In 2009, wave 1, a mixed mode of face-to-face interviews and self-completion questionnaires, was collected. In 2013 they collected wave 2 in a mixed mode of face-to-face interviews and web survey questionnaires. This paper, the first wave, is examined because this wave contains the most questions about entrepreneurship and family traits. Appendix D includes all the relevant questions of the survey.

Descriptive statistics are displayed in Table 1 for the covariates, Table 2 for the independent variables, and Table 3 for the dependent variables (see Appendix A). The analysis includes a total of 5,312 respondents. There is approximately an equal distribution of gender, and the average age of the participants is 31 years. Most respondents did an "MBO" or "HBO" as their highest-achieved education. Regarding the independent variables, most of the respondents' parents are still together; the father more often has a higher education than the mother, and there are few respondents whose father was an entrepreneur or whose mother worked from age 12-14. Regarding the dependent variables, more than half of the respondents work independently, and we label them as "Entrepreneurs." However, the minority of the "entrepreneurs" earn above average or work in a medium-sized or big com-

pany.

3.2 Variables

3.2.1 Covariates

The covariates contain the gender, age, Birthplace, and the highest achieved education of the respondent. Gender and age speak for themselves. We define Birthplace as the "Birth Country" and the "Place of Birth" of the respondent. The "Birth Country" is derived from question A4a (see Appendix D), and the "Place of Birth" is derived from question A8 (see Appendix D), containing what kind of place the respondent was born.

3.2.2 Independent variables

Independent variables not previously covered in the text are "Mother Study" and "Father Study." This variable implies that the mother or the father went to college after high school. We derive this variable from questions C8 and C9 (see Appendix D). The variable "Father Entrepreneur" means that the respondent's father worked independently, in this paper labeled as an "Entrepreneur." We derive this variable from question C13 (see Appendix D). Lastly, the variable "Mother Work" means that the respondent's mother worked when the respondent was 12-14 years old; this is question C14 (see Appendix D).

3.2.3 Dependent variables

As mentioned earlier, the variable "Entrepreneurship" is split in terms of success. "Entrepreneurship" is defined as a person who answered question A40 (see Appendix D) with the answer "2", meaning that they work independently. "Medium-Sized/ Big Company Entrepreneurship" is defined as a person who answered question A40 (see Appendix D) with the answer "2" and answered question A52 (see Appendix D) with answers 3, 4, or 5, meaning there are more than 50 people in their company. "Income Above Average Entrepreneurship" is defined as a person who answered question 40A (see Appendix D) with answer "2" and combined questions A61 and A62 (see Appendix D). The respondent (individually) earns above average. "Above average" is calculated as the average net income in 2009 from the Nether-

lands is about 2200 euros (CBS, 2016). We label every answer to questions A61 and A62 above 2200 euros as an "Income Above Average Entrepreneur."

3.3   Propensity Score Matching

This study employs a propensity score matching approach to examine the effect of family traits on entrepreneurship. Propensity score matching is a statistical technique used to estimate the causal effect of a treatment or intervention in observational studies where randomized controlled trials are not feasible or ethical. Creating comparable groups of treated and controlled individuals based on their propensity scores aims to reduce the impact of confounding variables. The propensity score is the conditional probability of receiving the treatment given a set of observed covariates. Based on the individual's characteristics, it represents the likelihood of being assigned to the treatment group. We perform the propensity score matching as follows: First, the propensity scores will be estimated using a probit model. The next step is to match individuals with similar propensity scores. After the matching process, assessing the balance in observed covariates between the treated and control groups is essential. We estimate the treatment effects by comparing the outcomes between the matched treated and control groups. Finally, we conduct robustness checks to enhance the validity of the findings. Stata17 was used to treat the data set and perform the propensity score matching.

As previously mentioned, the propensity score is measured using a probit model. We use the following probit regression to estimate the propensity score:

$$y_i = \mu + \beta_1 * X_i + \beta_2 * Age_i + \beta_3 * Gender_i + \beta_4 * Educationi + \beta_5 * Birthplace_i + \varepsilon \tag{1}$$

Where y is a binary variable that can differ, first, it is one if the person is an entrepreneur and 0 if the person is not. Second, it is one if the person is an entrepreneur and earns above average and 0 if the person is not and earns above average. Lastly, it is one if the person is an entrepreneur of a medium-sized or large company and 0 if the person is not an entrepreneur

of a medium-sized or large company. X is the dependent variable which can also differ. We test the following dependent variables: whether the parents are divorced, whether the parents are together, whether the parents went to college, whether the father is an entrepreneur, and whether the mother worked during the age of 12-14 of the child. The rest of the variables in the regression are covariates. Age is the age of the respondent at the time of the interview. Gender refers to the gender of the respondent. Education is the highest achieved education of the respondent. Birthplace is in what country and kind of place the respondent is born. Lastly, E represents the error term.

3.4 Assumptions and Limitations

Propensity score matching is a widely used statistical technique in observational studies to estimate causal effects. While it offers valuable advantages, like reducing selection bias, it is essential to acknowledge and understand its underlying assumptions and limitations.

The fundamental assumption of propensity score matching is that treatment assignment is ignorable given the observed covariates. This assumption implies that the propensity score model accounts for all relevant factors influencing treatment assignment and outcome. If unobserved confounders exist, the estimated treatment effects may be biased.

For propensity score matching to work, there needs to be a sufficient amount of common support between the treated and control groups in terms of their propensity scores. If there is a lack of overlap, it can be easier to find suitable matches, potentially leading to biased estimates.

Propensity score matching assumes that treatment assignment is unconfounded conditional on the estimated propensity scores. It means no unmeasured confounding variables exist that simultaneously affect treatment assignment and the outcome variable. If unobserved confounders exist, propensity score matching may not fully address their impact, potentially biasing the estimated treatment effects.

The accuracy and reliability of propensity score matching heavily depend on the correct specification of the propensity score model. Misspecification of the model, such as including irrelevant covariates or omitting relevant covariates, can lead to biased estimates.

Since the propensity score is estimated based on observed covariates, some degree of uncertainty is involved in the matching procedure. Small changes in the estimation procedure or the choice of covariates can result in differ-

ent propensity score values and subsequent matching outcomes. We conduct sensitivity analyses to determine how resistant the results are to these variations. In order to ensure a sufficient number of suitable matches, propensity score matching requires a sufficiently large sample size. Finding well-matched pairs can be challenging when the treated and control groups are small or when the propensity score distribution is highly variable, which can limit the effectiveness of the matching process.

To address these limitations, several robustness checks will be employed to ensure the robustness and reliability of the findings. First, we assess the balance in the matched samples. We examine the distribution of covariates between the treated and control groups before and after matching. It will expose any differences that might point to residual confounding. Doing so will ensure that the matched samples are well-balanced and free from any lingering biases that could distort the results.

Secondly, we perform another robustness check with nearest-neighbor matching. Nearest-neighbor matching seeks to identify the control individuals who are most similar to the treated individuals based on their propensity scores. This matching method aims to create pairs or groups of individuals with similar characteristics, enabling a more nuanced analysis of the treatment effects. The results can be validated from a different angle by employing nearest-neighbor matching, exploring whether the estimated treatment effects hold when using an alternative matching algorithm.

Lastly, we conduct sensitivity analyses to explore the limits of the findings. In order to assess the results' resilience and stability, the model specifications, such as caliper width, functional forms of the propensity score, and various sets of covariates, will be systematically varied.

By doing these robustness checks, the aim is to overcome obstacles caused by potential biases and uncertainties.

4 Results

This section presents the analysis findings to explore the relationship between family traits and entrepreneurship. We provide a comprehensive overview of the statistical outcomes and discuss notable findings. The descriptive statistics, propensity score matching results, and we provide the robustness checks mentioned earlier. For ease of understanding, the data tables provide the results. This section presents the findings objectively, and we draw no conclusions yet.

4.1 Main findings

The propensity score matching (see Appendix B) presents findings about the relationship between family traits and entrepreneurship. Firstly, the presence of divorced parents shows little effect on entrepreneurship. However, when considering the age at which the parents divorced, individuals who experienced parental divorce at or under the age of 14 demonstrate a significant negative impact on their likelihood of becoming entrepreneurs. The other family traits do significantly affect entrepreneurship. Additionally, individuals whose parents are still together tend to have a positive association with entrepreneurship. Moreover, parental education, whether the parents went to college, positively influences entrepreneurial outcomes. Surprisingly, if the father is an entrepreneur, it negatively affects entrepreneurship—except for when individuals achieve above-average income in their entrepreneurial endeavors. Lastly, if the mother worked when the child was 12-14, years old it is associated with a positive effect on entrepreneurship.

A standard normal distribution has a mean of 0 and a standard deviation 1. The Z-score represents the number of standard deviations that a particular value is away from the mean. The negative Z-score indicates that the observed value is below the mean. The observed value is relatively low compared to the average.

Table 7 (see Appendix C) presents the assessment of balance in the matched sample. This robustness check examines how the propensity score matching technique successfully reduced differences in observed covariates between the treated and control groups. By assessing balance, we can determine that the matching process created comparable groups, thereby reducing the potential bias introduced by confounding variables.

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Tables 8, 9, and 10 (see Appendix C) focus on nearest-neighbor matching as a robustness check. It pairs each treated individual with one or more control individuals with the closest propensity scores. The significant findings from nearest-neighbor matching closely align with those obtained from propensity score matching, indicating high consistency. Both methods yield similar results regarding the relationship between family traits and entrepreneurship.

In Tables 11, 12, and 13 (see Appendix C), we conduct sensitivity analyses to further examine the stability and robustness of the results. Sensitivity analyses explore variations in the matching procedure or the propensity score model specification. It assesses how changes in the factors affect the treatment effects. The sensitivity percentage reflects the proportion of actual positive cases correctly identified by the model. The higher the sensitivity percentage, the more robust and valid the results are. Table 6 shows some sensitivity analyses revealed relatively low sensitivity percentages. It could indicate that the model sometimes needs help correctly identifying a significant proportion of individuals with the desired attribute. This finding is noteworthy for possible limitations.

5 Discussion and Conclusion

This paper examines the effects of family traits on entrepreneurship. We provide valuable insights into the interaction between family dynamics and entrepreneurial aspirations by examining various family factors and their influence on entrepreneurial outcomes.

5.1 Findings

The findings of this study suggest that family traits can have a significant impact on entrepreneurship. Specifically, factors such as intact parental relationships, parental education, and parental entrepreneurial background were associated with entrepreneurial outcomes. These findings are consistent with prior research highlighting the role of the family in shaping individuals' entrepreneurial aspirations and abilities. This section answers the research question, "How do different family traits affect the likelihood of entrepreneurial success?".

5.1.1 Hypothesis 1

Based on the findings, the results for the first hypothesis: "Parental divorce affects child's entrepreneurship," are interesting. Only when the child was 14 years or younger during the parental split was a significant effect found on regular entrepreneurship. All the other results were not significant. However, we will not reject the first hypothesis because of the significant effect on ages 14 or younger. From this finding, we can deduce that parental split only affects entrepreneurship for "young" children. This finding is interesting for future research to examine this in more detail.

5.1.2 Hypothesis 2 and 3

The second hypothesis: "Parents who stay together have a positive impact on a child's entrepreneurship," and the third hypothesis: "Educational level of parents has a positive influence on a child's entrepreneurship," are supported in this research. Results for both hypotheses have shown significant positive effects. Therefore, we cannot reject both hypotheses. From these findings, we can deduce that a higher educational level of parents positively affects their child's participation in entrepreneurship, as well as parents still being together.

5.1.3 Hypothesis 4

The fourth hypothesis: "Entrepreneurial employment status of the parents has a positive influence on child's entrepreneurship," is rejected. The findings show negative, significant results. The founded positive result is not significant. Therefore, we reject this hypothesis, and we cannot state that the entrepreneurial employment status of the parents has a positive influence on the child's entrepreneurship.

5.1.4 Hypothesis 5

Lastly, the fifth hypothesis, "Mother's employment status has a positive influence on child's entrepreneurship," is supported by the findings. The results are positive and significant. From this, if the mother worked by age 12-14, this positively affects their child's participation in entrepreneurship.

From these findings, family traits significantly affect entrepreneurship. However, it is essential to note that the specific nature of this effect varies depending on the particular family trait.

5.2 Limitations

It is also essential to note that not all sensitivity analyses yielded robust results. During propensity score matching and nearest-neighbor matching provided valuable insights into the relationship between family traits and entrepreneurship, some sensitivity measures did not reach desirable levels. It indicates that potential biases or unaccounted factors may influence the results. As a result, when interpreting the findings and applying them to broader positions, caution should be exercised.

Moreover, it is crucial to recognize that entrepreneurship is a multifaceted phenomenon influenced by numerous variables. Even though this study focused on specific family traits, many other factors can significantly impact entrepreneurial outcomes. Some factors that can interact with family traits and shape entrepreneurial endeavors include individual traits, environmental factors, market conditions, and cultural aspects. It is essential to acknowledge that many additional factors not included in the analysis influence the effects of family traits on entrepreneurship, even though this research controls for various factors.

Except in cases where the parents divorced before the age of 14, the findings of this study did not reveal any statistically significant effects regarding the specific effect of divorced parents on entrepreneurship. This nuanced finding suggests the possibility of age-related dynamics or interaction effects that call for further investigation. The specific mechanisms by which parental divorce influences entrepreneurial aspirations and outcomes should be examined in greater detail in future research, considering potential moderating factors like parental support, access to resources, and individual resilience.

While the results of this study contribute to the existing literature on the relationship between family traits and entrepreneurship, it is essential to acknowledge its limitations. The limited number of sensitivity analyses that yielded robust results highlights the need for further investigation and replication of findings. Additionally, the study did not control for all potential confounding factors, which introduces the possibility of omitted variable bias. Future research should build on the methods introduced in this study by including a more comprehensive range of variables and employing more stringent matching strategies.

5.3 Relevance findings and implications for policy makers

Research on the influence of family traits on entrepreneurship provides valuable insights for policymakers seeking to promote entrepreneurial activity. Policymakers can leverage the findings that growing up in an entrepreneurial family or having entrepreneurial role models positively impacts attitudes toward entrepreneurship. Introducing entrepreneurship education programs, establishing mentorship initiatives, and organizing networking events can cultivate an entrepreneurial mindset from an early age. Policymakers should design policies that facilitate resource access through funding programs, business incubators, and mentorship schemes to recognize the significance of family support. Addressing risk aversion and stability bias requires shaping societal attitudes by highlighting success stories and collaborating with educational institutions, media outlets, and community organizations. Supporting entrepreneurship in underserved communities through tailored programs can contribute to economic development, while initiatives promoting intergenerational entrepreneurship foster knowledge transfer and valuable networks.

In conclusion, this thesis enhances our understanding of the complex relationship between family traits and entrepreneurship. The findings suggest that family traits can influence entrepreneurial aspirations and outcomes. However, we should exercise caution when interpreting the results because not all sensitivity analyses yielded robust findings. It is essential to recognize the numerous additional factors that can influence entrepreneurship and take into account any potential interactions or moderating effects. Future research should address these limitations and further investigate the effect of divorced parents on entrepreneurship, considering age-related dynamics and other relevant factors. By deepening our understanding of these complex relationships, policymakers and practitioners can develop targeted interventions and support mechanisms to foster entrepreneurial aspirations within individuals and families. It promotes economic growth, innovation, job creation, and societal development.

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7 Appendix

7.1 Appendix A: Descriptive Statistics

Table 1: Descriptive Statistics Covariates

Variable	Obs	Mean	Std. dev.	Min	Max
Sex	5,312	1.5279	0.4993	1	2
Age	5,312	31.2976	9.0174	14	49
Birth country	5,312	7.0240	45.1687	1	999
Place of birth	5,312	2.1000	1.1466	1	5
Education: primary school	5,312	0.8211	0.3833	0	1
"lbo, vmbo-kb/bbl"	5,312	0.2459	0.4307	0	1
"mavo, vmbo-tl"	5,312	0.3037	0.4599	0	1
"havo"	5,312	0.1988	0.3992	0	1
"vwo/gymnasium"	5,312	0.1412	0.3483	0	1
"mbo-short(kmbo), primary apprenticeship, bol/bbl level 1 or 2"	5,312	0.1324	0.3389	0	1
"mbo-intermediate/long (mbo), secondary/tertiary apprenticeship, bol/bbl level 3 or 4"	5,312	0.2915	0.4545	0	1
"HBO"	5,312	0.2273	0.4191	0	1
University (bachelor)	5,312	0.0623	0.2418	0	1
university (masters, doctoral)	5,312	0.0648	0.2461	0	1
PhD trajectory	5,312	0.0060	0.0774	0	1
Foreign education, primary education	5,312	0.0111	0.1048	0	1
Foreign education, secondary education	5,312	0.0194	0.1379	0	1
Foreign education, higher education	5,312	0.0104	0.1012	0	1
No education	5,312	0.0160	0.1255	0	1

Table 2: Descriptive Statistics Dependent Variables

Variable	Obs	Mean	Std. dev.	Min	Max
Parents divorced	5,312	0.1466	0.3538	0	1
Parents divorced from age 14	5,312	0.0977	0.2969	0	1
Parents together	5,312	0.8475	0.3595	0	1
Mother study	5,312	0.1971	0.3978	0	1
Father study	5,312	0.3006	0.4586	0	1
Father entrepreneur	5,312	0.2022	0.4017	0	1
Mother work	5,312	0.2997	0.4582	0	1

Table 3: Descriptive Statistics Independent Variables

Variable	Obs	Mean	Std. dev.	Min	Max
Entrepreneur	5,312	0.6638	0.4725	0	1
Income above average entrepreneur	5,312	0.1222	0.3275	0	1
Medium-sized/big company entrepreneur	5,312	0.3678	0.4823	0	1

7.2 Appendix B: Treatment effects

Table 4: Treatment Effect on "Entrepreneurship" after Propensity Score Matching

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced	-0.0350	0.0224	-1.5600	0.1180

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced from age 14	-0.0537	0.0281	-1.9100	0.0560

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents together	0.0355	0.0208	1.7000	0.0880

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother study	0.0764	0.0239	3.1900	0.0001

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father study	0.0548	0.0205	2.6800	0.0070

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father entrepreneur	-0.0490	0.0193	-2.5300	0.0110

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0664	0.0176	3.7700	0.0000

Table 5: Treatment Effect on "Medium-Sized/ Big Company Entrepreneurship" after Propensity Score Matching

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced	-0.0213	0.0239	-0.8900	0.3730

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced from age 14	-0.0160	0.0283	-0.5600	0.5730

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents together	0.0318	0.0217	1.4700	0.1420

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother study	0.0618	0.0225	2.7400	0.0060

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father study	0.0479	0.0209	2.2900	0.0220

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father entrepreneur	-0.0755	0.0200	-3.7800	0.0000

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0374	0.0190	1.9700	0.0490

Table 6: Treatment Effect on "Income Above Average Entrepreneurship" after Propensity Score Matching

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced	-0.0019	0.0140	-0.1400	0.8910

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents divorced from age 14	0.0221	0.0228	0.9700	0.3330

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Parents together	0.0040	0.0142	0.2800	0.7760

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother study	0.0502	0.0184	2.7200	0.0070

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father study	0.0227	0.0134	1.6900	0.0910

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father entrepreneur	0.0025	0.0134	0.1900	0.8490

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0231	0.0133	1.7300	0.0840

7.3   Appendix C: Robustness Checks

Table 7: Assessing Balance in the Matched Samples

Variable	Unmatched Matched	Mean Treated	Control	%bias	%reduct |bias|	ttest t	p>|t|	V(T)/ V(C)
Sex	U	1.5234	1.5557	-6.5000		-1.69	0.0900	1.01
	M	1.5235	1.5311	-1.5000	76.6000	-0.72	0.4720	1.00
Age	U	31.6250	29.5310	23.2000		6.09	0.0000	0.98
	M	31.6250	31.4660	1.8000	92.4000	0.83	0.4060	0.97
Birth country	U	6.3584	10.7300	-9.4000		-2.53	0.0110	0.84*
	M	6.1374	6.7644	-1.3000	85.7000	-0.79	0.4300	1.65*
Place of birth	U	2.1269	1.9480	16.0000		4.09	0.0000	1.14*
	M	2.1271	2.1717	-4.0000	75.1000	-1.82	0.0690	0.98
Education: primary school	U	0.8166	0.8465	-8.0000		-2.05	0.0410	
	M	0.8165	0.8090	2.0000	74.4000	0.92	0.3580	
"lbo, vmbo-kb/bbl"	U	0.2389	0.2834	-10.2000		-2.71	0.0070	
	M	0.2389	0.2267	2.8000	72.5000	1.37	0.1700	
"mavo, vmbo-tl"	U	0.3001	0.3255	-5.50000		-1.45	0.1480	
	M	0.3002	0.3369	-7.90000	-44.6000	-3.74	0.0000	
"havo"	U	0.1997	0.1943	1.4000		0.35	0.7240	
	M	0.1995	0.1924	1.8000	-32.4000	0.85	0.3950	
"vwo/gymnasium"	U	0.1411	0.1411	0.0000		0.00	0.9970	
	M	0.1410	0.1309	2.9000	-19665.3000	1.39	0.1660	
"mbo-short(kmbo), primary apprenticeship, bol/bbl level 1 or 2"	U	0.1253	0.1683	-12.2000		-3.33	0.0010	
	M	0.1254	0.1142	3.2000	74.1000	1.62	0.1040	
"mbo-intermediate/long (mbo), secondary/tertiary apprenticeship, bol/bbl level 3 or 4"	U	0.2921	0.2884	0.8000		0.21	0.8310	
	M	0.2921	0.3042	-2.6000	-224.2000	-1.25	0.2130	
"HBO"	U	0.2277	0.2240	0.9000		0.23	0.8160	
	M	0.2276	0.2256	0.5000	46.2000	0.23	0.8210	
University (bachelor)	U	0.0601	0.0743	-5.7000		-1.53	0.1250	
	M	0.0599	0.0621	-0.9000	84.3000	-0.44	0.6590	
university (masters, doctoral)	U	0.0641	0.0681	-1.6000		-0.42	0.6740	
	M	0.0641	0.0579	2.5000	-57.6000	1.23	0.2170	
PhD trajectory	U	0.0060	0.0062	-0.2000		-0.06	0.9520	
	M	0.0060	0.0047	1.7000	-653.0000	0.87	0.3850	
Foreign education, primary education	U	0.0114	0.0099	1.4000		0.36	0.7170	
	M	0.0114	0.0091	2.2000	-53.3000	1.05	0.2950	
Foreign education, secondary education	U	0.0200	0.0149	4.0000		0.99	0.3240	
	M	0.0200	0.0174	2.0000	48.5000	0.93	0.3500	
Foreign education, higher education	U	0.0102	0.0099	0.3000	-228.0000	0.09	0.9300	
	M	0.0102	0.0114	-1.1000		-0.51	0.6100	
No education	U	0.0178	0.0062	10.7000	82.8000	2.42	0.0150	
	M	0.0178	0.0158	1.8000		0.74	0.4600	

Table 8: Nearest Neighbor Matching on "Entrepreneurship"

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father study	0.0472	0.0215	2.2000	0.0280

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father entrepreneur	-0.0436	0.0188	-2.3200	0.0200

Entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0556	0.0170	3.2800	0.0010

Table 9: Nearest Neighbor Matching on "Income Above Average Entrepreneurship"

Income above average entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0215	0.0123	1.7400	0.0820

Table 10: Nearest Neighbor Matching on "Medium-Sized/ Big Company Entrepreneurship"

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Father entrepreneur	-0.0605	0.0186	-3.2600	0.0010

Medium-sized/ big company entrepreneur	Coefficient	Std. Dev.	Z	Sig.
Mother work	0.0356	0.0184	1.9400	0.0520

Table 11: Sensitivity Analyses: "Entrepreneurship"

Entrepreneur	Sensitivity
Parents divorced from age 14	9.22%
Parents together	85.34%
Mother study	21.27%
Father study	32.67%
Father entrepreneur	18.52%
Mother work	32.50%

Table 12: Sensitivity Analyses: "Medium-Sized/ Big Company Entrepreneurship"

Medium-sized/ big company entrepreneur	Sensitivity
Parents divorced from age 14	8.80%
Parents together	85.77%
Mother study	21.55%
Father study	33.47%
Father entrepreneur	17.35%
Mother work	31.58%

Table 13: Sensitivity Analyses: "Income Above Average Entrepreneurship"

Income above average entrepreneur	Sensitivity
Parents divorced from age 14	8.01%
Parents together	86.59%
Mother study	24.81%
Father study	36.98%
Father entrepreneur	19.88%
Mother work	31.59%

7.4 Appendix D: Questionnaire NELLS datset

FACE -TO-FACE QUESTIONNAIRE NELLS WAVE 1

A4. In which country were the following people born?

a. yourself
b. your father
c. your mother
d. your grandfather (on your mother's side-your mother's father)
e. your grandmother (on your mother's side – your mother's mother)
f. your grandfather (on your father's side – your father's father)
g. your grandmother (on your father's side – your father's mother)

1. Netherlands
2. Morocco
3. Turkey
4. Suriname
5. Netherlands Antilles
6. Another country ....

A8. What place was this when you were born there? [let the respondent estimate this himself]

1. big city
2. small city
3. big village
4. small village
5. remote (not in a village)

A40. Do you work as an employee or as a self-employed person (e.g. freelance, own company)?

1. as an employee
2. as a self-employed person

A52. Approximately how many people work in your company (the establishment where you work)?

1. 1-10
2. 11-50
3. 51-100
4. 101-500
5. 501 or more

A61. What is the net monthly income of you and your partner (if applicable) together? This concerns a partner with whom you live together or are married.

1. Less than €150 per month
2. €150 - €299 per month
3. €300 - €499 per month
4. €500 - €999 per month
5. €1000 - €1499 per month
6. €1500 - €1999 per month
7. €2000 - €2499 per month
8. €2500 - €2999 per month
9. €3000 - €3499 per month
10. €3500 - €3999 per month
11. €4000 - €4499 per month
12. €4500 - €4999 per month
13. €5000 - €5499 per month
14. €5500 - €5999 per month
15. €6000 - €6999 per month
16. €7000 or more per month
17. I don't know, don't want to say

A62.How large is your contribution to this income approximately? Can you name a percentage, you may make an estimate.

1. no contribution
2. approximately 10 %
3. approximately 20 %
4. approximately 30 %
5. approximately 40 %
6. approximately 50 %
7. approximately 60 %

8. approximately 70 %
9. approximately 80 %
10. approximately 90 %
11. approximately 100 %
12. I don't know

C6. Have your (biological) parents ever divorced (or split up)?

1. yes
2. no
3. I don't know

C7. How old were you when they separated?

….. (age of respondent when parents divorced)

C8. What is your mother's highest level of education (highest level of education)? If your mother was educated abroad, take the Dutch level that is most similar.

1. did not complete or did not attend primary school
2. primary school
3. lower vocational education, vmbo
4. mavo (or vmbo-t)
5. secondary vocational education
6. havo, vwo, gymnasium
7. higher vocational education
8. university
9. foreign education cannot be classified, ...
10. I don't know

C9. What is your father's highest level of education (highest level of education)? If your father was educated abroad, take the Dutch level that is most similar.

1. did not complete or did not attend primary school
2. primary school
3. lower vocational education, vmbo

4. mavo (or vmbo-t)
5. secondary vocational education
6. havo, vwo, gymnasium
7. higher vocational education
8. university
9. foreign education cannot be classified, ...
10. I don't know

C13. Did your father then work as an employee or as a self-employed person (for example, freelance, own company)?

1. as an employee
2. as a self-employed person

C14. Did your (biological) mother work when you were 12 or 14 years old?
1. yes
2. no
3. not applicable / I don't know / mother never worked