Part-time entrepreneurship

Micro-level and macro-level determinants

Dissertation

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Preface

A large percentage of businesses are run by part-time entrepreneurs. Part-time entrepreneurship plays a significant role in the economy and represents an important stepping stone towards full-time entrepreneurship. Part-time entrepreneurs can gain substantial monetary and nonmonetary benefits; and it is important to note that some of the biggest companies in the world started off on a part-time basis. The number of part-time businesses has increased tremendously during the last few decades and part-time entrepreneurship has become an increasingly important part of the society and the economy. My dissertation analyzes the micro- and macro-level determinants of part-time entrepreneurship and the motivation behind the transition of part-time entrepreneurs towards becoming full-time entrepreneurs.

My dissertation would not have been possible without the help of others. I take this opportunity to thank those who have helped me in various ways and at various stages in completing this dissertation. I would firstly like to thank Prof. Jörn Hendrich Block, my dissertation advisor. He fully supported me throughout the entire process and his fascination for academic research was a constant source of inspiration. His approachability and prompt responses created a stimulating and supportive environment. I am particularly grateful for his contributions to chapter 4 and chapter 6. I am also indebted to JProf. Lars Hornuf for his support as second reviewer of my dissertation. I am very thankful to JProf. Thorsten Semrau. I thank him in particular for his approachability and insights into academic research and multi-level modelling as well as his invaluable mentoring and contribution to chapter 4.

I also thank the reviewers of several academic journals, and the participants at various conferences for their valuable insights and recommendations. In addition to the intense discussions with my advisors, I also want to thank the team at the Professur für Unternehmensführung. In particular, I would like to thank Christian Fisch, Stephan Hock, Florian Hosseini, Alexandra Moritz, Stephanie Smith-Eckhardt, Dominik Wagner, and Guoqian Xi for their inspiring discussions, feedback and advice. A large part of this dissertation is of an empirical nature and I would like to thank the Institut für Mittelstandsforschung der Universität Trier as well as Prof. Jörn Hendrich Block for their help in collecting the data set which is the foundation for chapter 6.

Above all, I wish to thank my parents and sisters for their continued support. I am also indebted to my girlfriend for her love, patience and the wonderful years in Africa.

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List of abbreviations

Abbreviation	Meaning
€	Euro
AIC	Akaike information criterion
bga	Bundesgruenderinnenagentur (German network of female entrepreneurs)
BMWi	German Federal Ministry of Economic Affairs and Energy
Chi²	chi square statistics
coef.	coefficient
diff.	difference
e.g.	exempli gratia/for example
et al.	et alia/and others
etc.	et cetera/and so on
EXIST	German support program for founders at higher education and research institutions
FTE	full-time equivalent
GDP	gross domestic product
GEM	global entrepreneurship monitor
GLOBE	global leadership and organizational behavior effectiveness study
H	hypothesis
HLM7	HLM7 is a specialized statistical software package for multi-level analysis
i.e.	id est/that is
IHK	chambers of commerce and industry (German business association)
IIA	independence of irrelevant alternatives
inmit	Institut für Mittelstandsforschung der Universität Trier
k	number of variables
KfW	Kreditanstalt für Wiederaufbau (German government-owned development bank)
log	logarithm
max	maximum
MCMC	Markov chain Monte Carlo techniques
min	minimum
N	sample size
n.s.	not significant
n/a	not available/not applicable
OLS	ordinary least squares
OR	odds ratio

List of abbreviations–continued

Abbreviation	Meaning
p	significance level
p.	page
PhD	Doctor of Philosophy
pp.	pages
PPP	purchasing power parity
R^2	R-squared, measure of statistical fit
REML	restricted maximum likelihood estimation
SD	standard deviation
SE	standard error
sig.	significance
SOEP	German socio-economic panel
Stata	Stata is a general-purpose statistical software package
TNS	Taylor Nelson Sofres (a market research company)
UG	Unternehmergesellschaft (German company type)
UK	United Kingdom
US	United States
USA	United States of America
USD	United States Dollar
v	versus
VIF	variance inflation factor
vs.	versus
z. B.	zum Beispiel/for example
γ	gamma
χ	chi

Zusammenfassung (German)

Ein großer Teil der Selbstständigen weltweit ist in Teilzeit selbstständig. In Deutschland z. B. werden 33 % aller Unternehmen in Teilzeit geführt und sogar 65 % aller Unternehmen in Teilzeit gegründet. Teilzeitselbstständigkeit stellt ein relativ neues Forschungsfeld dar. Eine wachsende Zahl von Untersuchungen vergleicht Teilzeit- mit Vollzeitunternehmern und untersucht Entwicklungslinien der Teilzeitselbstständigkeit, welche in dieser Arbeit dargestellt und ergänzt werden. Teilzeitselbstständigkeit wird meist mit nicht-finanziellen Zielen in Verbindung gebracht, Vollzeitselbstständigkeit dagegen zielt meist auf finanziellen Erfolg ab. Es existieren bereits qualitative Arbeiten zu den Individual-Ebene-Determinanten von Teilzeitselbstständigkeit. Zwei Forschungslücken werden in der vorliegenden Dissertation thematisiert und ein Beitrag zur Schließung dieser Lücken geliefert. Zum einen existiert bisher keine Untersuchung über mehrere Länder hinweg, die simultan Individual- und National-Ebene-Determinanten von Teilzeitselbstständigkeit betrachtet. Zum anderen wurden die Motive eines Wechsels von der Teilzeit- in die Vollzeitselbstständigkeit bisher nicht empirisch untersucht.

Diese Dissertation untersucht mit Hilfe eines multinationalen Datensatzes wie sich die National-Ebene-Determinante Kultur auf Teilzeit- vs. Vollzeitselbstständigkeit auswirkt. Die Untersuchung zeigt, dass die Kulturdimensionen Unsicherheitsvermeidung (uncertainty avoidance) und Geschlechtergleichheit (gender egalitarianism) sich signifikant negativer auf die Vollzeit- als auf die Teilzeitselbständigkeit auswirken, wohingegen die Kulturdimension Zukunftsorientierung (future orientation) bedeutend positiver auf Vollzeit- als auf Teilzeitselbstständigkeit wirkt. Darüber hinaus wurde erstmals in einem multinationalen Umfeld gezeigt, dass Teilzeitselbständigkeit essentiell weniger abschreckend auf Frauen wirkt als Vollzeitselbstständigkeit und Individual-Ebenen Charakteristika, wie z. B. das Bildungsniveau, stärker positiv auf Teilzeit- als auf Vollzeitselbstständigkeit wirken. In einer weiteren empirischen Untersuchung wurde überprüft, ob Kultur auch den Zusammenhang zwischen Individual-Ebene-Determinanten beeinflusst. Es wurde festgestellt, dass institutioneller Kollektivismus (institutional collectivism) den positiven Zusammenhang zwischen Bildung und Vollzeitselbstständigkeit signifikant schwächt, im Gegensatz dazu Familien-Kollektivismus (in-group collectivism) den positiven Zusammenhang zwischen Bildung und Teilzeitselbstständigkeit bedeutend mindert.

Die zweite adressierte Forschungslücke bezieht sich auf die Motive hinter dem Wechsel von der Teilzeit- in die Vollzeitselbstständigkeit. In diesem Zusammenhang konnte gezeigt

werden, dass Teilzeitselbstständige, die durch Selbstverwirklichung oder Unabhängigkeit motiviert werden, signifikant häufiger den Übergang zur Vollzeitselbstständigkeit wagen. Im Gegensatz dazu vollziehen Teilzeitselbstständige, die durch Zusatzeinkommen oder Anerkennung motiviert werden, bedeutend seltener den Übergang zur Vollzeitselbstständigkeit. Darüber hinaus wurden mehrere Charakteristika des Unternehmers (z. B. Hochschulabschluss) sowie Charakteristika des Unternehmens (z. B. Geschäftsidee basierend auf eigener Erfindung) etabliert, die sich signifikant positiv auf den Wechsel auswirken.

Die Ergebnisse der empirischen Untersuchungen sind relevant für Theorie und Praxis. Aus Sicht der akademischen Forschung liegt der Wert der Arbeit darin, dass erstmals mit einem multi-nationalen Datensatz Teilzeit- und Vollzeitselbstständigkeit differenziert wurde und Determinanten auf Individual- und National-Ebene festgestellt wurden. Dies festigt frühere Überlegungen, dass sich Teilzeitselbstständigkeit konzeptionell von Vollzeitselbstständigkeit unterscheidet. Durch die Erkenntnisse dieser Dissertation können auch widersprüchliche Ergebnisse über die Wirkung von Bildung als Determinante von Selbstständigkeit erklärt werden, indem gezeigt wurde, dass die Wirkung stark vom kulturellen Kontext moderiert wird. Die Resultate dieser Arbeit stellen das Wissen über Teilzeitselbstständigkeit auf eine solidere Basis. Des Weiteren wird in der Dissertation erstmals die Motivation für den Übergang von Teilzeit- in die Vollzeitselbstständigkeit beleuchtet. Dadurch wird die Heterogenität der Teilzeitselbstständigen herausgestellt.

Für die Praxis ist die vorliegende Dissertation hilfreich für Entscheidungsträger in Politik und Organisationen. Die Ergebnisse dieser Arbeit zeigen zum einen die direkten und indirekten Auswirkungen von Kultur auf Teilzeit- vs. Vollzeitselbstständigkeit. Somit können Entscheidungsträger identifizieren, ob ein Kulturraum gute oder schlechte Voraussetzungen für Vollzeit- oder Teilzeitselbstständigkeit bietet und gegebenenfalls beide Formen der Selbstständigkeit gezielt stärken. Insbesondere für den Weg in die Vollzeitselbstständigkeit über die Teilzeitselbständigkeit hat die vorliegende Arbeit Determinanten aufgezeigt, anhand derer wechselwillige Teilzeitselbstständige identifiziert und gezielt in ihrem Wechsel unterstützt werden können. Die Dissertation trägt also nicht nur zu einem besseren Verständnis des Gründungsklimas bei, sondern hilft auch bei einem gründungsunfreundlichen Klima Unternehmertum gezielt zu fördern.

1. Introduction

Warren Buffett (Buffett Partnership, Berkshire Hathaway), Michael Dell (Dell), Steve Wozniak (Apple), Pierre Omidyar (eBay) and Henry Ford (Ford) were all very successful businessmen, who all started as part-time entrepreneurs (Cohen, 2002; Dell and Fredman, 1999; Ford, 2010; Schroeder, 2008; Wozniak and Smith, 2008). Becoming a successful entrepreneur depends on many contingencies, influenced by a myriad of aspects. Hence, it is no coincidence that successful entrepreneurship can be compared to successful art which is equally elusive, requiring strokes of fortune and hard work.

Making money is art and working is art and good business is the best art.

Andy Warhol (1977)

Like art, entrepreneurship is not a binary status in which an individual is either an entrepreneur or not. Entrepreneurship can be one building block among many in an individual's life at any given time (Burke et al., 2008; Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014). Previously, entrepreneurship was associated with an all-or-nothing approach. Want-to-be entrepreneurs invested virtually all their time and a significant amount of financial resources into a business (Burke et al., 2008; Das and Teng, 1997; Lévesque and MacCrimmon, 1997). Such an approach to entrepreneurship involves significant risk and can levy a heavy toll on the entrepreneur and the entrepreneur's family (Lockwood et al., 2006; Wright and Zahra, 2011). In recent decades, a second form of entrepreneurship has attracted many individuals: part-time entrepreneurship (Burke et al., 2008; Piorkowsky et al., 2013). Depending on the country, between 10% and 60% of ventures were found to operate on a part-time basis (Bosma et al., 2008; Minniti et al., 2006). There are many definitions of part-time entrepreneurship (compare chapter 2.1) but essentially, someone can be characterized as a part-time entrepreneur if entrepreneurship is not their main occupation. Consequently, part-time entrepreneurship is usually entered on a small scale, both in terms of time and financial requirements. Part-time entrepreneurship can be combined with almost any occupation and part-time entrepreneurs have many different main occupations, for instance, a wage-job, looking after the home, studying or enjoying retirement. Additionally, part-time entrepreneurs can reap the nonmonetary benefits of entrepreneurship such as autonomy and high task variety without having to risk as many resources as full-time entrepreneurs (Folta et al., 2010). Moreover, to some degree, part-time businesses do not have to adhere to market

mechanisms. Since part-time businesses are often not the sole and not even a major source of income for the entrepreneur, part-time businesses can be unprofitable in the long term and still continue to exist.

The benefits outlined above attract different individuals than traditional full-time entrepreneurship, and part-time entrepreneurship should not simply be labelled as 'small entrepreneurship' (Folta et al., 2010). Some part-time ventures exist at the fringes of economic activity, but part-time entrepreneurship can be a great stepping stone into full-time entrepreneurship as the entrepreneurs mentioned at the beginning of this chapter illustrated (Raffiee and Feng, 2014). Starting an entrepreneurial career part-time does have some unique advantages. Part-time entrepreneurs are able to experiment a lot more than full-time entrepreneurs regarding their business model, since less is at stake (Wennberg et al., 2006). Furthermore, through part-time entrepreneurship, entrepreneurs can refine and adjust their entrepreneurial skills and business model before committing to the more resource-intense full-time entrepreneurship (Folta et al., 2010; Petrova, 2012). Not surprisingly, full-time entrepreneurs who started as part-time entrepreneurs are significantly more successful when compared to full-time entrepreneurs without prior part-time experience (Raffiee and Feng, 2014).

Academic research only recently considered part-time entrepreneurship, and the number of studies focusing on part-time entrepreneurship is still very small (compare chapter 3) when compared to the number of studies on full-time entrepreneurship. This dissertation aims to increase awareness of part-time entrepreneurship and highlight its importance for academic research. In a field of research which is at such an early stage, it is of particular interest to differentiate the new area of research from established fields of research, in this case, to differentiate part-time from full-time entrepreneurship. Consequently, this dissertation aims to advance research in two important areas of part-time entrepreneurship.

First, this dissertation will address research questions regarding the impact of societal culture on part-time vs. full-time entrepreneurship. This is an important contribution to part-time entrepreneurship research since prior research almost exclusively utilized single-country data and was thus neither able to establish the impact of country-level determinants on part-time entrepreneurship nor was prior research able to establish determinants of part-time entrepreneurship in a cross-country setting. Furthermore, this dissertation helps to differentiated part-time and full-time entrepreneurship through establishing the differential impact of micro- and macro-level determinants.

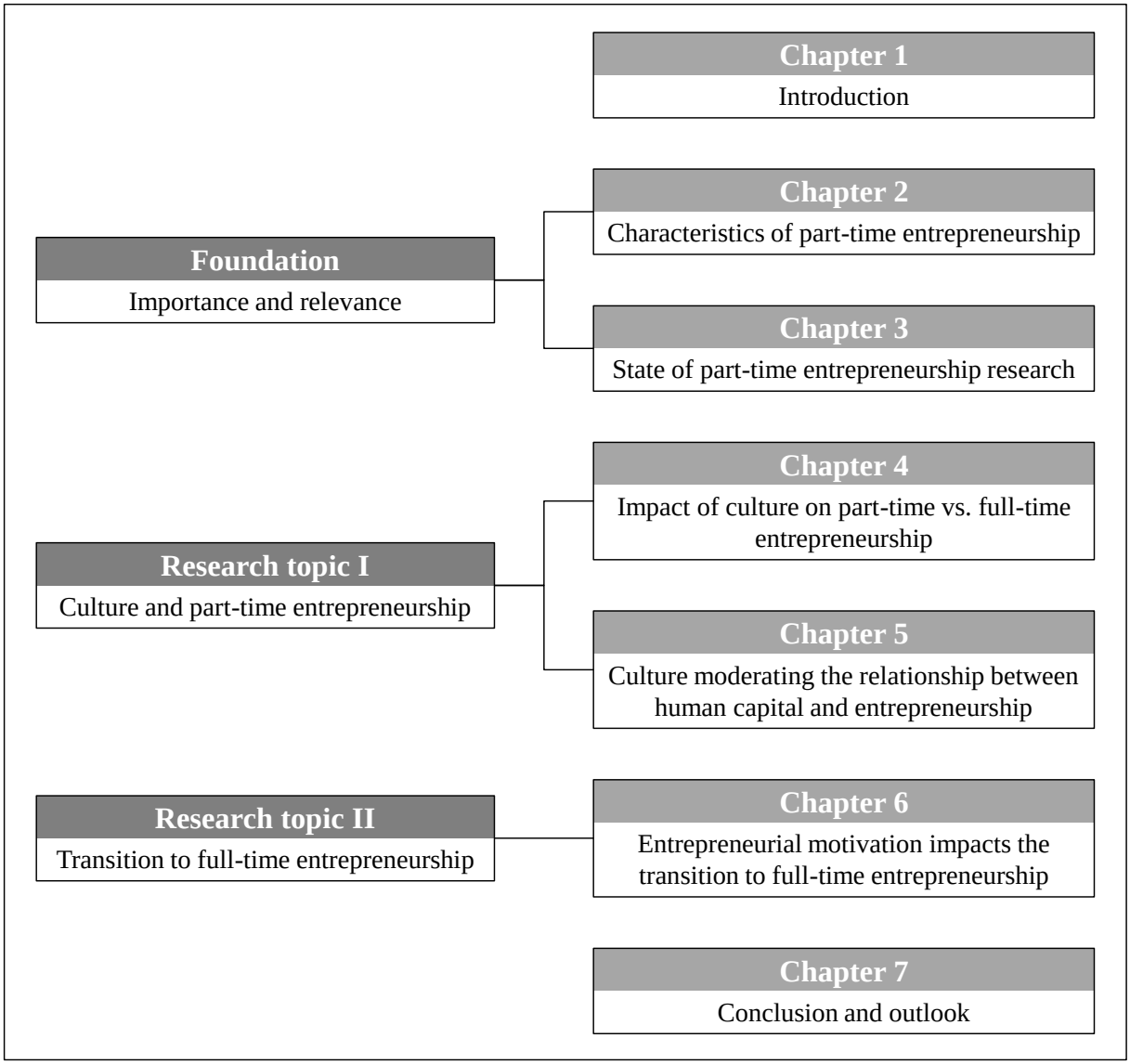
Second, this dissertation aims to advance research regarding the transition from part-time to full-time entrepreneurship. The motives influencing such a transition are so far unknown. Since entrepreneurs who transitioned are more successful compared to regular full-time entrepreneurs (Raffiee and Feng, 2014) and the transition has a sizable economic impact (compare chapter 2.2.1), understanding the motivational factors influencing the transition from part-time to full-time entrepreneurship is of academic and practical importance.
To address those two broad research topics of part-time entrepreneurship research, specific research questions have been formulated which will be addressed in this dissertation:

- Does the impact of culture differ for part-time and full-time entrepreneurship? (Research topic I)
  - What is the role of cultural dimensions regarding part-time entrepreneurship?
  - Does culture moderate the association between individual-level variables?

- Which motives impact the transition of part-time to full-time entrepreneurs? (Research topic II)
  - What is the role of financial motives?
  - What is the role of non-financial motives?

To answer those research questions, this dissertation relies on the structure illustrated in Figure 1-1. To provide an in-depth understanding of part-time entrepreneurship, chapter 2 and 3 will provide the foundation to address the research questions. Chapter 2 defines part-time entrepreneurship and highlights its economic and social relevance. In chapter 3, the research questions and contribution of this dissertation are introduced in detail, based on a review of the academic literature. Research topic I of this dissertation addresses the first set of research questions relating to the impact of societal culture on part-time and full-time entrepreneurship. Specifically, chapter 4 examines the differential, direct impact of societal cultural practices on part-time and full-time entrepreneurship and establishes key differences on the macro-level and the micro-level. This is achieved through a multi-country, multi-level analysis. Chapter 5 examines the indirect impact of societal culture on part-time and full-time entrepreneurship and focuses on cross-level interactions to unveil the moderating effect of collectivism on the relationship between education and part-time and full-time entrepreneurship.

Figure 1-1: Structure of this dissertation



Research topic II of this dissertation relates to the transition from part-time to full-time entrepreneurship. Specifically, chapter 6 establishes the motivational determinants of a transition from part-time to full-time entrepreneurship, utilizing a German data set specifically collected to study part-time entrepreneurship. This dissertation is concluded by chapter 7 which summarizes the findings and policy implications and provides avenues for future part-time entrepreneurship research.

2. Characteristics of part-time entrepreneurship

In light of more flexible, more varied and less straight forward career patterns (Arthur and Rousseau, 2001; Kalleberg, 2000), entrepreneurship can be a career, a pastime, a means to earn additional income, a hobby or a learning endeavor, just to name a few. Part-time entrepreneurship has some advantages over full-time entrepreneurship; it entails the flexibility of being self-employed but leaves time for family commitments, a wage job, or education. Chapter 2.1 will outline the variety of labels and definitions used for part-time entrepreneurship. This is followed by chapter 2.2 which will highlight the economic and social importance of part-time entrepreneurship and chapter 2.3 will illustrate the advantages and disadvantages of part-time entrepreneurship.

2.1 Defining part-time entrepreneurship

Part-time entrepreneurship is a relatively new research area and several labels have been attributed to this status, all of them are associated with different definitions and implications. Definitions of part-time entrepreneurship have regularly been based on the type of primary occupation, the weekly hours worked, the amount or percentage of income generated or the self-perception. Table 2-1 provides an overview of the definitions used in prior research.

As can be seen in Table 2-1, six different labels for part-time entrepreneurship have been used in a sample of 13 studies. Moreover, four different definitions have been associated with the label ‘part-time entrepreneur’. Furthermore, different labels have been used for virtually the same definition, i.e., ‘hybrid entrepreneur’, ‘Nebenerwerbsselbstständig’, and ‘part-time entrepreneur (2)’. These definitions are mainly based on the ‘main occupation’ (e.g., Burmeister-Lamp et al., 2012; Folta et al., 2010; Markantoni et al., 2013; Petrova, 2010, 2012; Piorkowsky et al., 2013). Alternative definitions rely on ‘income’ (e.g., Mungaray and Ramirez-Urquidy, 2011; Wennberg et al., 2006), ‘hours worked’ (i.e., inmit, 2013) or the ‘self-perception’ of the entrepreneur (i.e., Metzger, 2014; Minniti et al., 2006).

Table 2-1: Definitions of part-time entrepreneurship

Label	Definition	Key aspect(s)	Used by
Hybrid entrepreneur	An individual who works in a wage-job and in an own business.	Main occupation	Burmeister-Lamp et al. (2012); Folta et al. (2010); Raffiee and Feng (2014); Thorgren et al. (2014)
Nebenerwerbs-selbstständig	An individual who works in a wage-job and an own business.	Main occupation	Piorkowsky et al. (2013)
Part-time entrepreneur (1)	A household which derives less than 100% of household income from an own business.	Income	Mungaray and Ramirez-Urquidy (2011)
Part-time entrepreneur (2)	An individual who works in a wage job some time and in an own business the rest of the time.	Main occupation	Petrova (2010) (2012)
Part-time entrepreneur (3)	An individual who has a main non-entrepreneurial occupation and spends a maximum of 35 hours a week working in an own business which generates a maximum of 50% of the individual's total income.	Main occupation, Hours worked, Income	inmit (2013)
Part-time entrepreneur (4)	Self-reported entrepreneurial status of individual.	Self-perception	Metzger (2014); Minniti et al. (2006)
Part-time self-employed	An individual who earns less than 50% of total income from an own business.	Income	Wennberg et al. (2006)
Side activity entrepreneur	An individual in a rural area who works in a wage-job and in an own small side business.	Main occupation	Koster et al. (2010); Markantoni et al. (2013)
Zuerwerbs-selbstständig	An individual who works in no wage-job but in an own part-time business.	Main occupation	Piorkowsky et al. (2013)

All of those definitions in Table 2-1 have merit, but especially the more stringent definitions are also prone to shortcomings. For instance, definitions which only consider wage-employed individuals (e.g., Folta et al., 2010; Raffiee and Feng, 2014) omit the fact that part-time entrepreneurial ventures might be combined with non-wage-earning main occupations such as studying or looking after the home. Furthermore, definitions relying on income represent a measurable definition but are also prone to miss-categorization of part-time entrepreneurs. This is particularly worrying because income from entrepreneurship is often under-reported (Åstebro and Chen, 2014; Feldman and Slemrod, 2007) and the income might not correspond with the perceived main occupation (Metzger, 2014).

The aim of this dissertation is to advance part-time entrepreneurship research and to capture all facets of part-time entrepreneurship. To achieve this goal, a broad definition of part-time entrepreneurship shall be used.

A part-time entrepreneur, in this dissertation, is defined as an entrepreneur who indicates entrepreneurship not as the main occupation.

This definition captures part-time entrepreneurship at the most basic level, the individual's perception and allows for any main occupation, any number of hours worked and any income generated (Metzger, 2014). Such a broad definition might not be suitable in all circumstances, but it captures all forms of part-time entrepreneurship, regardless how inconceivable an individual's situation might be for a researcher. To avoid any confusion, only 'part-time entrepreneurship' and none of the other labels stated in Table 2-1 shall be used henceforth. To accompany the broad definition of part-time entrepreneurship, and since "the simplest kind of entrepreneurship is self-employment" (Blanchflower and Oswald, 1998: 27) this dissertation will use the terms 'entrepreneur' and 'self-employed' interchangeably.

2.2 Importance and characteristics of part-time entrepreneurship

Blending entrepreneurship with other occupations, both paid and non-paid, has become common and is likely to increase in the future, with employment patterns changing towards patchwork careers and an increasing desire for self-fulfillment (Burke et al., 2008; Castells, 2000; Kalleberg, 2000). Furthermore, part-time entrepreneurship also gained momentum through the emergence of telecommunications and Internet technologies which have created new business opportunities and enabled novel business and work models (Hill et al., 1998; Ramsey and Ibbotson, 2005). Table 2-2 highlights the magnitude of part-time entrepreneurship in several countries by showing relative frequencies and estimating the absolute number of part-time entrepreneurs based on the Global Entrepreneurship Monitor (GEM) (Bosma et al., 2008) and the Flash Eurobarometer (European Commission, 2012).

Table 2-2: Absolute and relative importance of part-time entrepreneurs

Part-time entrepreneurs	GEM 2007[a]		Flash Eurobarometer 2012[b]	
	in % of population	in million	in % of population	in million
Austria	2.1%	0.1	5.8%	0.4
Belgium	1.4%	0.1	2.8%	0.3
Brazil	8.4%	11.4	2.9%	4.4
China	3.3%	32.7	11.9%	132.0
Croatia	1.9%	0.1	10.7%	0.4
Denmark	4.9%	0.2	4.8%	0.2
Finland	6.1%	0.2	4.9%	0.2
France	1.2%	0.5	3.8%	2.1
Greece	3.6%	0.3	4.6%	0.4
Hungary	3.7%	0.2	6.4%	0.5
Iceland	8.4%	0.0	8.6%	0.0
India	3.6%	30.1	15.3%	136.0
Ireland	4.8%	0.1	8.0%	0.3
Israel	1.9%	0.1	5.2%	0.3
Italy	1.1%	0.4	3.1%	1.6
Japan	4.5%	3.5	4.9%	5.5
Latvia	1.9%	0.0	9.6%	0.2
Netherlands	4.1%	0.5	5.0%	0.7
Norway	7.0%	0.2	7.0%	0.3
Portugal	4.5%	0.3	5.5%	0.5
Romania	0.7%	0.1	8.6%	1.5
Russian Federation	1.5%	1.5	15.7%	18.9
Slovenia	1.5%	0.0	5.3%	0.1
Spain	1.4%	0.4	5.3%	2.1
Sweden	4.1%	0.3	6.0%	0.5
Switzerland	4.3%	0.2	6.7%	0.5
Turkey	2.0%	1.0	8.5%	4.7
United Kingdom	2.6%	1.1	5.6%	3.0
United States	5.1%	10.7	10.2%	25.7

Notes: own calculations based on European Commission (2012), Bosma et al. (2008), The World Bank (2014)
[a] GEM based on population aged 18–64 years
[b] Flash Eurobarometer based on population aged 15+ years

Table 2-2 highlights the magnitude of part-time entrepreneurship. Regardless of the data source, the number of part-time entrepreneurs is very large, and a considerable impact on the economy and society can be expected. Considering that both China and India each have well over 130 million part-time entrepreneurs (based on the Flash Eurobarometer), highlights the importance of part-time entrepreneurship. Moreover, a sizable number of part-time entrepreneurs exist in developed countries. For instance, the table reveals 10.2% of the population engages in part-time entrepreneurship in the USA and 5.6% of the population in the UK, based on the Flash Eurobarometer (5.1% and 2.6% respectively based on GEM). The large numbers of part-time entrepreneurs around the globe warrant a closer examination.

Table 2-2 also displays large disparities regarding the number of part-time entrepreneurs, which highlights the problems of the definition outlined in chapter 2.1 and the measurement issues. The most obvious difference between the two data sources are the age groups taken into consideration. The Flash Eurobarometer considered all individuals aged 15 years and older during the data collection (see chapter 4.3 for more detail); whereas the GEM data collection was targeted at individuals aged 18–64 years. Consequently, the figures based on GEM do not necessarily capture all students and retirees who engage in part-time entrepreneurship. Adding to the differences in definition, the questions used to determine part-time entrepreneurship were differently framed, which could have significantly impacted responses (Presser et al., 2004; Zaller and Feldman, 1992). For instance, during the GEM data collection, individuals were asked "are you working full-time in this business" and individuals indicating 'no' were classified as part-time entrepreneurs (Bosma et al., 2008). Contrarily, the Flash Eurobarometer asked individuals to state their main occupation, and later asked if they also engage in entrepreneurial activity (European Commission, 2012). Finally, the differences might to some extent also be explained by the five years in between the two data collections during which time part-time entrepreneurship might have increased significantly (compare Figure 2-1).

The Flash Eurobarometer covers a broader age group and aligns more with this dissertation's broad definition of part-time entrepreneurship. Thus, the Flash Eurobarometer will be used in chapter 2.2.1 and 2.2.2 to further highlight the importance of part-time entrepreneurship. To gain a more nuanced understanding of part-time entrepreneurship, chapter 2.2.1 will illustrate the economic magnitude of part-time entrepreneurship, while chapter 2.2.2 will consider the social importance of part-time entrepreneurship.

2.2.1 Importance for the economy

Part-time entrepreneurship plays an important role in the economy (inmit, 2013; Markantoni et al., 2013). To understand the relative magnitude of part-time and full-time entrepreneurship, Table 2-3 displays part-time and full-time entrepreneurship as a percentage of the population. Furthermore, Table 2-3 breaks down part-time entrepreneurship according to the main occupation being wage-earning or non-wage-earning.

Table 2-3: Full-time and part-time entrepreneurship rates

Entrepreneurship rates	**Full-time** entrepreneurs in % of population	**Part-time** entrepreneurs in % of population	**Part-time entrepreneurs thereof**	
			Wage-earning main occupation in %	**Non-wage-earning** main occupation in %
Austria	11.6	5.6	54	46
Brazil	32.0	3.0	50	50
China	9.0	11.7	34	66
Czech Republic	13.2	7.7	43	57
Denmark	6.7	4.9	49	51
Finland	8.1	5.0	61	39
France	6.3	3.8	53	48
Germany	9.8	3.5	63	37
Greece	16.0	4.5	68	32
Hungary	6.1	6.5	51	49
India	21.9	15.4	47	53
Ireland	13.2	8.1	68	32
Israel	14.9	5.2	71	29
Italy	11.8	3.1	50	50
Japan	12.3	5.0	75	25
Korea (Republic of)	15.6	2.7	69	31
Netherlands	14.0	5.1	32	68
Poland	11.8	5.6	50	50
Portugal	9.5	5.6	55	45
Russian Federation	7.3	15.7	74	26
Slovenia	5.2	5.2	62	38
Spain	9.6	5.4	77	23
Sweden	5.3	6.0	63	37
Switzerland	12.9	6.8	77	23
Turkey	11.6	8.0	70	30
United Kingdom	8.2	5.6	54	46
United States	12.3	10.2	63	37
Average	**11.8**	**6.5**	**59**	**41**

Notes: own calculations based on European Commission (2012); Population aged 15+ years

As highlighted in Table 2-3 a sizable portion of the population aged 15+ years is engaged in part-time entrepreneurship around the word. It can be observed in Table 2-3 that on average 6.5% of the population in the sample countries are part-time entrepreneurs, which is lower than the average percentage of full-time entrepreneurs (11.8%) but indicates that roughly 1 in 3 entrepreneurs is a part-time entrepreneur. It is also apparent in Table 2-3 that the percentage of part-time entrepreneurs varies widely across countries, ranging from 2.7% of the population in the Republic of Korea to 15.7% in the Russian Federation. Furthermore, it can be observed that the majority of part-time entrepreneurs (59%) do have a wage-earning main

occupation. Even if many part-time businesses are small, the sizable percentage of part-time entrepreneurs in the population has a considerable economic impact.

To illustrate the economic magnitude and rise of part-time entrepreneurship during the last few decades, the case of Germany will be used as an example. According to Table 2-3, a comparatively low 3.5% of the German population engages in part-time entrepreneurship. This figure is close to the percentage of part-time entrepreneurs found in the Micro Census which is based on a comprehensive survey gathering information on over 800,000 people living in Germany (Fritsch and Grotz, 2002; Piorkowsky et al., 2013). Based on this data, 32% of all entrepreneurs in Germany are part-time entrepreneurs (Piorkowsky et al., 2013). Part-time entrepreneurship has risen tremendously during the last two decades. Figure 2-1 illustrates the absolute numbers of part-time entrepreneurs compared to full-time entrepreneurs for a time span of 20 years.

Figure 2-1: Growth of part-time and full-time entrepreneurship in Germany

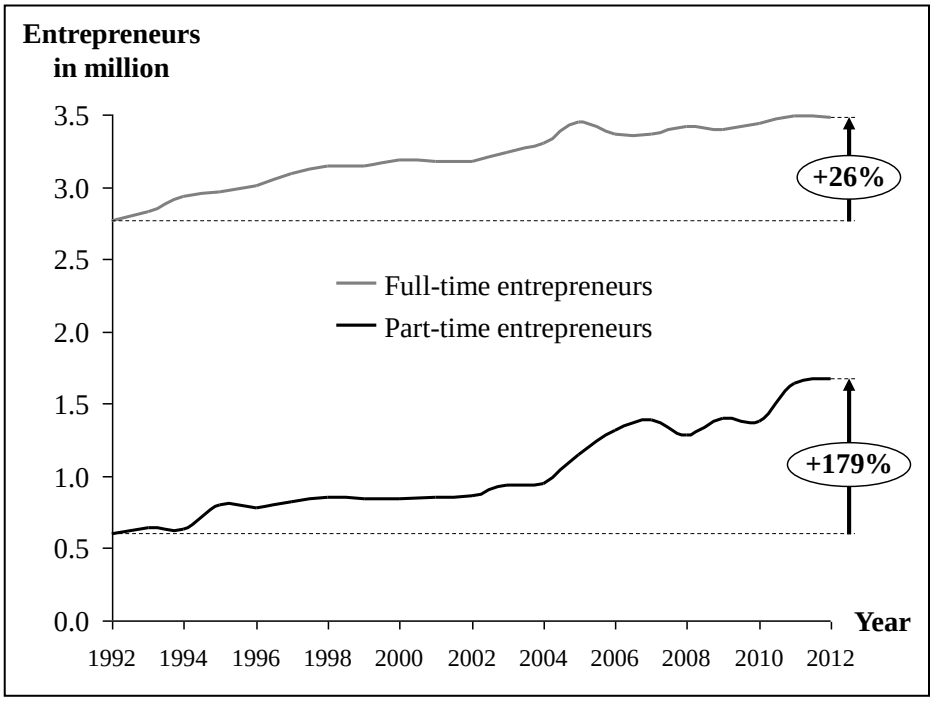


Figure based on data from Piorkowsky et al. (2013) and Piorkowsky and Petermann (2013)

As shown in Figure 2-1, from 1992 to 2012, the number of full-time entrepreneurs in Germany increased by 26%, whereas the number of part-time entrepreneurs increased by a staggering 179% (Piorkowsky et al., 2013; Piorkowsky and Petermann, 2013). Those increases correspond with a compounded annual growth rate for full-time entrepreneurship of 1% and an impressive 5% for part-time entrepreneurship. Some of this growth may be

attributed to the transformation process in East Germany, where the percentage of self-employed rose drastically in 1991 after the reunification and slowly converged with the percentage of self-employed in West Germany from 1992 onwards (Fritsch et al., 2012). In 2012, it is estimated that there were 3,475,000 full-time entrepreneurs as well as 1,676,000 part-time entrepreneurs in Germany (Piorkowsky and Petermann, 2013).

The importance of part-time entrepreneurship becomes even more striking when considering that 65% of new ventures in Germany 2013 were started part-time (Metzger, 2014). This is in line with international research indicating that part-time entrepreneurship is more prevalent in new ventures than in established businesses (Bosma et al., 2008; Minniti et al., 2006). For Germany, the KfW Gründungsmonitor (Hagen et al., 2012; Metzger, 2014) annually reports characteristics of entrepreneurs who founded their business within the 12 months prior to the survey. In Germany, the number of new venture creations has fluctuated widely, as can be seen in Figure 2-2.

Figure 2-2: Full-time and part-time founders in Germany

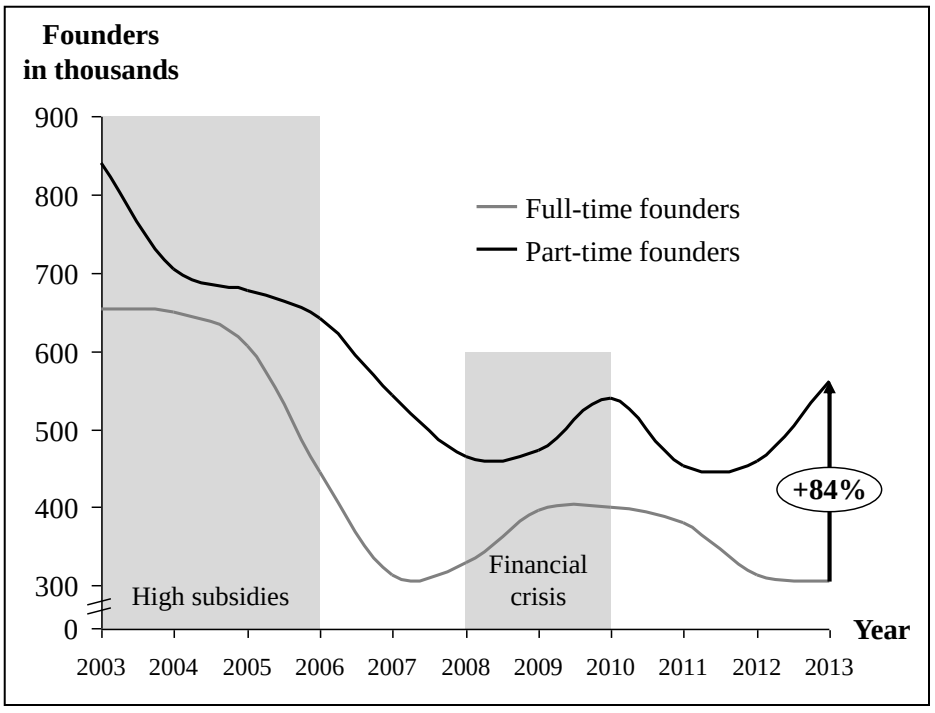


Figure based on data from Hagen et al. (2012) and Metzger (2014)

As illustrated by Figure 2-2, from 2003 to 2013, every year the majority of businesses were started part-time. The number of new part-time businesses was 84% higher in 2013 than the number of new full-time businesses (562,000 vs. 306,000) (Metzger, 2014). The significant drop of new ventures in 2006 and 2007 in Figure 2-2 can be attributed to the discontinuation

of generous subsidies for unemployed founders (labelled Existenzgründungszuschuss) which provided unemployed founders with subsidies for up to three years of 240–600 Euro per month (Bergmann and Sternberg, 2007; Sandner et al., 2008). The increase of new business foundations in 2009 and 2010 can be attributed to the financial crisis which decreased wage-employment opportunities in Germany (Kohn et al., 2010), as well as the introduction of a new company type in late 2008 (UG (haftungsbeschränkt)) with basically abolished capital requirements and boosted foundation rates (Braun et al., 2013).

The economic impact of part-time entrepreneurship in Germany is sizable. New part-time businesses founded in 2013 were estimated to have invested 2.8 billion Euro in start-up capital (Metzger, 2014). Furthermore, planned direct investments of established part-time entrepreneurs in 2012 in Germany was estimated at 2.3 to 3.3 billion Euro within 12 months and existing part-time entrepreneurs were estimated to create employment of 230,000 to 290,000 additional full-time equivalents (FTEs) within 24 months (inmit, 2013). The investment and employment effects were found to be particularly high for part-time entrepreneurs who intend to transition to full-time entrepreneurship (inmit, 2013).

As the case of Germany shows, part-time entrepreneurship represents an important aspect of the economy. Additionally, a large proportion of part-time entrepreneurs would not enter full-time entrepreneurship (Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014). Consequently, part-time entrepreneurship fosters economic development by increasing the overall number of entrepreneurs in an economy and thus helps to drive innovation, caters for market niches and increases the human capital in the economy (Liñán and Fernandez-Serrano, 2014; Sanyang and Huang, 2010; Sautet, 2013). Furthermore, part-time entrepreneurship can provide a valuable experience for the transition into full-time entrepreneurship. Part-time entrepreneurs, who complete the transition to full-time entrepreneurship, exhibit significantly higher survival rates compared to businesses which are started on a full-time basis (Raffiee and Feng, 2014). Thus part-time entrepreneurship not only enables more individuals to engage in entrepreneurship but it ultimately also enhances the quantity and quality of full-time entrepreneurs in an economy.

2.2.2 Importance for society

Part-time entrepreneurship is not only of economic relevance but also impacts society. Part-time entrepreneurship affects society in several ways. Part-time entrepreneurship is often entered for lifestyle and nonmonetary reasons (Folta et al., 2010; Koster et al., 2014), which helps to increase the overall well-being in society. Entrepreneurs are generally happier and

part-time entrepreneurs can obtain nonmonetary benefits similar to full-time entrepreneurs (Cooper and Artz, 1995; Folta et al., 2010; Luke et al., 2007; Naudé et al., 2014). Additionally, part-time entrepreneurship also benefits the larger society by servicing small market niches which might not be served otherwise (Markantoni et al., 2013). The social importance of part-time entrepreneurship becomes most apparent when considering the specific benefits for different sub-categories of part-time entrepreneurs. Table 2-4 displays the main occupation of part-time entrepreneurs, with a non-wage-earning main occupation for several countries.

Table 2-4: Part-time entrepreneurs with non-wage-earning main occupation

Main occupation	**Looking after the home** in %	**Student** in %	**Retired** in %	**Seeking a job** in %	**Other** in %
Austria	0	14	73	14	0
Brazil	6	18	76	0	0
China	17	14	45	24	0
Czech Republic	10	17	20	47	7
Denmark	0	4	92	0	4
Finland	7	7	67	20	0
France	8	24	42	24	3
Germany	18	9	45	27	0
Greece	25	19	25	25	6
Hungary	19	19	52	11	0
India	10	24	24	38	3
Ireland	5	11	74	11	0
Israel	19	25	19	25	13
Italy	5	24	51	16	3
Japan	6	19	31	19	25
Korea (Republic of)	41	24	29	6	0
Netherlands	0	32	50	18	0
Poland	18	36	15	26	5
Portugal	28	30	9	25	8
Russian Federation	6	0	82	6	6
Slovenia	36	0	36	27	0
Spain	50	30	10	10	0
Sweden	14	9	54	17	6
Switzerland	15	38	19	27	0
Turkey	20	13	53	0	13
United Kingdom	43	38	4	14	0
United States	50	20	30	0	0
Average	**17**	**21**	**39**	**19**	**4**

Notes: own calculations based on European Commission (2012); Population aged 15+ years

For all the non-wage-earning, part-time entrepreneurial sub-categories in Table 2-4, part-time entrepreneurship can offer many benefits for the individual and society. On average 17% indicated ‘looking after the home’ as their main occupation. For those individuals, part-time entrepreneurship can offer flexible employment which is compatible with the duties at home, such as caring for children. This can increase the individuals’ well-being since part-time entrepreneurship is one way to introduce variation and economic purpose into life (Strohmeyer et al., 2006; Thompson et al., 2009). For the on average 21% who indicated being a student as their main occupation, part-time entrepreneurship also has many benefits. Students can earn money through their part-time entrepreneurial activity and simultaneously gain valuable work experience which can be beneficial in their careers later on; be it in wage-employment or in entrepreneurship. Retirees represent the largest fraction of non-wage-earning part-time entrepreneurs with 39% on average. Part-time entrepreneurship can be a very rewarding activity for retirees. The flexibility of part-time entrepreneurship allows retirees to enjoy retirement but at the same time remain economically active, earn some additional income and smoothen the transition from working life to retirement, which can be very stressful and depressing (Kerr and Armstrong-Stassen, 2011; Reitzes and Mutran, 2004; Small, 2011; Thorgren et al., 2014; Weber and Scharper, 2004). Interestingly, the percentage of retirees engaging in part-time entrepreneurship does not seem to correlate with the average pension payments of a country. For instance 92% of part-time entrepreneurs with a non-wage-earning main occupation are retirees in Denmark where the net relative pension level compared to prior wage-employment is 73.8% and thus rather high (OECD, 2013). In contrast, only 4% of non-wage-earning part-time entrepreneurs in the UK are retirees but the net relative pension level compared to prior wage-employment is only a low 39.8% (OECD, 2013). Hence, part-time entrepreneurship among retirees does not seem to be necessity driven. Furthermore, by engaging in part-time entrepreneurship, retirees can benefit the society through keeping their vast experience accessible for others. For the on average 19% who indicated ‘looking for a job’ as their main status, part-time entrepreneurship also offers many benefits. Part-time entrepreneurship enables those individuals to stay economically active, earn some additional income and avoid the stigma associated with long-term unemployment (Jackman and Layard, 1991). Moreover, those part-time entrepreneurs develop their skills, which might help them to find a wage job or they might become full-time necessity entrepreneurs (Block et al., 2015). Finally, on average only 4% indicated ‘other’ as their main occupation.

After looking at part-time entrepreneurs with a non-wage-earning main occupation, Table 2-5 shows the distribution of part-time entrepreneurs with a wage-earning main occupation.

Table 2-5: Part-time entrepreneurs with wage-earning main occupation

Main occupation	**Professional** in %	**Manager** in %	**Civil servant** in %	**Employee** in %	**Manual worker** in %
Austria	8	38	4	42	8
Brazil	0	47	0	41	12
China	0	7	40	47	7
Czech Republic	30	17	13	17	22
Denmark	4	29	4	4	58
Finland	4	17	9	57	13
France	14	36	7	36	7
Germany	16	5	42	26	11
Greece	15	41	6	38	0
Hungary	7	43	11	25	14
India	27	27	15	31	0
Ireland	28	18	8	10	38
Israel	18	36	3	36	8
Italy	11	24	8	27	30
Japan	36	17	4	32	11
Korea (Republic of)	21	13	8	18	39
Netherlands	31	0	25	31	13
Poland	10	10	8	59	13
Portugal	19	6	6	22	45
Russian Federation	6	45	12	37	0
Slovenia	0	17	6	67	11
Spain	9	24	9	53	6
Sweden	21	24	10	37	9
Switzerland	14	15	0	53	18
Turkey	23	37	6	26	9
United Kingdom	1	40	6	37	16
United States	12	41	6	35	6
Average	**14**	**25**	**10**	**35**	**16**

Notes: own calculations based on European Commission (2012); Population aged 15+ years
Professionals refer to employed doctor, lawyer, accountant, architect, etc.

Employees represent the largest fraction in Table 2-5 with 35% on average. However, considering the number of employees in the whole population, professionals and managers are probably more likely to engage in part-time entrepreneurship than individuals in the other categories which can be attributed to the strong positive association of high levels of education and part-time entrepreneurship (compare chapter 3.1 and 5.2.1). Regardless of the type of wage-earning main occupation, part-time entrepreneurship has several potential benefits for the individual and society. Part-time entrepreneurship enables individuals to be

their own boss, to engage in an area they are passionate about, to earn additional income, to build an entrepreneurial career, to utilize skills that are underutilized in their job, or to gain higher hourly earnings (Folta et al., 2010; Thorgren et al., 2014). All those benefits of part-time entrepreneurship can contribute to increase the quality of life for individuals, with a wage-earning main occupation, which ultimately fosters a happier and more satisfied society. However, part-time entrepreneurship is also associated with several negative aspects and is not suitable for everybody and will be elaborated in the following chapter.

2.3 Positive and negative aspects of part-time entrepreneurship

Part-time entrepreneurship is associated with several positive and negative aspects (Folta et al., 2010; Koster et al., 2014). Table 2-6 outlines important advantages and disadvantages of part-time entrepreneurship.

Table 2-6: Advantages and disadvantages of part-time entrepreneurship

Advantages	Disadvantages
• Flexibility • Autonomy and self-realization • Manageable risk • Additional source of income • Social security through wage job • Synergies with wage job • Learning for full-time entrepreneurship	• Strain of aligning multiple occupations • Limited dedication to entrepreneurship • Negative impact on family and job • Limited availability for customers • Low acceptance in society

The advantages and disadvantages listed in Table 2-6 do not necessarily apply to every part-time entrepreneur, and depending on the personal circumstances, positive or negative aspects might outweigh. Part-time entrepreneurship has been associated with many advantages, part-time entrepreneurship is generally more flexible than full-time entrepreneurship and wage-employment since a part-time entrepreneur can rather independently determine when and where to work (Strohmeyer et al., 2006; Thorgren et al., 2014). Furthermore, part-time entrepreneurship enables individuals to gain autonomy and self-realization which are important drivers of entrepreneurship in general (Kolvereid, 1996; Korunka et al., 2003; Koster et al., 2014). Additionally, compared to full-time entrepreneurship, part-time entrepreneurship is generally less risky since it requires less start-up capital, less time investment and has lower opportunity costs since part-time entrepreneurs do not have to

sacrifice their main occupation. Those aspects help to lower the entry barriers and entrepreneurial risk (Petrova, 2012; Piorkowsky et al., 2013). Another important advantage of part-time entrepreneurship is the possibility to continue gaining steady income and social security through wage-employment. Thus part-time entrepreneurs can experiment more freely and there is no immediate pressure for the business to generate profits (Folta et al., 2010; Koster et al., 2014). Moreover, part-time entrepreneurship can generate substantial additional income which can help the part-time entrepreneur to overcome economic hardship and can be a means to diversify the sources of income (Folta et al., 2010; Mungaray and Ramirez-Urquidy, 2011). Part-time entrepreneurship can also be a way to reap synergies with the wage job. For instance, a professor might run a part-time consulting business which offers higher hourly earnings than the main occupation but is contingent on maintaining the main occupation, in the case of the professor the associated prestige (Folta et al., 2010). Finally, part-time entrepreneurship can also be a learning environment to refine a business model and entrepreneurial skills (Raffiee and Feng, 2014; Wennberg et al., 2006; chapter 3.3).

However, part-time entrepreneurship is also associated with negative aspects which can levy a large toll on the entrepreneur, the entrepreneur's family and social environment (Baumol, 1996; Lockwood et al., 2006; Wright and Zahra, 2011). Foremost, part-time entrepreneurship can be particularly stressful since the entrepreneur's attention has to be split between several occupations (compare chapter 6). Moreover, part-time entrepreneurs are not able to commit their full dedication, time and energy to the part-time business. This might significantly impact business success and prevent the venture from reaching its full potential (Folta et al., 2010). Another disadvantage relates to the impact part-time entrepreneurship can have on the family and a wage job. Since time and attention have to be split among different occupations and roles, part-time entrepreneurship can have a detrimental impact on wage-job performance and family life (Lévesque and MacCrimmon, 1997). Finally, anecdotal evidence suggests, that part-time entrepreneurship is not as highly regarded as full-time entrepreneurship in society (Lutz and Luck, 2011) which might create additional psychological stress. Part-time entrepreneurs are often not taken seriously since they are not fully committed to their venture and their entrepreneurial activities are considered amateur (Lutz and Luck, 2011).

Consequently, while part-time entrepreneurship can offer many benefits for the individual, the economy and the society (compare chapter 2.2.1 and 2.2.2), part-time entrepreneurship is not suitable for everybody in every circumstance. As prior research indicated, part-time entrepreneurship does require a high work tolerance and superior (time) management skills (Lévesque and MacCrimmon, 1997).

3. Part-time entrepreneurship in academic research

Academic research strives to establish relationships and determinants which might not apply to every specific real-world situation, but enable researchers to measure, predict and understand processes (Birley, 1985; Busenitz and Lau, 1996; Hayton and Cacciotti, 2013; Jack and Anderson, 2002; Simon et al., 2000). Part-time entrepreneurship only recently received attention in academic literature. Busenitz and Lau (1996) established a model which can be used to structure the entrepreneurial process for entrepreneurship in general. It consists of initial determinants of entrepreneurship, which include micro- and macro-level determinants (Autio et al., 2013; Davidsson and Honig, 2003; Freytag and Thurik, 2007; Haus et al., 2013; Newbert et al., 2013; Nicolaou et al., 2008). Those determinants influence the cognition of potential entrepreneurs (De Carolis and Saparito, 2006; Lim et al., 2010; Mitchell et al., 2000; Mitchell et al., 2002; Ward, 2004; Zahra et al., 2005). For future entrepreneurs, the venture creation decision arises from this cognitive process (Davidsson and Honig, 2003; Dimov, 2010; Mitchell et al., 2000). Finally, once the venture creation decision has been made and executed, venture development decisions follow, influenced by the determinants of entrepreneurship (Baum and Locke, 2004; Cassar, 2007; Davidsson, 1989; Unger et al., 2011). This process of entrepreneurial activity is visualized in Figure 3-1.

Figure 3-1: Determinants of entrepreneurship

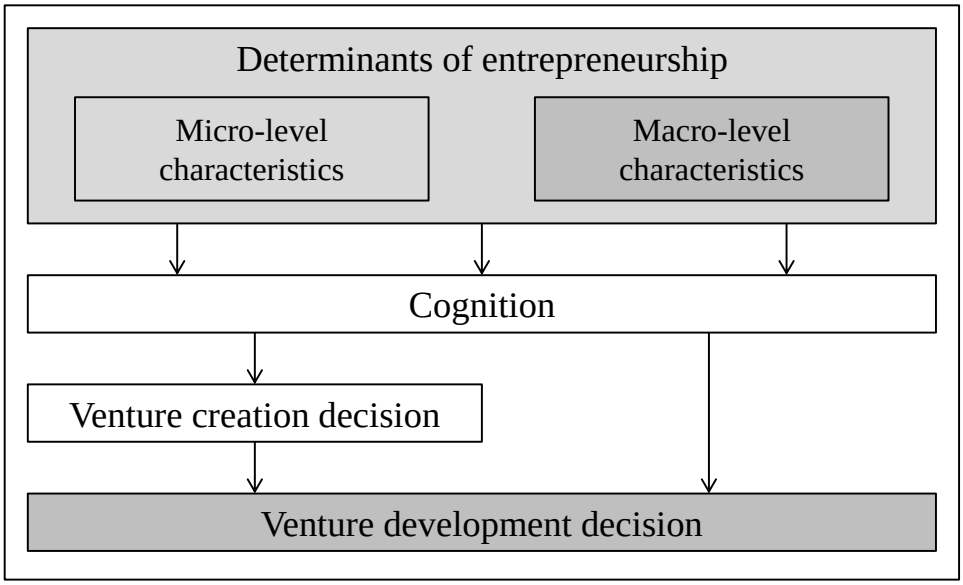


Figure adapted from Busenitz and Lau (1996)

This dissertation will advance academic research in the highlighted areas of Figure 3-1 by enhancing and differentiating previous findings with a focus on part-time entrepreneurship.

The focus of this dissertation will be the areas highlighted in dark grey ‘macro-level characteristics’ (research topic I) and ‘venture development decision’ (research topic II) but in the process, this dissertation will also advance research regarding ‘micro-level characteristics’. Part-time entrepreneurship has become, quantitatively and qualitatively, an important aspect of entrepreneurship (compare chapter 2.2). Part-time entrepreneurship as a form of entrepreneurship is similar to full-time entrepreneurship in some respects. Entering part-time entrepreneurship requires virtually the same steps a full-time business start-up would require. However, part-time entrepreneurship research is still young and many aspects of this distinct form of entrepreneurship remain un-researched (Burke et al., 2008; Folta et al., 2010).

Chapter 3 will outline the existing academic research and highlight the research gaps this dissertation aims to address. Chapter 3.1 will illustrate the micro-level characteristics of part-time entrepreneurship; chapter 3.2 will address the macro-level characteristics of part-time entrepreneurship. Finally, chapter 3.3 examines the transition decision from part-time to full-time entrepreneurship, which represents a venture development decision.

3.1 Micro-level determinants of part-time entrepreneurship

Determinants of entrepreneurial activity represent a heavily researched area in entrepreneurship literature (Collins et al., 2004; Martin et al., 2013; Stam et al., 2014; Zhao and Seibert, 2006). Recent research has highlighted many micro-level and conceptual differences between part-time and full-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014; Wennberg et al., 2006) which are closely associated with the advantages and disadvantages of part-time entrepreneurship described in chapter 2.3. Part-time entrepreneurship is not just full-time entrepreneurship on a smaller scale, it is entered for different reasons than full-time entrepreneurship and part-time entrepreneurship also has significantly different micro-level determinants compared to full-time entrepreneurship (Folta et al., 2010; Petrova, 2010, 2012; Raffiee and Feng, 2014). Table 3-1 summarizes the micro-level findings of published research which focuses on part-time entrepreneurship or at least explicitly considers part-time entrepreneurship.

Table 3-1: Prior findings on micro-level determinants of part-time entrepreneurship

Author(s)	Research question	Method	Sample	Major findings
Burmeister-Lamp et al. (2012)	What determines the time allocation of part-time entrepreneurs?	Empirical	Experimental	Entrepreneurs have a regulatory focus when allocating time, students focus on utility.
Folta et al. (2010)	What are the determinants of part-time entrepreneurship?	Empirical	Swedish longitudinal	Part-time and full-time entrepreneurship differ regarding switching costs, human capital and uncertainty. Part-time entrepreneurship is a distinct form of entrepreneurship.
Koster et al. (2010)	What motivates individuals to enter part-time entrepreneurship?	Empirical	Dutch survey	Part-time entrepreneurs are in-between classical entrepreneurs (profit oriented) and lifestyle entrepreneurs (quality of life oriented).
Lévesque and MacCrimmon (1997)	What influences the time allocation of entrepreneurs?	Analytical	n/a	Entrepreneurial start-up can be funded through wage-employment. Individuals with high work tolerance are capable and more likely to start a venture part-time.
Lévesque and Schade (2005)	How do entrepreneurs divide their time between a wage job and a new venture?	Empirical	Experimental	Behavior depends on hourly earnings of venture vs. wage job. Risk adverse individuals work more hours in wage job and have higher work tolerance.
Markantoni et al. (2013)	For which reasons is part-time entrepreneurship entered?	Empirical	Dutch survey	The majority enters part-time entrepreneurship for lifestyle reasons; financial reasons are the main objective for only 1 in 4 part-time entrepreneurs.
Mungaray and Ramirez-Urquidy (2011)	Do entrepreneurial effort and financial incentives differ for part-time and full-time entrepreneurial households?	Empirical	Mexican survey	Households with part-time entrepreneurrial income are more focused on nonmonetary benefits whereas households with only entrepreneurial income are more profit maximizing.
Petrova (2010)	Do individuals enter part-time entrepreneurship to test their entrepreneurial ability?	Empirical	US survey	Resources invested are a function of expected entrepreneurial ability.
Petrova (2012)	Is part-time entrepreneurship the result of insufficient funding?	Empirical	US survey	Part-time entrepreneurship is not entered because of financial constraints which prevent full-time entrepreneurship.
Raffiee and Feng (2014)	Do risk adverse individuals prefer part-time entrepreneurship?	Empirical	US longitudinal	Risk aversion and low core self-evaluation are significant predictors of part-time entrepreneurship.
Strohmeyer et al. (2006)	Why is part-time entrepreneurship particular popular with women?	Empirical	19 EU countries survey	Women choose part-time entrepreneurship to meet family responsibilities. Marginal family effects (children, spouse) vary significantly across countries.

Table 3-1: Prior findings on micro-level determinants of part-time entrepreneurship–continued

Author(s)	Research question	Method	Sample	Major findings
Thorgren et al. (2014)	What determines passion in part-time entrepreneurship?	Empirical	Swedish survey	Passion is an important motive to enter part-time entrepreneurship. Older part-time entrepreneurs display more passion; part-time entrepreneurs working longer hours in the business display less passion.
Wennberg et al. (2006)	What determines part-time entrepreneurship?	Empirical	Swedish longitudinal	Employer tenure positively associated with part-time but negatively with full-time entrepreneurship.

Regarding demographics, education was found to have a more positive effect on part-time than on full-time entrepreneurship (Folta et al., 2010). The strong association of education with part-time entrepreneurship can be attributed to the desire to utilize skills which are not needed in the main occupation, and to satisfy the desire for variety and autonomy which is associated with high levels of education (Cooper and Artz, 1995; Croson and Minniti, 2012; Kotter-Grühn et al., 2009; Renna, 2006; compare also chapter 5.2.1). Furthermore, part-time entrepreneurship was found to be significantly less associated with age than full-time entrepreneurship which is characterized by a pronounced inverse U-shaped age distribution (Raffiee and Feng, 2014; see also chapter 4.4.3). Part-time entrepreneurship seems to be an attractive choice for individuals at any stage of life (Kerr and Armstrong-Stassen, 2011; Strohmeyer et al., 2006). Moreover, women were found to be less discouraged from entering part-time compared to full-time entrepreneurship. This can be attributed to the lower entrepreneurial risk of part-time entrepreneurship and its flexibility through which it can be better aligned with family commitments (Strohmeyer et al., 2006). Additionally, the household situation also was shown to differ greatly regarding its impact on part-time and full-time entrepreneurship, specifically, marital status was found to be positively associated with part-time entrepreneurial entry, and family net wealth was found to be negatively associated with part-time entrepreneurship (Raffiee and Feng, 2014).

It has also been established that part-time entrepreneurship is entered for different motives than full-time entrepreneurship. Part-time entrepreneurship is not chosen as a second best option due to lack of funding (Lévesque and MacCrimmon, 1997; Petrova, 2012), instead, the driving factors behind part-time entrepreneurship are mainly nonmonetary and lifestyle-related (Markantoni et al., 2013; Mungaray and Ramirez-Urquidy, 2011; Strohmeyer et al., 2006; Thorgren et al., 2014). Consequently, profit maximization is not the main priority of most part-time entrepreneurs (Koster et al., 2014); instead part-time entrepreneurship is often

perceived as a means to increase overall quality of life. Moreover, part-time entrepreneurship can be a way to test and develop a business idea, as well as personal entrepreneurial ability (Petrova, 2010; Wennberg et al., 2006). Furthermore, research found that risk adverse individuals are more likely to choose part-time than full-time entrepreneurship (Lévesque and Schade, 2005; Raffiee and Feng, 2014).

Additionally, it was established that part-time entrepreneurship is unevenly distributed across industries. Over proportionally, many part-time entrepreneurs are found in industries with low capital requirements such as business services. Contrarily, significantly less part-time entrepreneurs engage in industries with high capital requirements such as construction, agriculture and transportation (Petrova, 2012; see also Table 6-1 for a distribution of part-time entrepreneurship across industries). Other aspects that were associated with part-time entrepreneurship include work tenure, which displays a stronger positive association with part-time than full-time entrepreneurship and is related to the opportunity costs associated with both forms of entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014; Wennberg et al., 2006). Finally, the time dedicated to a part-time venture depends on the regulatory focus of the entrepreneur and the degree to which the venture is perceived as a learning opportunity (Burmeister-Lamp et al., 2012; Petrova, 2012).

Many micro-level determinants of part-time entrepreneurship have been unearthed so far, however, as can be seen in Table 3-1 most prior research relied on single-country data. While not the focus of this dissertation, chapter 4 enhances prior findings of the micro-level determinants of part-time entrepreneurship by utilizing a multi-country data set. In this respect this dissertation contributes to the research on micro-level determinants of part-time vs. full-time entrepreneurship by confirming single-country research in a multi-country setting and unearthing some additional micro-level determinants.

3.2 Macro-level determinants of part-time entrepreneurship

Entrepreneurship, in general, is embedded in the social and cultural context of the entrepreneur (Jack and Anderson, 2002; Oyserman and Lee, 2008). This is also true for part-time entrepreneurship as the advantages and disadvantages of part-time entrepreneurship align more with some cultures than with others (compare chapter 2.3 and chapter 4.2). The advances of software and computer technology enabled researchers in recent years to simultaneously estimate the effects of micro- and macro-level characteristics by utilizing multi-level or hierarchical modelling (Hox, 2010; Peterson et al., 2012; Shepherd, 2011). So

far, multi-level entrepreneurship research has neglected part-time entrepreneurship. Prior research on part-time entrepreneurship, as shown in Table 3-1, has mainly focused on individual-level characteristics of entrepreneurship in a single-country setting (e.g., Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014) which is associated with two major weaknesses: (1) macro-level determinants of entrepreneurship such as cultural and societal aspects cannot be studied and (2) the micro-level determents of entrepreneurship found in one country might not apply in other countries. Only one macro-level study exists which considers part-time entrepreneurship (compare Table 3-2). This study examines the impact of the institutional environment on female part-time entrepreneurship and thus has a narrow focus.

Table 3-2: Prior findings on macro-level determinants of part-time entrepreneurship

Authors	Research question	Method	Sample	Major findings
Strohmeyer et al. (2006)	Does the institutional environment impact female part-time entrepreneurship?	Empirical	19 EU countries survey	Strong negative impact of conservative welfare states as well as in states with socialist-type dual-earner models.

The impact of societal culture on (full-time) entrepreneurship has been studied extensively and was found to have a significant impact (e.g., Autio et al., 2013; Davidsson, 1995; Hayton and Cacciotti, 2013). Moreover, it was shown that societal culture shapes the institutional context and thus societal culture can be regarded as the archetypal macro-level determinant of entrepreneurship (Hayton et al., 2002; Hayton and Cacciotti, 2013; Stephan and Uhlaner, 2010; Witt and Redding, 2008; Zelizer, 2010). However, the impact of societal culture on part-time entrepreneurship has not been considered so far in academic research. Addressing this research gap is the first main topic of this dissertation:

Research topic I

Does the impact of culture differ for part-time and full-time entrepreneurship?

This research question encompasses:

- What is the role of cultural dimensions regarding part-time entrepreneurship?
- Does culture moderate the association between individual-level variables?

Chapter 4 and 5 address this research question by utilizing multi-level data from 27 countries with 28,157 observations. Chapter 4 establishes the differential impact of macro-level societal cultural practices on part-time and full-time entrepreneurship. Furthermore, significant differences between determinants of part-time and full-time entrepreneurship are established regarding micro-level characteristics. The findings enhance the knowledge about part-time entrepreneurship, enabling policy makers to establish more efficient policies.

In addition to the benefits of the multi-level analysis mentioned previously, multi-level analysis can also be used to analyze the moderating effects of macro-level variables on the relationship between a micro-level variable and the dependent variable (Aguinis et al., 2013). Such effects are called cross-level interactions which enable a new and more extensive understanding of relationships (Aguinis et al., 2011; Hagedoorn, 2006; Wennberg et al., 2013). Two heavily researched areas of entrepreneurship are the impact of collectivistic culture and the impact of education on entrepreneurship. Combining the topics of collectivistic culture and education and their impact on entrepreneurship, with a particular focus on part-time entrepreneurship, is the aim of chapter 5. The results enhance the understanding of part-time and full-time entrepreneurship by showing that firmly-held beliefs about entrepreneurial determinants are moderated by the cultural context with different moderating effects for part-time and full-time entrepreneurship. The differences between part-time and full-time entrepreneurship established in chapter 4 and 5 deepen the understanding of those two forms of entrepreneurship and support the notion that part-time entrepreneurship is conceptually different from full-time entrepreneurship.

3.3 Determinants of transition from part-time to full-time entrepreneurship

An entrepreneur needs to make venture development decisions to advance the business and achieve personal goals (Ardichvili et al., 2003; Arora and Nandkumar, 2011; Cassar, 2006; Ndofor and Priem, 2011). The possibly most important venture development decision of a part-time entrepreneur concerns the transition from part-time towards full-time entrepreneurship. As outlined previously, part-time entrepreneurship can be an intermediary step between non-entrepreneurship and full-time entrepreneurship (compare chapter 2.2.1 and 2.3). Since part-time entrepreneurship is relatively easy to enter and involves significantly lower risk compared to full-time entrepreneurship, it can be a very attractive steppingstone to try a business model or to test and refine entrepreneurial skills (Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014; Wennberg et al., 2006). Research has shown that only a

minority of part-time entrepreneurs choose this way (Raffiee and Feng, 2014; Wennberg et al., 2006), but those who do are significantly more successful than full-time entrepreneurs, without part-time entrepreneurial experience (Raffiee and Feng, 2014). Table 3-3 summarizes previous research regarding the transition from part-time to full-time entrepreneurship.

Table 3-3: Prior findings on the transition from part-time to full-time entrepreneurship

Authors	Research question	Method	Sample	Major findings
Folta et al. (2010)	Are part-time entrepreneurs more likely to become full-time entrepreneurs?	Empirical	Swedish longitudinal	Part-time entrepreneurship significantly increases the probability to enter full-time entrepreneurship.
Raffiee and Feng (2014)	Are part-time entrepreneurs who transition to full-time more successful?	Empirical	US longitudinal	Significantly higher business survival rates for part-time entrepreneurs who transitioned compared to regular full-time entrepreneurs.
Wennberg et al. (2006)	Is part-time entrepreneurship a means to test and learn?	Empirical	Swedish longitudinal	Part-time entrepreneurs are 28 times more likely to become full-time entrepreneurs but are also 1.5 times more likely to terminate their business. Employer tenure negatively impacts transition propensity.

The motivation behind a transition from part-time to full-time entrepreneurship has not been studied previously. However, this transition is of huge importance, especially from an economic point of view, since a transition is accompanied with significant investment and employment effects (compare chapter 2.2.1). Understanding how entrepreneurial motives impact the decision to transition can enable policy makers to better target support programs while facilitating a better understanding of part-time entrepreneurship. Addressing this research gap is the second main topic of this dissertation:

Research topic II

Which motives impact the transition of part-time entrepreneurs to full-time entrepreneurs?

This research question encompasses:

- What is the role of financial motives?
- What is the role of non-financial motives?

Chapter 6 answers this research question by utilizing a German data set specifically collected to study part-time entrepreneurship. The results establish several motivational aspects which significantly promote or deter the transition to full-time entrepreneurship. In addition to motivational aspects, individual characteristics are also found to significantly impact the transition to full-time entrepreneurship. Chapter 6 thus constitutes an important advance in gaining a more detailed understanding of part-time entrepreneurs by highlighting several aspects which differentiate part-time entrepreneurs who transition to full-time entrepreneurship, from part-time entrepreneurs who do not transition.

4. The differential impact of societal cultural practices on part-time and full-time entrepreneurship

This chapter sheds light on the differential impact of societal cultural practices on the propensity of individuals to engage in either full-time or part-time entrepreneurial activities.[1] Thus this chapter addresses the first research question of research topic I: What is the role of cultural dimensions regarding part-time entrepreneurship? Based on multi-level analyses of a data set comprising information from 28,157 individuals from 27 countries, this chapter reveals that the impact of societal cultural practices differs significantly for part-time and full-time entrepreneurship. Chapter 4.1 will provide an introduction to the importance of cultural aspects based on which chapter 4.2 will develop the hypotheses and theory for the analyses. Chapter 4.3 introduces the data set and measures. The results are presented in chapter 4.4 and chapter 4.5 highlights the relevance of the findings for academic research and policy makers. Chapter 4 will be concluded with a brief summary and avenues for further research (chapter 4.6).

4.1 Entrepreneurship and culture

Recent research has made considerable progress to elucidate how individual-level differences explain distinctions in the inclination to either engage in entrepreneurial activities on a full-time, or a part-time basis (compare chapter 3.1). However, much is still unknown about the potential differential impact of macro-level factors, such as societal culture, on the two types of entrepreneurship (compare chapter 3.2). For several reasons, this is a significant research gap worth being addressed.

First, significant differences are expected in the effects of a societal culture on part-time and full-time entrepreneurship. This is because cultural norms and practices shape what is perceived as feasible and desirable by individuals, as well as what is supported by their economic and social environment (McMullen and Shepherd, 2006; Phan, 2004). Consequently, a significant number of studies have highlighted that societal-level cultural differences help to predict entrepreneurial activity (Autio et al., 2013; Klyver et al., 2013; Pinillos and Reyes, 2011; Stephan and Uhlaner, 2010; Wennekers et al., 2007). When considering the differences in resource investments, risk and opportunity costs, as well as the potential benefits associated with full-time and part-time entrepreneurship (Folta et al., 2010;

[1] This chapter represents an extended version of a working paper in collaboration with Jörn H. Block and Thorsten Semrau

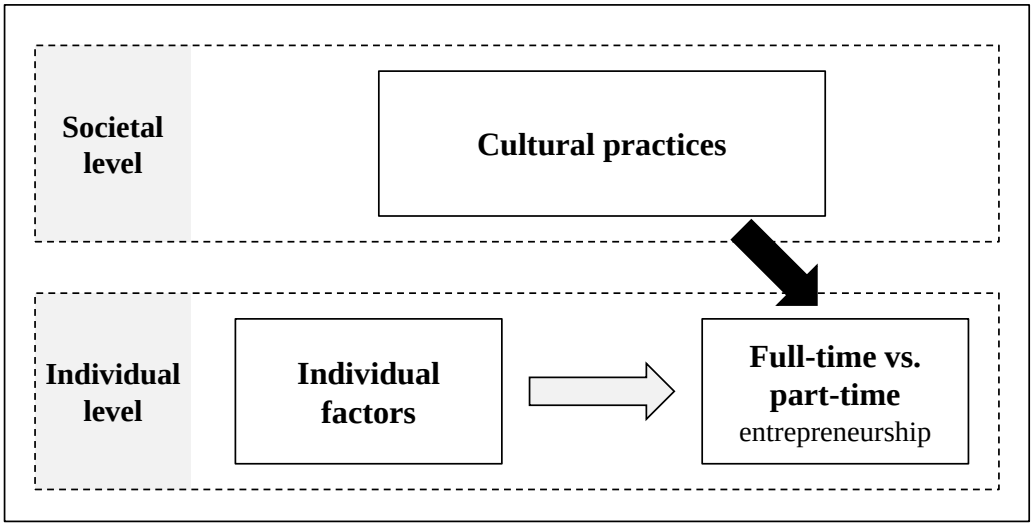
Raffiee and Feng, 2014), it is likely that the two types of entrepreneurship differ in their alignment in terms of cultural norms and practices.

The second reason is that even though the question of 'how cultural differences influence entrepreneurial activity' is one of the oldest in the field of entrepreneurship research, there is still little consensus on the consequences of how specific dimensions of societal culture are related to entrepreneurial activity (Autio et al., 2013; Hayton et al., 2002; Hayton and Cacciotti, 2013). Recent results (Thai and Turkina, 2014), however, underscore the idea that distinguishing between different types of entrepreneurship when addressing the link between culture and entrepreneurial activity may help to explain some of the discrepancies observed in earlier studies (Hayton and Cacciotti, 2013).

The third reason is that part-time entrepreneurship accounts for a relevant portion of entrepreneurial activity all over the world (Bosma et al., 2008; Minniti et al., 2006; see also chapter 2.2), but differs significantly from full-time entrepreneurship, with respect to its contribution to societies' economic and social welfare (Bosma et al., 2008; Folta et al., 2010; Petrova, 2012).

Therefore, a deeper understanding of the cultural drivers behind the two types of entrepreneurship is of considerable theoretical relevance and is highly relevant for policy-makers that aim to facilitate entrepreneurial activity to stimulate economic growth. Figure 4-1 illustrates the focus of this chapter.

Figure 4-1: The impact of societal culture on part-time and full-time entrepreneurship



The vast majority of prior research regarding part-time entrepreneurship, as outlined in chapter 3.1, has focused on the gray arrow in Figure 4-1 and only considered one level of analysis. This chapter provides a more holistic approach by focusing on the black arrow in Figure 4-1 which indicates how societal-level cultural practices impact the individual-level decision to enter part-time or full-time entrepreneurship and simultaneously considers the individual-level relationships indicated by the gray arrow.

Based on these notions, this chapter sheds light on the potential differential impact of societal cultural practices in stimulating full-time and part-time entrepreneurial activity. Grounded in a thorough literature review and anchored on the differences between full-time and part-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014) and their differential alignments with the cultural norms and practices identified in the Global Leadership and Organizational Behavior Effectiveness (GLOBE) study (House et al., 2004), five hypotheses are developed. It is expected that societal-level uncertainty avoidance, performance orientation, institutional collectivism, future orientation, and gender egalitarianism have different effects on the prevalence of full-time and part-time entrepreneurial activity. Taking into account that entrepreneurial activity is fundamentally an individual-level endeavor, whereas culture is a collective-level concept (Autio et al., 2013; Klyver et al., 2013; Shepherd, 2011), the hypotheses are tested based on a multi-level multinomial model and data from 28,157 individuals nested in 27 countries.

4.2 Theory and hypotheses

Previous research has found full-time and part-time entrepreneurship to be significantly different forms of entrepreneurial activities (Folta et al., 2010; Raffiee and Feng, 2014). A variety of individual-level predictors, such as individuals' age, level of education, and household income, were found to play significantly different roles in predicting whether individuals are engaged in part-time or full-time entrepreneurial endeavors (compare chapter 3.1). The theoretical rationale behind this finding is that individuals choose to either engage in full or part-time entrepreneurial activity according to the alignment of their individual characteristics with the particular characteristics of full-time and part-time entrepreneurship (Folta et al., 2010). Based on a similar theoretical rationale, it is suggested that the differential alignment of the characteristics of full-time and part-time entrepreneurship with societal-level cultural norms and practices will also have a significant effect on whether individuals engage in one or the other of these two types of entrepreneurial

activity. Before developing this rationale and the hypotheses in detail in chapter 4.2.3, chapter 4.2.1 highlights the impact of societal cultural practices on entrepreneurship and chapter 4.2.2 briefly describe the major differences associated with full-time and part-time entrepreneurship on the investment, as well as its outcomes.

4.2.1 Societal-level cultural practices and entrepreneurial activity

Societal culture may be defined as "the collective programming of the mind" (Hofstede, 1984: 389), which distinguishes the members of one society from the members of another. Comprising collectively held norms and beliefs, societal culture has a significant impact on what is considered legitimate within a national context, thus influencing economic actors' behaviors and consequences (Hofstede, 1980; House et al., 2004; Oyserman and Lee, 2008). Culture affects economic outcomes (Guiso et al., 2006), forms formal institutions (Greif, 1994; Witt and Redding, 2008) and impacts third person desirability (McMullen and Shepherd, 2006). More specifically, differences in culture indicate differences in the social consequences associated with certain types of economic behavior, thus reflecting differences in the degree to which specific actions are perceived as feasible and desirable by individuals and supported by individuals' economic and social environment (McMullen and Shepherd, 2006; Phan, 2004).

Based on this reasoning, previous research points to the fact that cultural norms and practices help to explain differences in entrepreneurial activity (e.g., Autio et al., 2013; Klyver et al., 2013; Stephan and Uhlaner, 2010). Consistent with the substantial differences between full-time and part-time entrepreneurship described previously, however, it is anticipated that the extent to which societal cultural norms and practices stimulate entrepreneurial activity will differ across the two types of entrepreneurship. Focusing on the cultural dimensions found in the GLOBE study (House et al., 2004), some cultural norms and practices may resonate well with full-time entrepreneurship, but less coherently align with part-time entrepreneurial activities, and vice versa. Based on this perspective, and complementing previous studies pointing to the differential impact of individual-level predictors for full-time and part-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014), culture is expected to impact part-time and full-time entrepreneurship differently.

4.2.2 Investments and outcomes of part-time vs. full-time entrepreneurship

Full-time and part-time entrepreneurial activities differ significantly with respect to required resources. Resources are needed for setting up and running almost every business (Aldrich, 1999; Bowey and Easton, 2007; Starr and MacMillan, 1990). These resources may include office space, physical equipment and financial capital. Financial capital is typically needed for the purchasing of supplies, as well as for hiring and paying accountants and lawyers. Financial capital is also needed to focus on developing a business, even when the business is not generating revenue (Bates, 2005). Moreover, entrepreneurs have to invest a considerable amount of time and energy in a business, as they have to gather the needed resources and combine them to set up and run their business (Carter et al., 1996; Ucbasaran et al., 2001).

The resources needed for realizing a particular entrepreneurial endeavor, however, vary significantly with its scale. In contrast to larger-scale businesses, smaller ones have, for example, fairly modest capital requirements (Aldrich and Martinez, 2001; Kim et al., 2006; Reynolds, 2011). Similarly, smaller businesses do not necessarily need significant levels of office space and equipment, as they may be started and run in the home (e.g., home-based). In addition, less time has to be devoted to smaller scale entrepreneurial endeavors. Part-time entrepreneurship typically implies that a business is founded on a smaller scale (Petrova, 2012). When compared to full-time entrepreneurs, the vast majority of part-time entrepreneurs do not have employees (Piorkowsky and Petermann, 2013), and typically require less financial capital (Metzger, 2014).

Related to the time and resources that have to be invested, full-time and part-time entrepreneurial activities also differ with respect to the risk and the opportunity costs involved. All entrepreneurial activities are fundamentally risky and entail opportunity costs in time (Amit et al., 1995; Brockhaus, 1980). Individuals invest their own money, dedicate time and energy, and most likely devote themselves at a personal level, to develop a business based on an entrepreneurial opportunity which they consider to hold a profit potential, but may turn out to not being viable at all (De Carolis and Saparito, 2006). Additionally, individuals engaging in entrepreneurial activities typically do not know in advance whether they possess the capabilities and skills needed to meet the challenges involved in the entrepreneurial process (Cressy, 2000). Thus, failure is quite common among entrepreneurs (Holmes et al., 2010; Robb and Watson, 2012; Stam et al., 2014) and comes with significant financial losses and major emotional consequences (Brockhaus, 1980).

The risks involved in starting an entrepreneurial career, however, differ significantly between full-time and part-time entrepreneurship. As noted previously, the amount of resources needed for realizing an entrepreneurial endeavor varies significantly with its scale. Part-time businesses, on average, are founded smaller than full-time businesses (Bosma et al., 2008; Petrova, 2012). Hence, starting a business on a part-time basis typically places a significantly lower amount of financial capital and other resources, as well as time and energy, at risk (Raffiee and Feng, 2014). Additionally, it offers an opportunity to experiment with, and gain insights into, a venture's viability (Wennberg et al., 2006), as well as test out one's own personal abilities for pursuing an entrepreneurial career (Petrova, 2010; Raffiee and Feng, 2014; see also chapter 2.3). In summary, engaging in a part-time entrepreneurial activity entails fewer resource investments, is less risky, and entails significantly lower opportunity costs in time, than full-time entrepreneurship.

In terms of entrepreneurial earnings, full-time entrepreneurship typically causes the potential for higher earnings in the long run than part-time entrepreneurship (Carter, 2011; Folta et al., 2010). The growth of part-time businesses is inherently restricted by the lower amount of resources invested. Additionally, they are typically unable to achieve the earnings potential of a full-time business, as their limited size makes it harder to benefit from economies of scale (Cassar, 2006; Gundry and Welsch, 2001). With earnings being a measure for success and accomplishment (Davidsson, 1989), full-time entrepreneurship, over the long haul, also bears the potential for higher levels of achievement satisfaction than part-time entrepreneurship.

However, financial rewards and realizing achievements are not the only work-related aspects relevant for individuals' satisfaction. Satisfaction and well-being are also increased when individuals have the opportunity to use different skills and abilities and are allowed discretion in what to do, what procedures to use, and when they work (Behson et al., 2000; Bontis et al., 2011; Hackman and Lawler, 1971). Compared to occupations as regular employees, and even managers, pursuing a career as an entrepreneur typically comes with a high level of task variety, as entrepreneurs have to develop products and services, develop customer relationships, and acquire and manage resources (Hundley, 2001; Schjoedt, 2009). Additionally, entrepreneurs have significant levels of autonomy and flexibility, as they are the ones responsible for their business and can determine their own working hours and task priorities (Lambert et al., 2001; Schjoedt, 2009).

The levels of variety and flexibility individuals have, however, are even higher for part-time than full-time entrepreneurs. As part-time entrepreneurs, individuals are not just responsible for conducting all the tasks involved in setting up and running a business, but they may also

spend a significant amount of time on other activities, such as being employed in a different occupation, being engaged in further education or childcare (Folta et al., 2010; Petrova, 2010). Similarly, part-time entrepreneurship offers an even higher level of flexibility than full-time entrepreneurship, as realizing growth through expanding a businesses' customer base is typically associated with being restricted by deadlines, meetings, obligations and business-related traveling that limits entrepreneurs' life-autonomy and flexibility (Schjoedt, 2009).

In summary, full-time entrepreneurship comes with a higher earnings potential, and thus, greater potential for achievement satisfaction, whereas part-time entrepreneurship may be associated with a higher level of task variety and flexibility. Based on the differences between full-time and part-time entrepreneurship related to resource needs, associated risk, and opportunity costs, as well as monetary and nonmonetary benefits, subsequently the hypotheses are developed on how societal cultural norms and practices may differ with respect to stimulating full-time and part-time entrepreneurial activities.

4.2.3 Cultural practices, full-time and part-time entrepreneurship

Chapter 4.2.3 outlines, why the societal cultural practices related to uncertainty avoidance, performance orientation, institutional collectivism, future orientation, and gender egalitarianism have a significantly different impact on individuals' propensity to engage in full-time versus part-time entrepreneurial activity. The five hypotheses were developed based on a thorough literature review regarding which cultural dimensions prior research has identified to be particularly relevant for entrepreneurial activity and on arguments available for differences in the alignment between the associated cultural norms and practices and the characteristics of full-time and part-time entrepreneurial activity.

Societal-level *uncertainty avoidance* describes the extent to which taking risks is accepted and appreciated within a society (de Luque and Javidan, 2004; House et al., 2002). In societies scoring high on uncertainty avoidance, people tend to live highly structured lives characterized by few unexpected events, and take only moderate, calculated risks (de Luque and Javidan, 2004). In contrast, individuals within societies scoring low on uncertainty avoidance, tend to appreciate changes, less heavily rely on formal structures and procedures and are less calculative when taking risks (Venaik and Brewer, 2010). As entrepreneurial activity entails a significant amount of risk and uncertainty, uncertainty avoidance and entrepreneurial activity are naturally linked from a conceptual point of view (Holm et al., 2013; McMullen and Shepherd, 2006). Consequently, societal-level uncertainty avoidance

practices have mostly been found to be negatively associated with individual-level entrepreneurial activity, in general (Autio et al., 2013; Shane, 1993). Based on differences in the alignment of uncertainty avoidance norms and practices and the characteristics of full-time and part-time entrepreneurial activity, and previous research illustrating that individual-level differences in risk aversion have a different impact on their inclination to enter full-time and part-time entrepreneurship (Raffiee and Feng, 2014), however, it is believed that the effects of societal-level uncertainty avoidance across the two types of entrepreneurial activity differ significantly.

As described previously, entrepreneurship is generally associated with taking risks, as it entails investing significant amounts of financial capital, time and effort in an endeavor with an uncertain outcome (De Carolis and Saparito, 2006; Kihlstrom and Laffont, 1979). As also noted, however, part-time entrepreneurship is associated with significantly lower levels of risk than full-time entrepreneurship. Part-time businesses are typically founded on a smaller scale (Petrova, 2012), so that significantly lower amounts of financial capital, as well as time and energy, are put at risk when experimenting with, and gaining insights into, the viability of the business opportunity identified, as well as one's capability to succeed as an entrepreneur (Raffiee and Feng, 2014; see also chapter 2.3). Thus, it is believed that comparatively, part-time entrepreneurship aligns better with societal uncertainty avoidance than full-time entrepreneurship.

Hypothesis 1: Societal-level uncertainty avoidance practices will be more negatively associated with full-time than with part-time entrepreneurial activity.

Societal-level *performance orientation* reflects the extent to which a society encourages and rewards striving for achievements, performance and excellence, and considers competitiveness to be appropriate (House et al., 2002; Javidan, 2004). In societies scoring high on performance orientation, a can-do attitude and the belief that anyone can succeed if he or she tries hard enough, are present (Javidan, 2004). In these societies, individuals are encouraged to, and rewarded for, realizing superior performance. In contrast, societies scoring low on performance orientation emphasize tradition, value family relationships, and regard the person as more important than a person's achievement (Javidan, 2004). As such, societal performance orientation practices align coherently with entrepreneurial activity from a conceptual point of view (Suddle et al., 2010) and have been found to stimulate entrepreneurial activities at the individual-level (Autio et al., 2013). However, it is suggested

that societal-level performance orientation resonates differently with full-time and part-time entrepreneurial activity.

As described previously, full-time entrepreneurship is typically more challenging than part-time entrepreneurship (Raffiee and Feng, 2014; Reynolds, 2011). It entails significantly higher risks, but also represents a greater potential for earnings and personal achievements (Carter, 2011; Folta et al., 2010). In performance-oriented societies, being engaged in the challenges and striving for the achievements involved in full-time entrepreneurial activities will be considered particularly legitimate and encouraged. In contrast, part-time entrepreneurship, which is particularly attractive when aiming at avoiding risks and focusing on the nonmonetary benefits coming with increased variety, autonomy and flexibility, should less coherently align with the norms and practices characteristic for societies scoring high on performance orientation.

Hypothesis 2: Societal-level performance orientation practices will be more positively associated with full-time than with part-time entrepreneurial activity.

Societal-level *institutional collectivism* reflects the extent to which group relatedness and group activities are emphasized within a society, group goals take precedence over individual goals, and duties and obligations towards others are important determinants of behavior (Gelfand et al., 2004; House et al., 2002). In societies with high levels of institutional collectivism, group cohesion and acceptance by others are emphasized, the interests of the group are placed above individual interests, and employer-employee relationships are characterized by a recruitment-to-retirement mentality (Gelfand et al., 2004). Contrarily, in societies with low levels of institutional collectivism, individuals are viewed as autonomous and independent, personal needs and individual interests are more important determinants of peoples' behavior, and employer-employee relationships are more short-term (Brewer and Venaik, 2011). As a consequence, entrepreneurial activities, that signal that individuals place their own interests and achievements above those of the collective, have found to be disdained in societies with high levels of institutional collectivism (Autio et al., 2013; Shane, 1993). However, it is believed that societal-level institutional collectivism is less negatively associated with part-time, rather than full-time, entrepreneurship.

In contrast to full-time entrepreneurs, their part-time counterparts generally have to invest less time and resources in their entrepreneurial endeavors (Piorkowsky and Petermann, 2013). Thus, they may retain a wage job or spend significant amounts of time and energy on meeting

group and collective expectations and obligations, such as being engaged in caring for family members. Additionally, individual monetary and achievement benefits are much less central for part-time, than for full-time, entrepreneurial endeavors (Carter, 2011; Folta et al., 2010). Compared to full-time entrepreneurship, it is believed that part-time entrepreneurship aligns more coherently with the cultural practices characteristic for societies scoring high on institutional collectivism.

Hypothesis 3: Societal-level institutional collectivism practices will be more negatively associated with full-time than with part-time entrepreneurial activity.

Societal-level *future orientation* reflects the extent to which a society encourages and rewards behaviors, such as delaying gratification and investing in the future, places a higher priority on planning, and views economic and spiritual success as being a whole (Ashkanasy et al., 2004; House et al., 2002). In societies scoring high on future orientation, individuals are intrinsically motivated to achieve economic success, and are willing to defer gratification for potential pay-offs in the future (Ashkanasy et al., 2004). Contrarily, societies scoring low on future orientation exhibit a higher preference for immediate gratification and consumption and perceive clear trade-offs between materialistic success and spiritual fulfillment. With entrepreneurial activities involving today's investments in time and energy for harvesting rewards in the future, entrepreneurial activities have been recognized as being coherently aligned with future orientation practices from a conceptual point of view (Stephan and Uhlaner, 2010; Thai and Turkina, 2014). However, it is believed that societal-level future orientation has a more positive effect on full-time, than on part-time, entrepreneurial activities.

As noted previously, full-time entrepreneurship comes with significantly higher initial investment and is more risky than part-time entrepreneurship (Raffiee and Feng, 2014), but also bears a higher potential for economic performance, growth, and achievement in the long run (Aldrich and Martinez, 2001; Folta et al., 2010). Societal practices that value and appreciate deferring gratification and emphasize long-term success, as well as the intrinsic motivation to realize economic performance, should thus more coherently align with full-time, rather than part-time, entrepreneurship. Contrarily, founding part-time businesses that often remain small do not generate significant amounts of income or wealth (Mungaray and Ramirez-Urquidy, 2011). However, they do allow for significantly lower investments and risk, which may be a better fit with the cultural practices of finding the optimal trade-off

between materialistic success and nonmonetary benefit characteristics for societies with a lower level of future orientation. With these differences in mind, it is suggested that societal-level future orientation practices more coherently align with full-time, rather than part-time, entrepreneurship.

Hypothesis 4: Societal-level future orientation practices will be more positively associated with full-time than with part-time entrepreneurial activity.

Gender egalitarianism refers to societies' beliefs about whether biological sex should determine individuals' roles in different aspects of life, and reflects the degree to which gender inequality is minimized within a society (Emrich et al., 2004; House et al., 2002). Societies with high levels of gender egalitarianism rely less on biological sex to determine individuals' roles. They are characterized by a higher status of women in society, a higher percentage of women participating in the labor force, and higher levels of male parental investments and involvement in child rearing (Crompton et al., 2005; Kaufman, 2000; Knudsen and Waerness, 2007). Contrarily, societies with low levels of gender egalitarianism are characterized by having more women focusing on child rearing and not participating in the labor force, in addition to a lower status of women, in general (Emrich et al., 2004). Based on these observations, it is suggested that cultural practices related to gender egalitarianism have a different effect on full-time versus part-time entrepreneurial activities.

As noted previously, full-time entrepreneurship requires significant investments in terms of time and energy (Brockhaus, 1980). For homemakers, who suffer from time constraints, being engaged in entrepreneurship on a full-time basis is thus typically not a feasible option. They may, however, engage in part-time entrepreneurship that comes with significantly lower investments in time and energy and provides the flexible work environment that is typically desired by individuals with small children (Duberley and Carrigan, 2013). In societies scoring higher on gender egalitarianism, not only women, but also men, and thus, a significantly higher number of individuals in total, are involved in child rearing and domestic labor (Crompton et al., 2005; Knudsen and Waerness, 2007; Ruppanner, 2010). While this may interfere with individuals' proclivity to engage in full-time entrepreneurship, it will not necessarily have a similar negative effect on part-time entrepreneurial activity. Furthermore, previous research has observed that in societies scoring high on gender egalitarianism, policies aimed at improving opportunities for the labor market participation of individuals with children (e.g., parental-leave, child care services) are put into place (Andersson-Skog,

2007; Mandel, 2009). Many of these policies, however, primarily benefit employees (Klyver et al., 2013). This implies that the opportunity costs for being engaged in full-time entrepreneurship, but not necessarily for part-time entrepreneurship, are particularly high in these societies. In summary, it is expected that societal-level practices related to gender egalitarianism comparatively better resonate with part-time, rather than full-time, entrepreneurship.

Hypothesis 5: Societal-level gender egalitarianism practices will be more negatively associated with full-time than with part-time entrepreneurial activity.

4.3 Sample and method

To address the research question of chapter 4, a multi-level data set was constructed which will be explained in detail in chapter 4.3.1. The variables which entered the analyses will be described in chapter 4.3.2 and 4.3.3. This is followed by the theoretical foundation of the estimation method and the descriptive statistics of the sample in chapter 4.3.4.

4.3.1 Sample description

To test the hypotheses, different data sources were combined. Individual-level (level 1) data were obtained from the Flash Eurobarometer 354 data set (European Commission, 2012). Collected via computer assisted interviews in June, July and August 2012 by the market research company TNS, the Flash Eurobarometer 354 data set covers a wide range of data from 42,080 individuals from 40 countries on topics such as occupational status, demographics, and household situations. As shown in prior research (e.g., Block et al., 2013b; Kautonen et al., 2014; Parboteeah et al., 2015; Verheul et al., 2012), the data set is particularly suited for multi-country studies of entrepreneurial activities, as it comprises representative samples of the national populations in the respective countries (European Commission, 2012). For the purposes of this chapter and chapter 5, this individual-level data was complemented with country-level (level 2) information on societal cultural practices obtained from the GLOBE study (House et al., 2004). Additionally, country indicators on gross domestic product (GDP) per capita and country population data from The World Bank were added (The World Bank, 2014). After matching the three sources of data and deleting observations with missing data, the final data set comprised of 28,157 individuals from 27 national contexts. The national contexts cover the entire range of the nine societal cultural practice dimensions,

i.e., the full range of “test bands" that indicate significant cultural differences (House et al., 2004), which were found in the GLOBE study. Due to the fact that the data for the dependent variable (entrepreneurial activity) and the predictors (cultural differences) are drawn from unrelated data sets, common method variance is not an issue in the analyses (Podsakoff et al., 2012).

4.3.2 Entrepreneurial activity and predictors

To construct the dependent variable, the definition outlined in 2.1 was followed. Individuals were classified according to their primary occupation which was indicated by the respondents’ answer to the question “As far as your current occupation is concerned, would you say you are self-employed, an employee, a manual worker or would you say that you are without a professional activity?" Individuals were categorized as *full-time entrepreneurs* if they indicated self-employment as their primary occupation (3,309 individuals). Respondents that did not indicate self-employment as their primary occupation, but indicated being self-employed as a side job, as they were currently involved in founding or managing a business (1,888 individuals) were classified as *part-time entrepreneurs*. This categorization included individuals that were involved in founding or managing a business and indicated their primary occupation as being a wage earner, student, homemaker, unemployed, or retiree when asked to specify their primary activity. Remaining individuals were classified as *non-entrepreneurs* (22,960 observations).

The above definition represents a comprehensive view of part-time entrepreneurship but differs in three important aspects from the operationalization used in the influential study of Folta et al. (2010): (1) Women are not excluded from the sample since women form an integral part of entrepreneurial activity (Strohmeyer et al., 2006). (2) The sample is not restricted to wage earners. Part-time entrepreneurship is a viable employment option for a wide range of individuals, including wage earners, students, retirees, home makers and unemployed (compare chapter 2.2.2). (3) The sample is not limited to individuals between the ages of 25 and 57 years since entrepreneurship and in particular part-time entrepreneurship can be appealing to individuals at all stages of life. However, to achieve comparability of results a similar operationalization to Folta et al. (2010) was used as a robustness check which yielded very similar results (compare chapter 4.4.2).

To capture the societal cultural practices related to *uncertainty avoidance, performance orientation, institutional collectivism, future orientation,* and *gender egalitarianism* and following prior research (Autio et al., 2013; Saeed et al., 2014) the GLOBE societal cultural

practices scores were used (House et al., 2004). GLOBE societal practices represent the cultural norms and practices actually enacted in societal behavior and institutional policies (Autio et al., 2013; House et al., 2004; Maseland and van Hoorn, 2008), and have thus been identified as particularly suitable for predicting entrepreneurial activity (Autio et al., 2013; Stephan and Uhlaner, 2010; Thai and Turkina, 2014). In addition to societal cultural practices which aim to measure 'as things are', GLOBE also reports societal cultural values which aim to capture 'as things should be'. The aim of this chapter is to analyze determinants of current observable entrepreneurship, and consequently GLOBE's societal cultural practices are more suitable for this aim.

4.3.3 Controls and variable definitions

Several control variables were included in the analyses. On the individual-level, the model controlled for gender, and age. Both variables were illustrated to have an impact on the propensity to become an entrepreneur (Lévesque and Minniti, 2011; Shinnar et al., 2012). Additionally, previous research suggests that gender and age may have differential impacts on the propensity to become a full-time or a part-time entrepreneur (Raffiee and Feng, 2014). Gender is reflected by a dummy variable which takes the value of 1 for *females* and 0 for males. To improve the readability of the results, respondents' age was divided by 10 before including it in the analyses. To also account for a potential non-linear relationship between age and entrepreneurial activity (Autio et al., 2013; Parker, 2004; Semrau and Werner, 2012), the respective squared term was also included. *Parental self-employment* was also controlled for, which was found to be associated with entrepreneurial intentions (Laspita et al., 2012), by including a dummy variable taking the value of 1 if at least one of respondents' parents was or is self-employed, and 0 otherwise. Additionally, individuals' *education* was entered in the model, as education was shown to have a significant impact on the propensity to become an entrepreneur on a part-time as well as a full-time basis (Folta et al., 2010; Raffiee and Feng, 2014). To capture *education*, the approach of prior research based on the Flash Eurobarometer data set (Adam-Müller et al., 2015; Block et al., 2013b) was followed to construct a measure reflecting respondents number of years in full-time education (see chapter 5.3.1 for more details). Since individuals' household situations may also have an impact on their inclination towards full-time and part-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014), the analyses further accounted for *household income* and the number of *household members* as controls. Household income is reflected by a subjective measure based on answers to the question "Which of the following statements best describe your feelings about your

household's income these days", which ranged from (1) “very difficult to manage based on the household’s current income” to (4) “live comfortably on current income”. The variable *household members* reflects the number of people living in respondents’ household. Table 4-1 details the definitions of the variables that were used in the analyses.

Table 4-1: Variable definitions

Variable	Definition
Dependent variable	
Full-time entrepreneur	Individual indicates self-employment as primary occupation
Part-time entrepreneur	Individual does not indicate self-employment as primary occupation but starts/started a business which is still operated by that individual
Non-entrepreneur	Individual neither indicates self-employment as primary occupation nor started/starts a business which is still operated by that individual
Individual-level variables (level 1)	
Female	Dummy variable = 1 if individual is female
Household income	Subjective household income: 1 = very difficult to manage on current income; 2 = difficult to manage on current income; 3 = get by on current income; 4 = live comfortably on current income
Household members	Number of people living in household
Education in years	Full-time education in years (restricted to 9–19)
Age/10	Age of individual divided by 10
Age/10 squared	Age of individual divided by 10, squared
Parental self-employment	Dummy variable = 1 if at least one parent is/was self-employed
Country-level variables (level 2)	
Population log	Population of the country 2012 in million, natural log
GDP per capita (PPP)	GDP 2010 per capita at purchasing power parity (PPP), 2005 USD exchange rates
Power distance	Power distance societal cultural practices; 1 = very low, 7 = very high
Humane orientation	Humane orientation societal cultural practices; 1 = very low, 7 = very high
In-group collectivism	Collectivism II societal cultural practices (In-group collectivism); 1 = very low, 7 = very high
Assertiveness	Assertiveness societal cultural practices; 1 = very low, 7 = very high
Uncertainty avoidance	Uncertainty avoidance cultural societal practices; 1 = very low, 7 = very high
Performance orientation	Performance orientation cultural societal practices; 1 = very low, 7 = very high
Institutional collectivism	Collectivism I societal cultural practices (Institutional collectivism) ; 1 = very low, 7 = very high
Future orientation	Future orientation societal cultural practices; 1 = very low, 7 = very high
Gender egalitarianism	Gender egalitarianism societal cultural practices; 1 = very low, 7 = very high

At the country-level, following earlier research (Autio et al., 2013; Lévesque and Minniti, 2011), gross domestic product and countries’ population were controlled for, which both may

have an effect on entrepreneurial activity (Di Addario and Vuri, 2010; Sato et al., 2012; Sautet, 2013; van Stel et al., 2005). In particular higher individuals' inclination to become entrepreneurs in developing countries primarily rest on a particularly high rate of necessity entrepreneurs (Rosa et al., 2006; Wennekers et al., 2005). Specifically, the analyses include a measure reflecting countries' gross domestic product (*GDP*) per capita at purchasing power parity (PPP). As the *population* of countries in the data varies from 2 million (Slovenia) to 1,351 million (China), the natural log of this number was used in the analyses. Taking into account that cultural dimensions were found to be considerably interrelated and should thus not be viewed in isolation (Autio et al., 2013; Javidan et al., 2006), additionally controls were entered in the model for the societal cultural practices related to *power distance*, *humane orientation*, *in-group collectivism*, and *assertiveness*, i.e., all those societal cultural dimensions found in the GLOBE project (House et al., 2004) that are not subject to the hypotheses.

4.3.4 Descriptive statistics and regression model

The data has a hierarchical structure comprising individuals nested within countries. As a consequence, there is non-independence in the data, which may result in an underestimation of standard errors when estimating a simple ordinary least squares (OLS) model (Hofmann, 1997; Raudenbush and Bryk, 2002). To test the hypotheses, a multi-level model was used that allows for an unbiased analysis of the impact of the variables at different levels of the analysis (Aguinis et al., 2013; Bliese, 2000; Davison et al., 2002; Hofmann, 1997).

As the dependent variable is categorical with three states–full-time entrepreneurs, part-time entrepreneurs, and non-entrepreneurs–a multinomial logistic model specification was used with non-entrepreneurs as the base category. A key assumption for any multinomial model to produce valid results is the independence of irrelevant alternatives (IIA). IIA holds if the inclusion or deletion of one outcome category does not significantly alter the coefficients of the remaining outcomes. The models satisfy the IIA conditions according to the Hausman-McFadden test (Hausman and McFadden, 1984), as well as the Small-Hsiao test (Small and Hsiao, 1985), which implies that a multinomial model is appropriate to test the hypotheses.

The analyses were conducted using HLM7 software with restricted maximum likelihood estimations (REML) with random slope and random intercept (Aguinis et al., 2013; Raudenbush and Bryk, 2002). Random intercepts allows mean scores for the dependent variables to vary across level 2 units (Aguinis et al., 2013). Random slopes allow to account for potential differences in the relations between individual-level and dependent variables

across countries (Aguinis et al., 2013; Gelman and Hill, 2006). As the analyses reveal significant variation in the mean rates for full-time and part-time entrepreneurial activity across the national contexts exists in the sample (see Table 4-2). Furthermore, since significant variance in the slopes and intercepts between the individual-level controls and full-time as well as part-time entrepreneurial activity exists across national contexts, a multi-level random intercept and random slope model specification is most appropriate to test the hypotheses. Additionally, Chi^2 tests indicated strong support ($p < 0.01$) for multi-level modelling (compare Table 4-4).

To test whether societal cultural practices have statistically significant different effects on individuals' inclination to engage in entrepreneurship on a full-time or a part-time basis, a Wald test was used (Kodde and Palm, 1986; Long and Freese, 2006). To assess and compare the overall fit of the models, the Akaike Information Criterion (AIC) is reported (Akaike, 1974; Burnham and Anderson, 2002). The AIC is calculated by $2k - 2 \times (\text{log likelihood})$, where k represents the number of predictors in the model. Smaller AICs indicate better model fit.

Table 4-2 displays the number of observations and rates for full-time and part-time entrepreneurship for the countries in the sample, highlighting sizable variety in entrepreneurship rates. Consistent with insights generated by the Global Entrepreneurship Monitor (GEM) project (Bosma et al., 2008; Minniti et al., 2006), as well as existing single-country studies on full-time and part-time entrepreneurial activity (Piorkowsky and Petermann, 2013; Schulze Buschoff and Schmidt, 2007), the data shows that the rates of both types of entrepreneurial activity differ considerably across national contexts. In particular, the rates for full-time entrepreneurship range from 5% (Slovenia and Sweden) to 32% (Brazil). The rates for part-time entrepreneurship range from 3% (Brazil, Germany, Italy, and Republic of Korea) to 16% (Russian Federation).

Table 4-2: Cross-country sample details

	N	Full-time entrepreneurs % of N	Part-time entrepreneurs % of N
Austria	974	12%	6%
Brazil	963	32%	3%
China	947	9%	12%
Czech Republic	961	13%	8%
Denmark	985	7%	5%
Finland	987	8%	5%
France	991	6%	4%
Germany	976	10%	3%
Greece	985	16%	4%
Hungary	973	6%	6%
India	983	22%	15%
Ireland	992	13%	8%
Israel	960	15%	5%
Italy	978	12%	3%
Japan	888	12%	5%
Korea (Republic of)	997	16%	3%
Netherlands	985	14%	5%
Poland	975	12%	6%
Portugal	986	10%	6%
Russian Federation	898	7%	16%
Slovenia	961	5%	5%
Spain	982	10%	5%
Sweden	985	5%	6%
Switzerland	977	13%	7%
Turkey	971	12%	8%
United Kingdom	978	8%	6%
United States	2,919	12%	10%
Total	**28,157**	**12%**	**7%**

Notes: own calculations based on European Commission (2012)

Table 4-3 illustrates the descriptive statistics and the correlation matrices for the individual-level and societal-level variables.

Table 4-3: Descriptive statistics and correlations

Variable	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Individual-level (Level 1)														
(1) Full-time entrepreneur	0.12		0	1										
(2) Part-time entrepreneur	0.07		0	1	-0.10									
(3) Gender	0.56		0	1	-0.12	-0.08								
(4) Household income	2.91	0.89	1	4	0.03	0.03	-0.06							
(5) Household members	2.50	1.27	1	10	0.05	0.05	-0.04	-0.03						
(6) Education	13.99	3.46	9	19	0.07	0.04	-0.06	0.18	-0.06					
(7) Age	47.77	17.76	15	97	-0.03	-0.08	0.06	0.01	-0.34	-0.04				
(8) Parental self-employment	0.30		0	1	0.10	0.02	-0.01	0.06	0.01	0.02	0.02			
Country-level (Level 2)														
(1) Population[a]	157.11	322.34	2.06	1,350.69										
(2) GDP per capita PPP	27.00	10.43	3.12	42.00	-0.50									
(3) Power distance	5.06	0.49	3.59	5.61	0.32	-0.37								
(4) Humane orientation	3.90	0.40	3.22	4.96	0.09	0.05	-0.35							
(5) In-group collectivism	4.76	0.77	3.18	5.92	0.37	-0.69	0.78	-0.03						
(6) Assertiveness	4.15	0.38	3.38	4.79	-0.06	0.19	0.26	-0.60	0.11					
(7) Uncertainty avoidance	4.23	0.67	2.88	5.37	-0.16	0.52	-0.54	0.19	-0.66	-0.15				
(8) Performance orientation	4.07	0.40	3.20	4.94	0.20	0.35	-0.33	0.31	-0.28	0.14	0.58			
(9) Institutional collectivism	4.26	0.49	3.25	5.22	0.08	0.14	-0.16	0.59	-0.07	-0.51	0.29	0.37		
(10) Future orientation	3.90	0.46	2.88	4.73	-0.12	0.55	-0.43	0.31	-0.55	-0.00	0.79	0.68	0.41	
(11) Gender egalitarianism	3.40	0.40	2.50	4.08	-0.35	-0.01	-0.26	-0.09	-0.25	-0.31	-0.16	-0.57	-0.14	-0.38

Notes: N(Level 1) = 28,157; N(Level 2) = 27; SD = Standard deviation; Level 1 correlations above |0.012| and Level 2 correlations above |0.38| significant at $p < 0.05$

[a] Mean, SD, Min, Max in absolute figures (million); correlations based on natural log of population in millions

Consistent with prior research (Autio et al., 2013; Javidan et al., 2006), significant interrelations between the societal cultural dimensions are visible. As described in chapter 4.4.2 in detail, several robustness checks were carried out to rule out that multicollinearity biases the results.

4.4 Results

Table 4-4 displays the results of the multi-level analyses. For each variable coefficients (Coef.), significances (Sig.) and standard errors (SE) are shown. Additionally, to assess the magnitude of the effect, the odds ratios (OR) are also reported. Moreover, the results of coefficient difference tests (Diff.) are reported, to assess the different impact on part-time vs. full-time entrepreneurship. Model 1 includes the individual-level and non-culture-related country-level controls. Model 2 additionally comprises the culture-related predictors and controls. As a model comparison reveals adding societal cultural practices to the model decreases the AIC from 105,899 (Model 1) to 105,788 (Model 2), which indicates a significant ($p < 0.01$) increase in model fit (Burnham and Anderson, 2002).

Table 4-4: Results of multinomial random slope and random intercept regressions

	Model 1									Model 2 (Full Model)								
Variables	**Full-time entrepreneur (1)**				**Part-time entrepreneur (2)**				**Diff. (1) v (2) (3)**	**Full-time entrepreneur (4)**				**Part-time entrepreneur (5)**				**Diff. (4) v (5) (6)**
	OR	Coef.	Sig.	SE	OR	Coef.	Sig.	SE	Sig.	OR	Coef.	Sig.	SE	OR	Coef.	Sig.	SE	Sig.
Individual-level (level 1)																		
Gender	*0.40*	-0.918	***	(0.06)	*0.51*	-0.668	***	(0.06)	***	*0.40*	-0.916	***	(0.07)	*0.51*	-0.667	***	(0.06)	***
Household income	*1.18*	0.162	***	(0.05)	*1.11*	0.106	**	(0.04)		*1.17*	0.155	***	(0.05)	*1.11*	0.106	**	(0.04)	
Household members	*1.09*	0.082	***	(0.03)	*1.06*	0.057	**	(0.03)		*1.08*	0.076	***	(0.03)	*1.07*	0.067	**	(0.03)	
Education	*1.04*	0.039	***	(0.01)	*1.07*	0.064	***	(0.01)	*	*1.04*	0.039	***	(0.01)	*1.07*	0.064	***	(0.01)	*
Age	*12.39*	2.517	***	(0.17)	*1.56*	0.445	***	(0.12)	***	*12.50*	2.525	***	(0.17)	*1.55*	0.436	***	(0.12)	***
Age squared	*0.76*	-0.270	***	(0.02)	*0.94*	-0.061	***	(0.01)	***	*0.76*	-0.271	***	(0.02)	*0.94*	-0.061	***	(0.01)	***
Parental self-employment	*1.96*	0.673	***	(0.06)	*1.52*	0.422	***	(0.06)	***	*1.95*	0.665	***	(0.06)	*1.53*	0.427	***	(0.06)	***
Country-level (level 2)																		
Population[a]	*1.02*	0.018		(0.05)	*0.98*	-0.024		(0.04)		*0.98*	-0.017		(0.04)	*0.93*	-0.075		(0.05)	
GDP per capita (PPP)	*0.97*	-0.026	***	(0.01)	*1.00*	0.002		(0.01)	***	*0.98*	-0.024	**	(0.01)	*0.99*	-0.012		(0.01)	
Power distance										*0.79*	-0.240		(0.26)	*1.32*	0.281		(0.29)	
Humane orientation										*1.35*	0.301		(0.23)	*1.99*	0.687	**	(0.26)	
In-group collectivism										*0.88*	-0.122		(0.22)	*0.76*	-0.270		(0.25)	
Assertiveness										*0.92*	-0.087		(0.29)	*1.34*	0.290		(0.33)	
H1: Uncertainty avoidance										*0.48*	-0.742	***	(0.16)	*0.89*	-0.116		(0.18)	***
H2: Performance orientation										*0.87*	-0.142		(0.27)	*1.05*	0.051		(0.30)	
H3: Institutional collectivism										*0.68*	-0.385	**	(0.17)	*0.87*	-0.136		(0.19)	
H4: Future orientation										*2.28*	0.825	***	(0.25)	*1.06*	0.054		(0.29)	**
H5: Gender egalitarianism										*0.62*	-0.475	**	(0.21)	*1.03*	0.030		(0.24)	*
Observations					28,157									28,157				
Groups (countries)					27									27				
Random effect (χ^2 test)[b]					***									***				
AIC[c]					105,899									105,788				

Notes: Odds Ratios (OR) in italics; Coefficient (Coef.) in normal font; Standard errors (SE) in parentheses; Significance (Sig.)

* p < 0.1, ** p < 0.05, *** p < 0.01 two-tailed

[a] log transformation to improve the readability of results

[b] Random intercept and random slopes for all variables are significant, indicating that multilevel methodology should be used

[c] AIC: Akaike's information criterion = 2k - 2 × (log likelihood), with k being the number of predictors in the model. Smaller AIC indicates better model fit

4.4.1 Results regarding hypotheses

Model 2 provides evidence in support of *Hypothesis 1*, which suggests that societal cultural practices related to uncertainty avoidance have a significantly stronger negative effect on full-time, than on part-time, entrepreneurship. More specifically, a significant negative effect of uncertainty avoidance on full-time entrepreneurial activity is observed (γ = -0.724, $p < 0.01$), but no such effect on part-time entrepreneurship (γ = -0.116, p = n.s.). A Wald test further indicated that the two effects are significantly different ($p < 0.01$). *Hypothesis 2*, stating that societal performance orientation practices will have a more positive effect on full-time, than on part-time entrepreneurship was not supported by the data. More specifically, no significant impact of performance orientation is found on full-time entrepreneurship (γ = -0.142, p = n.s.) nor on part-time entrepreneurship (γ = 0.051, p = n.s.). No compelling evidence in support of *Hypothesis 3* is found, which states that societal practices related to institutional collectivism have a stronger negative effect on full-time, than on part-time, entrepreneurship. Even though a significant negative effect of institutional collectivism on full-time entrepreneurship is observed (γ = -0.385, $p < 0.05$), and no significant effect on part-time entrepreneurship (γ = -0.136, p = n.s.), the Wald test indicated no statistically significant difference between the two effects. Taking into account the moderate number of national contexts in the study, however, it may well be that the statistical power of the societal-level analysis is just too low to clearly reveal the hypothesized difference. The data clearly supported *Hypothesis 4*, which posits that societal future orientation practices have a significantly stronger positive effect on full-time (γ = 0.825, $p < 0.01$), than on part-time entrepreneurship (γ = 0.054, p = n.s.). A Wald test indicated a statistically significant difference between the two coefficients ($p < 0.05$).

Finally, *Hypothesis 5* is supported, suggesting that societal-cultural practices related to gender egalitarianism have a significantly stronger negative effect on full-time, than on part-time, entrepreneurship. More specifically, there exists a significant negative effect of gender egalitarianism on full-time entrepreneurship (γ = -0.475, $p < 0.05$) and no significant effect of gender egalitarianism on part-time entrepreneurship (γ = 0.030, p = n.s.). A Wald test further indicated a statistically significant difference between the two effects ($p < 0.1$).

4.4.2 Robustness checks

To probe the robustness of the findings, several stability checks were conducted. First, it was tested whether the results are robust across different treatments of cases with missing values. As indicated in chapter 4.3.1, the results displayed above are based on a data set with listwise deleted cases. For the stability tests, the models were rerun based on a data set with imputed missing values of the means values of the respective variables. Additionally, based on Bayesian simulation and a Markov Chain Monte Carlo Imputation (MCMC) procedure that takes the multi-level structure of the data into account (Block et al., 2014; Carpenter et al., 2011; Carpenter and Kenward, 2012), 10 different imputed data sets were created and used simultaneously for rerunning the model. The results obtained based on both imputation procedures confirmed the ones presented in Table 4-4.

To rule out that multicollinearity affects the results, the model was rerun without in-group collectivism, the societal culture dimension with the highest VIF, and again very similar results to those in Table 4-4 were obtained. Furthermore, the models were run excluding the data from different national contexts one by one. Countries include the US, which stands out by representing approximately 10% of the data in the entire sample (2,919 of 28,157 observations), as well as India, Brazil, and China, which represent the countries with the lowest GDP per capita in the sample. All these robustness checks confirmed the results from the main analyses. The findings are thus considerably robust.

Since a large portion of prior part-time entrepreneurship research only considered employed individuals (compare chapter 2.1), a subsample was created to rerun the analysis. Creating the subsample of employed individuals did not impact the number of full-time entrepreneurs, but it did reduce the number of part-time entrepreneurs by 41% to 1,119 observations and reduced the number of non-entrepreneurs by 53% to 10,700 observations. The subsample of employed individuals still satisfies the IIA conditions according to the Hausman-McFadden (Hausman and McFadden, 1984) and Small-Hsiao tests (Small and Hsiao, 1985). The results are displayed in Table 4-5, for comparison the Full Model from the original analysis (Table 4-4) is included in addition to the results of the Employed Subsample.

Table 4-5: Results of employed subsample

	Full Model					Employed Subsample Only employed individuals[a]				
Variables	**Full-time entrepreneur (1)**		**Part-time entrepreneur (2)**		**Diff. 1 v. 2 (3)**	**Full-time entrepreneur (4)**		**Part-time entrepreneur (5)**		**Diff. 4 v. 5 (6)**
	Coef.	SE	Coef.	SE		Coef.	SE	Coef.	SE	
Individual-level										
Gender	-0.916 ***	(0.07)	-0.667 ***	(0.06)	***	-0.574 ***	(0.08)	-0.585 ***	(0.08)	
Household income	0.155 ***	(0.05)	0.106 **	(0.04)		0.002	(0.06)	0.049	(0.05)	
Household memb.	0.076 ***	(0.03)	0.067 **	(0.03)		0.053 **	(0.03)	0.087 **	(0.04)	
Education	0.039 ***	(0.01)	0.064 ***	(0.01)	*	0.011	(0.01)	0.050 ***	(0.01)	**
Age	2.525 ***	(0.17)	0.436 ***	(0.12)	***	0.020	(0.17)	0.057	(0.22)	
Age squared	-0.271 ***	(0.02)	-0.061 ***	(0.01)	***	0.035 *	(0.02)	-0.018	(0.02)	**
Parental self-empl.	0.665 ***	(0.06)	0.427 ***	(0.06)	***	0.660 ***	(0.06)	0.301 ***	(0.09)	***
Country-level										
Population[b]	-0.017	(0.04)	-0.075	(0.05)		-0.041	(0.04)	0.069	(0.05)	*
GDP per capita	-0.024 **	(0.01)	-0.012	(0.01)		-0.020 *	(0.01)	-0.001	(0.01)	
Power distance	-0.240	(0.26)	0.281	(0.29)		-0.335	(0.24)	0.286	(0.31)	
Humane orientat.	0.301	(0.23)	0.687 **	(0.26)		0.397 *	(0.21)	0.906 ***	(0.28)	
In-group collec.	-0.122	(0.22)	-0.270	(0.25)		0.036	(0.21)	0.016	(0.27)	
Assertiveness	-0.087	(0.29)	0.290	(0.33)		-0.059	(0.27)	0.739 **	(0.34)	*
H1: Uncertainty a.	-0.742 ***	(0.16)	-0.116	(0.18)	***	-0.616 ***	(0.14)	0.026	(0.19)	***
H2: Performance o.	-0.142	(0.27)	0.051	(0.30)		-0.006	(0.25)	0.015	(0.34)	
H3: Institutional c.	-0.385 **	(0.17)	-0.136	(0.19)		-0.723 ***	(0.15)	0.005	(0.20)	***
H4: Future o.	0.825 ***	(0.25)	0.054	(0.29)	**	0.576 **	(0.23)	0.484	(0.30)	
H5: Gender e.	-0.475 **	(0.21)	0.030	(0.24)	*	-0.483 **	(0.20)	0.699 **	(0.26)	***
Observations	28,157					15,128				
Groups (countries)	27					27				

Notes: own calculations
coefficient (Coef.); standard errors (SE); * p < 0.1, ** p < 0.05, *** p < 0.01, two-tailed
[a] includes full-time entrepreneurs and all part-time and non-entrepreneurs with a wage-earning main occupation
[b] log transformation to improve the readability of results

The results of the Employed Subsample shown in Table 4-5 are fairly consistent with those of Full Model. Societal cultural uncertainty avoidance and gender egalitarianism still continue to exercise a significantly more negative effect on full-time than on part-time entrepreneurship ($p < 0.01$). Societal cultural future orientation still exhibits a significant positive effect on full-time entrepreneurship ($\gamma = 0.576$, $p < 0.05$) but the difference between full-time and part-time is no longer significant. Institutional collectivism displays a more negative impact on full-time entrepreneurship in the subsample than in the full sample (Full Model: $\gamma = -0.385$, $p < 0.05$; Employed Subsample: $\gamma = -0.723$, $p < 0.01$). This results in a significant difference for societal cultural institutional collectivism between part-time and full-time entrepreneurship in the Employed Subsample ($p < 0.01$). Furthermore, societal cultural assertiveness exhibits a more positive effect on part-time entrepreneurship in the subsample than in the Full Model

(Full Model: $\gamma = 0.290$, p = n.s.; Employed Subsample: $\gamma = 0.739$, $p < 0.05$). This results in a significant difference for societal cultural assertiveness between part-time and full-time entrepreneurship in the Employed Subsample ($p < 0.1$).

4.4.3 Further result and analyses

The Full Model in Table 4-4 reveals a pattern of results for the individual-level controls that is consistent with prior research on the individual-level predictors for full-time and part-time entrepreneurial activity. In line with the notion that part-time entrepreneurship is relatively more appealing for woman than full-time entrepreneurship (Strohmeyer et al., 2006), the negative effect of gender is significantly stronger ($p < 0.01$) for full-time entrepreneurship ($\gamma = -0.916$, $p < 0.01$) than for part-time entrepreneurship ($\gamma = -0.667$, $p < 0.01$). Similar to previous research (Folta et al., 2010), individual's education has a significantly stronger positive effect ($p < 0.1$) on part-time ($\gamma = 0.064$, $p < 0.01$) than on full-time entrepreneurship ($\gamma = 0.039$, $p < 0.01$). The effect of age on entrepreneurial activity is significantly weaker for part-time, than for full-time entrepreneurship ($p < 0.01$, for the linear and squared term). This indicates that part-time entrepreneurship is associated with a less pronounced inverse U-shaped age distribution than full-time entrepreneurship. Specifically, the results suggest that part-time entrepreneurial activities are relatively more attractive than full-time entrepreneurial activities to individuals that are either particularly young or old. Part-time entrepreneurship may be relatively more attractive for individuals that are particularly young, as these individuals will more likely suffer from resource constraints (Parker, 2004) or engage in full-time education. Analogously, part-time entrepreneurship may be particularly attractive for older individuals, such as retirees, as it allows them to remain economically activity without having to invest the time and energy necessary for building and maintaining a full-time business (Kerr and Armstrong-Stassen, 2011).

Furthermore, parental self-employment exhibits a stronger positive effect ($p < 0.01$) on full-time entrepreneurship ($\gamma = 0.665$, $p < 0.01$) than on part-time entrepreneurship ($\gamma = 0.427$, $p < 0.01$). This result may be explained by full-time entrepreneurship being clearly more widespread in the past (compare chapter 2.2.1). As a consequence, parental self-employment would typically imply that individuals are faced with role models for full-time entrepreneurship. However, as there is no information on the type of parental self-employment in the data, it has to be left to further research to address this question in more detail.

With respect to the country-level controls, a significant negative effect of GDP per capita on full-time entrepreneurship is found (γ = -0.024, $p < 0.05$), which is in line with previous research on the link between GDP and entrepreneurial activity (Autio et al., 2013). However, GDP per capita has no significant effect on part-time entrepreneurship (γ = -0.012, p = n.s.). Additionally, it can be observed that the societal cultural practices related to humane orientation have a positive impact on part-time entrepreneurship (γ = 0.687, $p < 0.05$). This might be because part-time entrepreneurship is suitable to achieve social goals while living expenses can be covered through wage-income.

The result on the relation between societal performance orientation and entrepreneurial activity (p = n.s.) is in line with Stephan and Uhlaner (2010), but contrasts the positive link reported by Autio et al. (2013). Further analysis was conducted to clarify this issue. The observed discrepancy to Autio et al. (2013) is based on simultaneously considering all cultural dimensions relevant for explaining full-time and part-time entrepreneurial activities in the model. Specifically, replicating the model reported by Autio et al. (2013) by excluding power distance, humane orientation, future orientation and gender egalitarianism from the analyses, led to results comprising a significant positive impact of performance orientation on full-time entrepreneurial activity (γ = 0.690, $p < 0.05$), no such effect on part-time entrepreneurial activity (γ = 0.244, p = n.s.), with no significant difference between the two (see Appendix A, Table A-1). Consequently, the model reported in Table 4-4 can be viewed as an extension rather than a contradiction to the findings reported by Autio et al. (2013).

In academic literature, a lengthy debate exists whether GLOBE or Hofstede cultural data is superior (e.g., Hofstede, 2006; Javidan et al., 2006; Maseland and van Hoorn, 2008; Smith, 2006). While GLOBE, despite its shortcomings, has been chosen as the newer and more differentiated cultural concept for the main analyses (Tung and Verbeke, 2010), the analyses were also run using Hofstede data (Hofstede et al., 2010). Differing definitions of cultural dimensions and differences in operationalization make it unfeasible to compare the Hofstede and Globe framework (Brewer and Venaik, 2011; Smith, 2006; Tung and Verbeke, 2010; Venaik and Brewer, 2010). Not surprisingly it is not possible to replicate the findings of the model with GLOBE data with Hofstede data. The regression results can be found in Appendix A, Table A-2. The results with Hofstede data show that Hofstede's uncertainty avoidance has a significantly stronger positive association with full-time than with part-time entrepreneurship, which is contrary to GLOBE's societal practices uncertainty avoidance which displays a strong negative association with full-time entrepreneurship. This could be explained by the different concepts of uncertainty avoidance used (Tung and Verbeke, 2010;

Venaik and Brewer, 2010). Furthermore, the results are in line with prior research which found a positive association between Hofstede's uncertainty avoidance and business ownership (Wennekers et al., 2007), and a negative association between GLOBE's uncertainty avoidance and entrepreneurship (Autio et al., 2013).

Finally, to assess the impact of multi-level methodology, the analyses were rerun using a single-level multinomial logit model, with clustered standard errors, an approach commonly used prior to the advent of multi-level analyses. The results of the single-level analysis are directionally similar to the results obtained through multi-level analysis, a comparison of the results can be found in Appendix A, Table A-3. However, some coefficients differ considerably. For instance, the impact of societal cultural gender egalitarianism was found to have no effect on part-time entrepreneurship in the multi-level Full Model in Table 4-4 (γ = 0.030, p = n.s.) but with single-level analysis, the effect is significantly positive (γ = 0.801, $p < 0.01$). Furthermore, the variable household members has a significant positive effect on full-time entrepreneurship in multi-level analysis (γ = 0.076, $p < 0.01$) and a weaker positive effect when using single-level analysis (γ = 0.057, $p < 0.05$). Since multi-level methodology with random slope and random intercept specification accounts for directionally different impact of variables in different countries, it is expected that single-level analyses return different results compared to multi-level analyses (Hofmann, 1997; Hox, 2010; Raudenbush and Bryk, 2002). As indicated by the significant Chi^2 tests ($p < 0.01$) in Table 4-4, multi-level analysis is superior for the data set in question.

4.5 Discussion of findings

By addressing the research question regarding the impact of cultural dimensions on part-time entrepreneurship, this chapter extended the knowledge on the drivers of full-time and part-time entrepreneurial activity. More specifically, this chapter aimed at complementing previous research on how individual-level factors, such as education and age, differentially affect individuals' inclination to engage in full-time and part-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014), by addressing how societal-culture stimulates the two types of entrepreneurial activity. The implications of the findings will be discussed in chapter 4.5.1 and the contributions and policy implications will be addressed in chapter 4.5.2.

4.5.1 Findings and implications

Anchored in the differences between full-time and part-time entrepreneurship, this chapter developed and tested hypotheses on how the cultural practices related to uncertainty avoidance, performance orientation, institutional collectivism, future orientation, and gender egalitarianism, differ in their alignment with full-time and part-time entrepreneurial endeavors. The analyses supported most of the hypotheses.

The analyses showed a significant negative relationship between uncertainty avoidance practices and full-time entrepreneurial activity, but a significantly less negative link with part-time entrepreneurial activity. For full-time entrepreneurship, this result is in line with previous research on how uncertainty avoidance influences entrepreneurial activity (Autio et al., 2013; Shane, 1993) and underscores the idea that the acceptance of uncertainty and risk-taking are supportive of entrepreneurial actions (Hayton and Cacciotti, 2013; Holm et al., 2013; McMullen and Shepherd, 2006). In line with the theoretical reasoning, however, this result also points to the fact that it is not entrepreneurial activity, per se, that is disdained when strong tendencies to avoid uncertainty are present on a societal-level. Instead, it is the high level of investments put at risk when pursuing entrepreneurial endeavors on a full-time basis. This interpretation is also consistent with recent results presented by Raffiee and Feng (2014), which illustrated that individual-level risk aversion more negatively aligns with entrepreneurial activity on a full-time, rather than on a part-time, basis. At least partially, this finding may help to reconcile the previous inconclusive findings on the link between societal-level uncertainty avoidance and entrepreneurial activity (Autio et al., 2013; Hayton and Cacciotti, 2013). More specifically, it suggests that research may come to different conclusions, when focusing on countries where entrepreneurial activities are dominated either by full-time or by part-time entrepreneurs.

The analyses further reveal that societal cultural practices related to future orientation foster full-time entrepreneurial activity. This underscores the idea that the societal cultural practices related to future orientation, which comprise a preference for planning and deferring gratifications, as well as the intrinsic motivation to realize economic performance, resonate with entrepreneurial activities (Stephan and Uhlaner, 2010; Thai and Turkina, 2014). Again, however, the results also point to the fact that it is necessary to differentiate between full-time and part-time entrepreneurial activity to fully understand the relationship between cultural differences and entrepreneurship, as the societal cultural practices related to future orientation more coherently align with full-time, rather than part-time, entrepreneurial activity. Being in

line with the theoretical reasoning, this finding may also point to a fruitful direction for further research on the individual-level predictors for full-time and part-time entrepreneurial activity. More specifically, it points to the fact that individual-level differences in future orientation, which have been found to be conceptually linked to entrepreneurial endeavors (Das and Teng, 1997), may potentially contribute to explain differences in individuals' inclination for engaging in entrepreneurial endeavors on a full-time or part-time basis.

The finding on how societal cultural practices related to gender egalitarianism impacts full-time and part-time entrepreneurship, in turn, may help to further refine existing insights on the relationship between societal norms and practices related to gender equality and entrepreneurial activity. Previous research suggested that gender equality does not have a primary effect on entrepreneurial activity, but negatively affects the entrepreneurial activity of women in more developed countries (Klyver et al., 2013). Complementing these results, this chapter reveals that societal cultural practices related to gender egalitarianism have a negative effect on full-time entrepreneurial activity, but no such effect on part-time entrepreneurship. Combined, these insights suggest that when faced with policies that improve the opportunities for a labor market participation of individuals with children (e.g., parental-leave, child care services), which are associated with higher levels of gender equality, but typically connected to wage-employment (Klyver et al., 2013; Mandel, 2009), women in developed countries may particularly hesitate to engage in full-time entrepreneurship. Instead, they may feel relatively more inclined to become full-time wage-employed, or become wage and self-employed on a part-time basis.

This conclusion is supported by a comparison of female entrepreneurship rates across those countries with a higher GDP per capita in the sample. Among these countries, it is observed that the rates for females being engaged in full-time entrepreneurship are higher for those national contexts that score lower on gender egalitarianism (7.8%) than for national contexts scoring higher on gender egalitarianism (6.1%). In contrast, the rates of females involved in part-time entrepreneurial activities are lower in countries with lower gender egalitarianism (3.8%) than in countries scoring higher on gender egalitarianism (4.5%).

To some extent, the results also support the line of reasoning with respect to the effects of societal-level institutional collectivism on full-time and part-time entrepreneurial activity. More specifically, the data shows a significant negative link between institutional collectivism practices and full-time entrepreneurial activity. This is in line with the notions that societal norms emphasizing group goals and duties and obligations towards the collective do not correspond well with being engaged in entrepreneurial endeavors (Autio et al., 2013; Shane,

1993). In line with the theoretical reasoning, however, no significant link between societal-level institutional collectivism and part-time entrepreneurial activity is apparent. Supporting the notion that the association between culture and entrepreneurial activity is not as simple as originally expected (Pinillos and Reyes, 2011), this result may contribute to explain why the research results on the link between collectivism and entrepreneurial action are not entirely conclusive (Hayton and Cacciotti, 2013).

4.5.2 Contributions and policy implications

With these findings, this chapter contributes to the literature in several ways. Overall, this chapter clearly illustrates how the alignment of the investments and outcomes associated with full-time entrepreneurial activity, on the one hand, and part-time entrepreneurial activity (compare chapter 4.2.1), on the other hand, result in significant differences in how the two types of entrepreneurial activities are linked to societal cultural practices. As such, the results clearly confirm the notion that entrepreneurial behaviors cannot be understood without attention to the societal context in which individuals are embedded (Laspita et al., 2012; Stephan and Uhlaner, 2010). Pointing to significant differences in how societal culture is related to full-time and part-time entrepreneurship, however, it clearly adds to the small but growing literature on these two types of entrepreneurial activity, which has so far been dominated by research on the differential effect of individual-level factors (e.g., Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014).

Moreover, the results contribute to the literature on culture's consequences for entrepreneurial activity. They complement the previous research on the differential impact of cultural norms and practices on formal and informal entrepreneurship (Thai and Turkina, 2014) in highlighting that it is essential to clearly distinguish between different forms of entrepreneurial activity to fully understand the relationship between culture and entrepreneurial actions (Hayton and Cacciotti, 2013).

As full-time and part-time entrepreneurship differs significantly with respect to their contributions to societies' economic and social welfare (Bosma et al., 2008; Folta et al., 2010; Petrova, 2012), the results also have important implications for policy-makers. More specifically, the results suggest that policy-makers should consider manipulating institutional contexts to discourage or change cultural societal practices related to uncertainty avoidance, institutional collectivism and gender egalitarianism, and facilitate future orientation practices to stimulate full-time entrepreneurial activities and reap the associated economic and social benefits. To do so, they might consider promoting role models that emphasize full-time

entrepreneurship as a cultural norm, rather than as a type of behavior conflicting with established societal norms and practices (Autio et al., 2013). In countries scoring high on uncertainty avoidance and gender egalitarianism, policy-makers should consider making use of the fact that part-time entrepreneurial activity is significantly less discouraged than full-time entrepreneurship. In these contexts, entrepreneurial activity, on a larger scale, may potentially be fostered by investing in programs particularly suited to facilitating the transition from part-time to full-time entrepreneurship. In addition, policy-makers should consider improving full-time entrepreneurs' access to parental-leave and child care programs to weaken the negative link between gender equality policies and full-time entrepreneurial activity.

4.6 Conclusion and limitations

The analyses presented in this chapter have limitations that provide avenues for further research. Firstly, the results are based on data from individuals in 27 countries. Even though the number of national contexts represented in the sample is similar to those used in other recent studies (e.g., Freytag and Thurik, 2010; Laspita et al., 2012; Wennberg et al., 2013), and clearly allows for applying a multi-level approach (Hofmann, 1997; Maas and Hox, 2005), the statistical power of the societal-level analysis may have been too low to observe all the effect differences of enacted cultural norms and practices on full-time and part-time entrepreneurial activity. Additionally, the data set does not cover countries with a very low development stage for which the findings might not hold (Kiss et al., 2012; Smallbone and Welter, 2001). Furthermore, there are limitations accompanying the cross-sectional design of the analyses. Based on the data available, it can be rightfully claimed that results reveal significant differences in the relationships between societal culture and the prevalence of full-time and part-time entrepreneurial activity. However, future research should address, in more detail, whether cultural differences also have an impact on part-time entrepreneurs eventually making the transition into full-time entrepreneurship in the future. Additionally, the macroeconomic impact of institutions on part-time entrepreneurship has not been considered by academic research so far. This chapter showed that societal culture has significant different effects on full-time and part-time entrepreneurship and presumably, the institutions impacting part-time entrepreneurship differ considerable from those impacting full-time entrepreneurship. For instance, the legal environment (Hornuf, 2012), policies regarding the ease of doing business (Clercq et al., 2013; World Bank Group, 2015), unemployment

benefits (Koellinger and Minniti, 2009), health insurance (Hessels et al., 2006; Hessels et al., 2008) and child care benefits (Klyver et al., 2013; Kreide, 2003) might have a much larger impact on part-time compared to full-time entrepreneurship.

Finally, it is left to future research to address the potential effects of within country-variations of cultural practices (Lenartowicz and Roth, 2001), which are particularly probable in large and diverse countries, such as the United States and China. Furthermore, it might be fruitful for future research to analyze the impact of societal culture on countries with a low development stage because the sample used in this chapter is heavily based on developed economies and prior research (e.g., Sautet, 2013; Wennekers et al., 2005) found that in economies with a low developmental stage different mechanisms might exist.

5. Collectivistic culture and the relationship between education and part-time vs. full-time entrepreneurship

As shown in the previous chapter, all individual-level variables exhibit significant slope variance across the countries in the sample (compare chapter 4.3). This chapter addresses the research question if culture moderates the relationship of individual-level variables (compare chapter 3.2). Thus, this chapter addresses the second research question of research topic I: Does culture moderate the association between individual-level variables? Specifically, the impact of two forms of collectivism on the relationship between education and two forms of entrepreneurship, full-time and part-time entrepreneurship, is examined using cross-level interaction methodology. This chapter helps to understand the determinants of entrepreneurship at different levels of analysis and their contingencies. The findings of this chapter might help to explain some inconclusive results of prior academic research (compare chapter 5.5). Chapter 5.1 elaborates on the importance of cross-level interactions and education based on which the hypotheses are developed in chapter 5.2. In chapter 5.3 the sample is briefly described and cross-level interaction methodology is established. Chapter 5.4 reports the results of the main analyses and of robustness checks. The implications of the findings are discussed in chapter 5.5 and chapter 5.6 provides a conclusion and highlights areas for further research.

5.1 Entrepreneurship and cross-level interactions

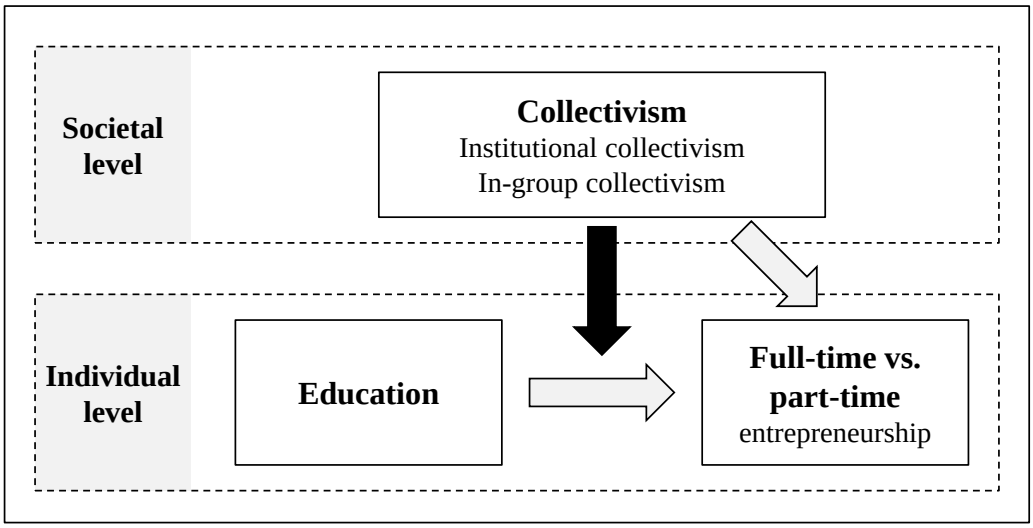
Education is widely recognized as one of the most relevant predictors for entrepreneurial activity (Davidsson and Honig, 2003; Rotefoss and Kolvereid, 2005). In fact, education has not only been found to generally drive individuals' inclination to engage in entrepreneurial endeavors (Bosma et al., 2004; Davidsson and Honig, 2003; Martin et al., 2013), but to also predict individuals engagement in full-time and part-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014; compare also chapter 4.4). The reasons for the positive relation between education and full-time entrepreneurship on the one, and part-time entrepreneurship on the other hand, are assumed to differ considerably. Education is thought to predict full-time entrepreneurship because it is positively associated with ambition, entrepreneurial self-efficacy and a desire for autonomy and innovation (Dimov, 2010; Goll and Rasheed, 2005; Kim et al., 2006; Zhao and Seibert, 2006). In contrast, the theoretical underpinning for the positive association between education and part-time entrepreneurial activity is grounded on the fact that education is associated with nonmonetary life-longings and a desire for task

variety and skill utilization (Kimmel and Smith Conway, 2001; Kotter-Grühn et al., 2009; Renna, 2006; van Boven and Gilovich, 2003) which can be satisfied more easily and with lower associated risk through part-time than through full-time entrepreneurship. Based on these differences in why education is expected to facilitate individuals' inclination to engage in full-time and part-time entrepreneurship, this chapter suggests that the link between education and full-time entrepreneurial activity on the one hand, and the link between education and part-time entrepreneurial activity on the other will vary considerably and differently across countries.

5.1.1 The importance of cross-level interaction effects

National contexts differ greatly with respect to their cultural composition (Hofstede, 1980; House et al., 2004), and prior research has shown that cultural differences may strengthen, weaken, or even reverse relationships between individual-level characteristics and entrepreneurial activities (Klyver et al., 2013; Laspita et al., 2012; Wennberg et al., 2013). This is because individual-level determinants may have different outcomes as culture may reinforce or detain certain behavior (Johns, 2006). This concept is closely related to cultural relativism (Herskovits, 1972; Spiro, 1986). Figure 5-1 illustrates the twofold impact of societal cultural practices on entrepreneurship.

Figure 5-1: The moderating effect of societal culture on determinants of entrepreneurship



The two relationships illustrated by the grey arrows in Figure 5-1 have been analyzed in chapter 4 with a focus on the direct impact of cultural practices on entrepreneurship. The black arrow from societal level collectivism to the arrow from education to full-time vs. part-

time entrepreneurship illustrates the focus of this chapter and indicates the cross-level interaction effect. Drawing on this perspective, this chapter suggests that societal collectivism, whose relation with entrepreneurial activity is still debated (e.g., Bullough et al., in press; Oyserman and Lee, 2008; Pinillos and Reyes, 2011; Steensma et al., 2000; Tiessen, 1997; Wennberg et al., 2013), will have a significant impact on the relationship between individuals' education and their engagement in entrepreneurial endeavors on a full-time or part-time basis.

5.1.2 Research approach

This chapter distinguishes between the two distinct aspects of societal collectivism: institutional collectivism, which refers to the extent to which societal institutions and practices encourage and reward the collective distribution of resources and actions (House et al., 2004), and in-group collectivism, which refers to the extent to which societal culture emphasizes cohesiveness and identification within families (Brewer and Venaik, 2011; Gelfand et al., 2004; House et al., 2004).

This chapter contributes to several areas of entrepreneurship research. First, it enhances the understanding of part-time and full-time entrepreneurship (Folta et al., 2010; Petrova, 2010, 2012; Raffiee and Feng, 2014) by providing insights on how the impact of education on the propensity to engage in part-time vs. full-time entrepreneurship varies with societal culture. As such, the chapter also contributes to the moderator perspective on education in the field of entrepreneurship (Unger et al., 2011). Furthermore, this chapter contributes to the debate on how collectivism is related to entrepreneurial activity (Oyserman and Lee, 2008; Pinillos and Reyes, 2011; Steensma et al., 2000; Tiessen, 1997; Wennberg et al., 2013), by showing that the two forms of collectivism, in different ways, affect the degree to which individuals are able to realize their entrepreneurial opportunities (Burmeister-Lamp et al., 2012).

5.2 Theory and hypotheses

This chapter provides the rationale and hypothesis why education is positively associated with part-time and full-time entrepreneurship (chapter 5.2.1). This is followed by a brief recap why collectivistic culture in general is expected to impact entrepreneurship (chapter 5.2.2; see also chapter 4.2.1 for more details). This is followed by the cross-level interaction hypotheses development why institutional collectivism is expected to negatively impact the relationship between education and full-time entrepreneurship in chapter 5.2.3 and why in-group

collectivism is expected to negatively impact the relationship between education and part-time entrepreneurship (chapter 5.2.4).

5.2.1 Why education determines part-time and full-time entrepreneurship

Education was found to positively predict individuals' inclination and engagement in full-time as well as in part-time entrepreneurial activity (Folta et al., 2010; Raffiee and Feng, 2014; see also chapter 3.1 and 4.4.3). Educational endowments are positively associated with individuals' inclination to engage in full-time entrepreneurial activity for several reasons.

First, high levels of education are associated with ambition which in an entrepreneurial context is closely linked to venture growth and wealth creation (Arora and Nandkumar, 2011; Kim et al., 2006; Lévesque et al., 2002). High ambition related to financial success can be satisfied through full-time entrepreneurship which enables individuals to gain extraordinary wealth (Cagetti and Nardi, 2006; Carter, 2011; Rosen, 1981). Ambition can be better satisfied through full-time than part-time entrepreneurship because it enables the entrepreneur to dedicate more attention and time to venture development (see also chapter 6.2.1).

Second, higher levels of education are associated with a longing for autonomy (Baumol, 2002; Kotter-Grühn et al., 2009; Marvel and Lumpkin, 2007; van Boven and Gilovich, 2003). Full-time entrepreneurship offers individuals the opportunity to satisfy this need, as full-time entrepreneurs are their own boss, and have the autonomy to decide what, when and how to work (Croson and Minniti, 2012; van Gelderen and Jansen, 2006).

Third, high levels of education are associated with a desire to find novel and superior solutions. In an entrepreneurial context this relates to innovative and disruptive business ideas (Markman et al., 2002; Marvel and Lumpkin, 2007). Novel business ideas require attention (Giuri et al., 2007; Link and Welsh, 2013) and full-time might be preferred to part-time entrepreneurship.

Fourth, educational endowments are positively associated with entrepreneurial self-efficacy (Dimov, 2010; Koellinger et al., 2007). Education is associated with creativity (Marvel and Lumpkin, 2007; Zhou et al., 2009) and fuels individuals' capacity to recognize and exploit business opportunities (Ardichvili et al., 2003; Ucbasaran et al., 2008). Additionally, higher educational endowments are associated with superior problem solving capabilities and managerial skills (Goll and Rasheed, 2005), thus enabling individuals to better overcome the hurdles involved in founding and developing a new business (Bosma et al., 2004; Cooper et al., 1994; Davidsson and Honig, 2003).

For several reasons, however, education exhibits an even stronger positive association with entrepreneurial activity on a part-time basis (Folta et al., 2010; chapter 4.4.3). First, high educational endowment is associated with nonmonetary life-longings (Kotter-Grühn et al., 2009; van Boven and Gilovich, 2003), wealth and well-paying wage-jobs (Cassar, 2006; Hartog and Oosterbeek, 1998; Mincer, 1974). Hence high educational endowment is related to the motivation and financial freedom to engage in part-time entrepreneurship for nonmonetary benefits rather than financial success. In addition to the general nonmonetary benefits outlined below, part-time entrepreneurship can satisfy individual specific nonmonetary benefits, such as pursuing a hobby, exploring an interest, or advancing social or environmental goals (Folta et al., 2010).

Second, high educational endowment is associated with a desire for variety (Kimmel and Smith Conway, 2001; Renna, 2006) and part-time entrepreneurship can satisfy this desire with lower entrepreneurial risk than full-time entrepreneurship. Part-time entrepreneurship may even offer greater variety than full-time entrepreneurship since part-time entrepreneurs are faced with the (very) different tasks of their main occupation in addition to the tasks of entrepreneurship which include developing products and services, building customer relations, and acquiring and managing resources (Hundley, 2001; Schjoedt, 2009).

Third, high educational endowment is associated with a desire for autonomy (Croson and Minniti, 2012; van Gelderen and Jansen, 2006). Part-time entrepreneurship may offer a higher level of life-autonomy than full-time entrepreneurship, since part-time entrepreneurship requires less time and enables individuals to combine part-time entrepreneurship with other occupations and activities (Koster et al., 2014; Strohmeyer et al., 2006). In addition to life-autonomy, part-time entrepreneurs also possess work-autonomy in their part-time venture where they have autonomy regarding the business model, the working hours and the working style (Cooper and Artz, 1995; Croson and Minniti, 2012; Hamilton, 2000).

Fourth, high educational endowment is not only associated with superior skills but also with a broader range of skills (Lévesque et al., 2002). Underutilization of skills has been associated with lower overall satisfaction (Feather and Rauter, 2004; Ting, 1997). Individuals with high levels of education might be inclined to enter part-time entrepreneurship to utilize skills which are not needed in the main occupation.

As outlined in this chapter, education is expected to be positively associated with full-time and part-time entrepreneurship, however, it is expected that high educational endowment aligns better with part-time entrepreneurship than with full-time entrepreneurship.

Hypothesis 1: Education is positively associated with part-time and full-time entrepreneurship but has a stronger positive association with part-time than with full-time entrepreneurship.

The following chapter will establish the importance of societal cultural collectivism and its impact on part-time and full-time entrepreneurship.

5.2.2 Collectivistic culture and entrepreneurship

Individual-level motivations and perceptions stimulate entrepreneurial activity and are contingent on cultural and behavioral norms (Johns, 2006; Wennberg et al., 2013). Those contingencies cross levels of analysis by encompassing individual and societal aspects. Some individual characteristics, actions and outcomes align more with some cultures than with others. Culture may thus inhibit the effects of education to enter part-time or full-time entrepreneurship. In the following, the mechanisms through which culture impacts individuals and different forms of collectivism will be explained.

Societal culture is a collective construct incorporating the collectively held norms and believes that distinguish members from one society from those of another (Hofstede, 1984; House et al., 2004; see also chapter 4.2.1 for a more detailed explanation of culture and its impact). Culture reflects what is considered appropriate and legitimate within a particular national context, thus affecting individuals' behavior and its outcomes in three ways. First, societal culture shapes individuals' attitudes by impacting an individual's cognition, values, needs and motivation (Guiso et al., 2006; Hayton and Cacciotti, 2013; Jack and Anderson, 2002; Javidan and House, 2001; Oyserman and Lee, 2008). Second, societal culture reflects informal social sanctions and endorsements which arise through collective mechanisms such as shared expectations and preferences and coerce individuals to conformity (Hayton et al., 2002; McMullen and Shepherd, 2006). Third, societal culture shapes formal institutions that promote or deter individual behavior through established structures (Greif, 1994; Hayton and Cacciotti, 2013; Witt and Redding, 2008).

Recently, the concept of societal collectivism has been further differentiated. The Global Leadership and Organizational Behavior Effectiveness (GLOBE) study (House et al., 2004)

has found two clearly distinguishable facets of collectivism: (1) institutional collectivism, which describes the extent to which societal institutions and practices encourage and reward a collective distribution of resources and collective action at the expense of the individual in return for the loyalty of the collective towards the individual (Brewer and Venaik, 2011; Gelfand et al., 2004), and (2) in-group collectivism, which describes the extent to which societal culture emphasizes cohesiveness, importance and pride within families (Brewer and Venaik, 2011; Gelfand et al., 2004).

In line with these conceptual differences between institutional and in-group collectivism, prior research has already provided evidence for the differential impact of the two societal cultural dimensions on entrepreneurial activity. Autio et al. (2010) observed that while institutional collectivism is negatively related to entrepreneurial activity, in-group collectivism displays no significant effect. Furthermore, chapter 4 showed that institutional collectivism has a significant negative effect on full-time entrepreneurship but no significant effect on part-time entrepreneurship.

Individualism-collectivism has been one of the most researched cultural dimensions regarding its impact on entrepreneurship (e.g., Alesina and Schündeln, 2007; Hayton and Cacciotti, 2013; Morris et al., 1994; Pinillos and Reyes, 2011; Tiessen, 1997). Some streams of research have associated entrepreneurship with individualism (Hayton et al., 2002), others with collectivism (Pinillos and Reyes, 2011) and some with a balance between individualism and collectivism (Bullough et al., in press). Culture was found to moderate the impact of individual-level variables on the propensity to engage in entrepreneurship (Wennberg et al., 2013). Building on these observations, chapter 5.2.3 and 5.2.4 will theoretically address different mechanisms through which institutional and in-group collectivism are expected to differ in their effects on the relationships between education and full-time and part-time entrepreneurial activity.

5.2.3 The moderating effect of institutional collectivism on the link between education and full-time entrepreneurship

In societies with high levels of institutional collectivism, group membership, collective achievements and collective interests are favored over individual achievements and interests (Brewer and Venaik, 2011; Gelfand et al., 2004). Entrepreneurial behavior generally involves deviating from commonly accepted behavior (Backhaus, 2003). The degree to which deviation from the commonly accepted behavior is permitted is associated with societal institutional collectivism. Societies which are characterized by high institutional collectivism are wary of deviation since it might challenge established norms and structures.

As already outlined in chapter 5.2.2 and in chapter 4.2.3 Hypothesis 3, institutional collectivism is negatively associated with full-time entrepreneurship but not with part-time entrepreneurship. Full-time entrepreneurship signals that the entrepreneurs value their individual interests higher than the interests of the collective which is disdained in societies which high level of institutional collectivism (Autio et al., 2013; Shane, 1993). Contrarily, part-time entrepreneurs are less focused on achievement and monetary success and have enough time to meet the expectation and obligations of the collective. Hence part-time entrepreneurship can be aligned rather well with high levels of in-group collectivism. Consequently a negative association between institutional collectivism and full-time entrepreneurship is expected.

Hypothesis 2a: Societal institutional collectivism practices are negatively associated with full-time entrepreneurship but do not exhibit a significant association with part-time entrepreneurship.

As described in chapter 5.2.1, the link between education and full-time entrepreneurial activity is based on ambition, autonomy and innovativeness (Amit et al., 1995; Arora and Nandkumar, 2011; Kim et al., 2006; Marvel and Lumpkin, 2007). Striving for individual achievements by founding a high-growth full-time business or realizing a particularly innovative entrepreneurial endeavor are in stark contrast to the societal cultural practices associated with institutional collectivism. High growth and high income intentions are likely to create highly visible businesses which do not align well with societal-level institutional collectivism which favors group loyalty at the expense of the individual. Similarly, innovative businesses which typically follow particularly aggressive competitive strategies and challenge existing structures (Aghion and Howitt, 1990; Arora and Nandkumar, 2011; Marvel and

Lumpkin, 2007; Venkataraman, 2004) do not align well with the societal norms and beliefs characteristic for high levels of institutional collectivism which promotes consistency and aims to protect established structures (Autio et al., 2013; Gelfand et al., 2004; House et al., 2002). For these reasons, it is expected that institutional collectivism weakens, i.e., negatively moderates, the positive association between education and full-time entrepreneurial activity.

Hypothesis 2b: There is a negative moderating effect of societal institutional collectivism on the positive association between education and full-time entrepreneurship.

In contrast, it is not expected that institutional collectivism has a similarly negative effect on the link between education and part-time entrepreneurial activity. As noted previously, part-time entrepreneurship is mainly entered for nonmonetary benefits. Part-time businesses generally are small, exist at the fringes of the economy and are consequently less visible for the society. Resulting from their low impact and low visibility, part-time entrepreneurs are less likely to be considered a threat to established structures and norms. In fact, high levels of institutional collectivism are associated with loyalty of the collective towards the individual. The collective might therefore even support part-time entrepreneurs in their endeavors since they do not pose a threat to established structures. Consequently, what drives individuals with high educational endowments into part-time entrepreneurship is much more aligned with the norms, practices characteristics for high levels of institutional collectivism. As a consequence, it is suggested that the relationship between education and part-time entrepreneurship will not be affected by institutional collectivism in a similar way as the link between education and full-time entrepreneurship.

Hypothesis 2c: The moderating effect of societal institutional collectivism on the link between education and part-time entrepreneurship is significantly weaker than on the link between education and full-time entrepreneurship.

5.2.4 The moderating effect of in-group collectivism on the link between education and part-time entrepreneurship

In-group collectivism describes the extent to which societal culture emphasizes cohesiveness and pride within families (Brewer and Venaik, 2011; Gelfand et al., 2004). Brewer and Venaik (2011) particularly stress that in-group collectivism is heavily based on the feeling of pride in other family members' achievements. Entrepreneurship exhibits a heavily skewed income distribution where some entrepreneurs become very wealth while others struggle to get by (Rosen, 1981). Successful entrepreneurship can well be suitable to make other family members proud by increasing the social status (Singer et al., 2015). Contrarily, entrepreneurship can have a negative impact on the entrepreneur's family (Lockwood et al., 2006). Since the impact of societal in-group collectivism is ambivalent for full-time and part-time entrepreneurship, no significant association is expected.

Hypothesis 3a: Societal in-group collectivism practices are not associated with full-time or part-time entrepreneurship.

As noted in chapter 5.2.1, individuals with high educational endowments enter part-time entrepreneurship because of nonmonetary life-longings, and they focus on gaining nonmonetary, rather than monetary benefits from entrepreneurship (Folta et al., 2010; Kotter-Grühn et al., 2009; Markantoni et al., 2013; van Boven and Gilovich, 2003). Such goals do not well align with high levels of societal cultural in-group collectivism. In societies with high in-group collectivism the desire to make family members proud and maintaining strong family ties is deeply engrained (Brewer and Venaik, 2011; Gelfand et al., 2004). With anecdotal evidence suggesting that part-time entrepreneurs receive pity rather than admiration from others (Lutz and Luck, 2011), it is highly unlikely that part-time entrepreneurship is suitable to make family members feel proud. Particularly for individuals with high levels of education who may gain economic wealth and social status, through either full-time entrepreneurship or wage-employment (Carter, 2011; Mirowsky and Ross, 2003; Rosen, 1981), engaging in part-time entrepreneurship will be perceived as a waste of potential and socially disdained. Furthermore, part-time entrepreneurship can negatively impact the time available to maintain family ties (Lévesque and MacCrimmon, 1997; Strohmeyer et al., 2006). This is particularly true for individuals with high levels of education who tend to work longer hours in wage-employment than individuals with lower educational endowments (Brett and Stroh, 2003; Sturges and Guest, 2004). Part-time entrepreneurship thus also clashes with

the emphasis on cohesiveness within families which is characteristic for societies with high levels of in-group collectivism As a consequence, it is expected that societal in-group collectivism weakens, i.e., negatively moderates, the link between education and part-time entrepreneurial activity

Hypothesis 3b: There is a negative moderating effect of societal in-group collectivism on the positive association between education and part-time entrepreneurship.

In contrast, it is not expected that in-group collectivism has a similarly negative effect on the link between education and full-time entrepreneurial activity. As outlined previously individuals with high educational endowments are inclined to full-time entrepreneurship, as it allows them to satisfy their ambition (Collins et al., 2004; Kim et al., 2006). Ambitious, full-time entrepreneurship is well in line with societal in-group collectivism. As full-time entrepreneurship allows for gaining high social and economic status, it does not interfere with the societal norms of making family members proud (Breen and Jonsson, 2005; Carter, 2011; Mirowsky and Ross, 2003; Rosen, 1981). As a consequence, it is suggested that the relationship between education and full-time entrepreneurship will not be affected by in-group collectivism in a similar way as the link between education and part-time entrepreneurship.

Hypothesis 3c: The moderating effect of societal in-group collectivism on the link between education and full-time entrepreneurship is significantly weaker than on the link between education and part-time entrepreneurship.

5.3 Sample and method

This chapter describes the sample and analytical methods employed to address the research question if culture moderates the association between individual-level variables. To test the hypotheses the same data set as described in chapter 4.3 was used. The data set comprised of 28,157 individuals from 27 national contexts by combining data from the Flash Eurobarometer 354 (European Commission, 2012), the GLOBE study (House et al., 2004) and The World Bank (The World Bank, 2014).

5.3.1 Education and societal collectivism as independent variables

The measurement of education is crucial to address the hypotheses established in chapter 5.2. The variable *education* was only briefly addressed in chapter 4.3.3 and will now be explained in greater detail. To capture individuals' education, the analyses rely on years of formal education, which is the most widely recognized and used indicator for individuals' level of general education (Bates, 1990; Blanchflower et al., 2001; Davidsson and Honig, 2003; Florin et al., 2003; Parker and van Praag, 2006). Furthermore, years of education was established as a relevant predictor for full-time and part-time entrepreneurial activity (Folta et al., 2010; Raffiee and Feng, 2014; see also chapter 4). To obtain this variable, earlier research utilizing the Euromonitor data set was followed (Adam-Müller et al., 2015; Block et al., 2013b). The Euromonitor data set captures the respondents' age at the end of full-time education (European Commission, 2012). Following previous research (Adam-Müller et al., 2015; Block et al., 2013b) 6 years were subtracted from this figure, the typical starting age of compulsory education (UIS, 2014). Moreover, in accordance with prior research, a lower bound of 9 and an upper bound of 19 years of full-time education was introduced (Adam-Müller et al., 2015; Block et al., 2013b). The lower bound relates to the fact that all countries in the sample require a level of compulsory education of at least 9 years (Barro and Lee, 2013; UIS, 2014). The upper bound of 19 years relates to the maximum number of years in full-time education typically needed to obtain a master's degree or similar. Since education is central to this chapter, and the operationalization following prior research is not straight forward, two different forms of operationalization of education were also used with similar results (compare chapter 5.4.2)

The two moderator variables, societal *institutional collectivism* and societal *in-group collectivism*, were obtained from the respective GLOBE societal cultural practices scores (House et al., 2004). Societal cultural practices refer to the cultural norms currently enacted within a particular national context and differ from societal cultural values which relate to how the cultural norms should be. Since this chapter considers current entrepreneurial activity, current enacted norms correspond best with the aim of these analyses (Autio et al., 2013; Javidan et al., 2006; Stephan and Uhlaner, 2010; Thai and Turkina, 2014). Table 5-1 illustrates the range of entrepreneurship rates and collectivism scores for the countries in the data set.

Table 5-1: Institutional collectivism and in-group collectivism across countries

	N	Full-time entrepreneurs in %	Part-time entrepreneurs in %	Institutional collectivism score	In-group collectivism score
Austria	974	11.6	5.6	4.30	4.85
Brazil	963	32.0	3.0	3.83	5.18
China	947	9.0	11.7	4.77	5.80
Czech Republic	961	13.2	7.7	3.60	3.18
Denmark	985	6.7	4.9	4.80	3.53
Finland	987	8.1	5.0	4.63	4.07
France	991	6.3	3.8	3.93	4.37
Germany	976	9.8	3.5	3.75	4.11
Greece	985	16.0	4.5	3.25	5.27
Hungary	973	6.1	6.5	3.53	5.25
India	983	21.9	15.4	4.38	5.92
Ireland	992	13.2	8.1	4.63	5.14
Israel	960	14.9	5.2	4.46	4.70
Italy	978	11.8	3.1	3.68	4.94
Japan	888	12.3	5.0	5.19	4.63
Korea (Republic of)	997	15.6	2.7	5.20	5.54
Netherlands	985	14.0	5.1	4.46	3.70
Poland	975	11.8	5.6	4.53	5.52
Portugal	986	9.5	5.6	3.92	5.51
Russian Federation	898	7.3	15.7	4.50	5.63
Slovenia	961	5.2	5.2	4.13	5.43
Spain	982	9.6	5.4	3.85	5.45
Sweden	985	5.3	6.0	5.22	3.66
Switzerland	977	12.9	6.8	4.06	3.97
Turkey	971	11.6	8.0	4.03	5.88
United Kingdom	978	8.2	5.6	4.27	4.08
United States	2,919	12.3	10.2	4.20	4.25
Total/Mean	**28,157**	**11.8**	**6.7**	**4.26**	**4.80**

Notes: own calculations based on European Commission (2012) and House et al. (2004)

5.3.2 Dependent variable and controls

The dependent variable *entrepreneurial status* is described in detail in chapter 4.3.2. The data set includes 3,309 full-time entrepreneurs (11.8%), 1,888 part-time entrepreneurs (6.7%) and 22,960 non-entrepreneurs (81.5%). The controls included in the analyses are identical to the variables described in 4.3.3. On the individual-level they include the variables female, *age/10, age/10 squared, household income, household members* and *parental self-employment*. On the societal-level, the societal cultural practices scores for all nine cultural dimensions found within the GLOBE project were included in the analyses. Besides *institutional collectivism* and *in-group collectivism* these dimensions are: *humane orientation*, *power distance*, *assertiveness*, *uncertainty avoidance*, *performance orientation*, *future orientation* and *gender*

egalitarianism (House et al., 2004). Additionally country-level indicators for gross domestic product per capita at purchasing power parity in US Dollars (*GDP per capita*) and the countries' logged population in millions (*population log*) as proxies for developmental status and market size are included (Autio et al., 2013; Sautet, 2013).

5.3.3 Descriptive statistics and regression model

The theoretical reasoning as well as the data spans two levels of analyses. Entrepreneurial activity and education are individual-level concepts, whereas societal culture resides on the national-context level (Autio et al., 2013; McMullen and Shepherd, 2006; Peterson et al., 2012; Phan, 2004). As a consequence, a multi-level approach is adequate to test the chapter's hypotheses. Multi-level modeling allows for a simultaneous, unbiased estimation of individual-level and country-level effects, as well as cross-level interactions (Aguinis et al., 2011; Bliese, 2000; Dawson, 2014; Hofmann, 1997; Peterson et al., 2012; Raudenbush and Bryk, 2002).

As the dependent variable comprises three states (full-time entrepreneur, part-time entrepreneur, and non-entrepreneur), and the independence of irrelevant alternatives (IIA) condition hold based on the Hausman-McFadden (Hausman and McFadden, 1984), as well as the Small-Hsiao test (Small and Hsiao, 1985), a multinomial model is used to test the hypotheses. Specifically, a logistic multinomial model (Raudenbush et al., 2011) is used to test the hypotheses by establishing non-entrepreneurs as the base category and testing for the proposed effects on full-time and part-time entrepreneurship. Following best practice recommendations for the analyses of cross-level interactions (Aguinis et al., 2013), random slope, random intercept models were specified. Furthermore, the individual-level predictor was centered around the group mean, whereas the control variables were centered around the grand mean (Enders and Tofighi, 2007; Hofmann and Gavin, 1998; Kreft et al., 1995). To test for differences in the effects on full-time and part-time entrepreneurial activity a Wald test was employed (Kodde and Palm, 1986; Long and Freese, 2006). A Chi^2 test was used to assess the need for multi-level modelling.

Table 5-2 displays the descriptive statistics for variables entered in the analyses.

Table 5-2: Descriptive statistics

Variable	N	Mean	SD	Min	Max
Individual-level (level 1)					
Full-time entrepreneur	28,157	0.12		0	1
Part-time entrepreneur	28,157	0.07		0	1
Education	28,157	13.99	3.46	9	19
Female	28,157	0.56		0	1
Household income	28,157	2.91	0.89	1	4
Household members	28,157	2.50	1.27	1	10
Age	28,157	47.77	17.76	15	97
Parental self-employment	28,157	0.30		0	1
Country-level (level 2)					
Population in million	27	157.11	322.34	2.06	1,350.69
GDP per capita at PPP	27	27.00	10.43	3.12	42.00
Power distance	27	5.06	0.49	3.59	5.61
Humane orientation	27	3.90	0.40	3.22	4.96
Assertiveness	27	4.15	0.38	3.38	4.79
Uncertainty avoidance	27	4.23	0.67	2.88	5.37
Performance orientation	27	4.07	0.40	3.20	4.94
Future orientation	27	3.90	0.46	2.88	4.73
Gender egalitarianism	27	3.40	0.40	2.50	4.08
Institutional collectivism	27	4.26	0.49	3.25	5.22
In-group collectivism	27	4.76	0.77	3.18	5.92

Notes: own calculations based on European Commission (2012), The World Bank (2014) and House et al. (2004); SD represents standard deviation

The correlation of the variables is shown in Table 5-3. Since this chapter analyzes cross-level interaction effects, the correlations are shown in a single table compared to the correlations being split according to the level of analysis in chapter 4.3.4.

Table 5-3: Correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Full-time entrepreneur													
(2) Part-time entrepreneur	-0.10												
(6) Education	0.07	0.04											
(3) Female	-0.12	-0.08	-0.06										
(4) Household income	0.03	0.03	0.18	-0.06									
(5) Household members	0.05	0.05	-0.06	-0.04	-0.03								
(7) Age	-0.03	-0.08	-0.04	0.06	0.01	-0.34							
(8) Parental self-employment	0.10	0.02	0.02	-0.01	0.06	0.01	0.02						
(9) Population in million	0.04	0.09	0.01	-0.04	0.03	0.23	-0.15	0.00					
(10) GDP per capita PPP	-0.05	-0.03	0.08	0.01	0.16	-0.32	0.29	-0.09	-0.48				
(11) Power distance	0.01	0.00	-0.12	0.01	-0.15	0.18	-0.18	0.02	0.12	-0.38			
(12) Humane orientation	0.02	0.07	0.07	-0.04	0.11	0.06	0.01	-0.01	0.40	0.03	-0.36		
(13) Assertiveness	0.02	-0.02	-0.03	0.00	-0.06	-0.03	0.01	-0.08	-0.20	0.28	0.22	-0.52	
(14) Uncertainty avoidance	-0.04	-0.02	0.04	-0.02	0.23	-0.19	0.18	-0.04	0.07	0.47	-0.54	0.18	-0.16
(15) Performance orientation	0.04	0.02	0.09	-0.04	0.19	-0.04	0.05	-0.11	0.27	0.42	-0.34	0.34	0.21
(16) Future orientation	0.02	-0.01	0.07	-0.04	0.24	-0.14	0.14	-0.08	0.05	0.55	-0.44	0.33	0.04
(17) Gender egalitarianism	-0.07	0.00	-0.01	0.06	-0.01	-0.14	0.13	0.04	-0.31	-0.02	-0.27	-0.09	-0.31
(18) Institutional collectivism	-0.02	0.02	0.13	-0.04	0.18	-0.02	0.03	0.04	0.16	0.12	-0.16	0.57	-0.49
(19) In-group collectivism	0.03	0.03	-0.10	-0.01	-0.19	0.30	-0.27	0.06	0.36	-0.69	0.78	-0.06	0.06

… continued	14	15	16	17	18
(15) Performance orientation	0.54				
(16) Future orientation	0.77	0.69			
(17) Gender egalitarianism	-0.15	-0.55	-0.37		
(18) Institutional collectivism	0.30	0.35	0.41	-0.14	
(19) In-group collectivism	-0.65	-0.31	-0.56	-0.24	-0.06

Notes: based on N=28,157
Own calculations based on European Commission (2012), The World Bank (2014) and House et al. (2004)

5.4 Results

In the analyses random slope, random intercept methodology is used. Table 5-4 shows the results of Models used to test the hypotheses. For each Model the coefficients, significance levels and standard errors are reported. Model 1 represents the base model which does not include any cross-level interactions. Model 1 is identical to the Full Model presented in chapter 4, Table 4-4. In Model 2 the interaction effect *institutional* × *collectivism education* is included. Model 3 includes the interaction effect of *in-group collectivism* × *education*. Model 4 includes both interaction terms.

Table 5-4: Results of cross-level regression analyses

	Model 1				Model 2				Model 3				Model 4			
	Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time	
Individual-level (level 1)																
H1: Education	0.039 ***	(0.01)	0.064 ***	(0.01)	0.039 ***	(0.01)	0.064 ***	(0.01)	0.039 ***	(0.01)	0.063 ***	(0.01)	0.039 ***	(0.01)	0.063 ***	(0.01)
Female	-0.916 ***	(0.07)	-0.667 ***	(0.06)	-0.919 ***	(0.07)	-0.668 ***	(0.06)	-0.917 ***	(0.07)	-0.667 ***	(0.06)	-0.918 ***	(0.07)	-0.668 ***	(0.06)
Household income	0.155 ***	(0.05)	0.106 **	(0.04)	0.149 ***	(0.05)	0.106 **	(0.04)	0.156 ***	(0.05)	0.108 **	(0.04)	0.151 ***	(0.05)	0.107 **	(0.04)
Household members	0.076 ***	(0.03)	0.067 **	(0.03)	0.078 ***	(0.03)	0.067 **	(0.03)	0.075 ***	(0.03)	0.065 **	(0.03)	0.077 ***	(0.03)	0.066 **	(0.03)
Age/10	2.525 ***	(0.17)	0.436 ***	(0.12)	2.536 ***	(0.18)	0.440 ***	(0.12)	2.525 ***	(0.18)	0.449 ***	(0.13)	2.531 ***	(0.18)	0.451 ***	(0.13)
Age/10 squared	-0.271 ***	(0.02)	-0.061 ***	(0.01)	-0.272 ***	(0.02)	-0.061 ***	(0.01)	-0.271 ***	(0.02)	-0.062 ***	(0.01)	-0.271 ***	(0.02)	-0.063 ***	(0.01)
Parental self-employment	0.665 ***	(0.06)	0.427 ***	(0.06)	0.660 ***	(0.06)	0.427 ***	(0.06)	0.662 ***	(0.06)	0.426 ***	(0.06)	0.660 ***	(0.06)	0.427 ***	(0.06)
Country-level (level 2)																
Population Log[a]	-0.017	(0.04)	-0.075	(0.05)	-0.009	(0.04)	-0.063	(0.05)	-0.012	(0.04)	-0.061	(0.05)	-0.009	(0.04)	-0.062	(0.05)
GDP per capita (PPP)	-0.024 **	(0.01)	-0.012	(0.01)	-0.030 **	(0.01)	-0.012	(0.01)	-0.032 ***	(0.01)	-0.012	(0.01)	-0.031 ***	(0.01)	-0.013	(0.01)
Power distance	-0.240	(0.26)	0.281	(0.29)	-0.333	(0.25)	0.190	(0.30)	-0.344	(0.25)	0.190	(0.30)	-0.343	(0.25)	0.174	(0.30)
Humane orientation	0.301	(0.23)	0.687 **	(0.26)	0.281	(0.22)	0.684 **	(0.27)	0.282	(0.22)	0.668 **	(0.27)	0.282	(0.22)	0.682 **	(0.27)
Assertiveness	-0.087	(0.29)	0.290	(0.33)	0.004	(0.28)	0.326	(0.33)	0.045	(0.28)	0.307	(0.33)	0.014	(0.28)	0.342	(0.34)
Uncertainty avoidance	-0.742 ***	(0.16)	-0.116	(0.18)	-0.703 ***	(0.15)	-0.131	(0.19)	-0.681 ***	(0.15)	-0.129	(0.19)	-0.691 ***	(0.14)	-0.107	(0.19)
Performance orientation	-0.142	(0.27)	0.051	(0.30)	-0.128	(0.25)	-0.019	(0.31)	-0.171	(0.26)	0.001	(0.31)	-0.141	(0.25)	-0.050	(0.31)
Future orientation	0.825 ***	(0.25)	0.054	(0.29)	0.736 ***	(0.24)	0.019	(0.29)	0.755 ***	(0.24)	0.015	(0.30)	0.745 ***	(0.24)	0.025	(0.30)
Gender egalitarianism	-0.475 **	(0.21)	0.030	(0.24)	-0.470 **	(0.20)	-0.013	(0.25)	-0.444 **	(0.20)	-0.009	(0.25)	-0.453 **	(0.20)	0.002	(0.25)
H2a: Institutional collectiv.	-0.385 **	(0.17)	-0.136	(0.19)	-0.418 **	(0.16)	-0.081	(0.20)	-0.356 **	(0.16)	-0.042	(0.19)	-0.433 **	(0.16)	-0.101	(0.20)
H3a: In-group collectivism	-0.122	(0.22)	-0.270	(0.25)	-0.113	(0.21)	-0.286	(0.25)	-0.058	(0.21)	-0.231	(0.26)	-0.055	(0.21)	-0.213	(0.26)
Interaction terms																
H2b: Institutional collectivism × Education					-0.068 ***	(0.02)	-0.009	(0.02)					-0.066 ***	(0.02)	-0.003	(0.02)
H3b: In-group collectivism × Education									-0.017	(0.01)	-0.030 **	(0.01)	-0.010	(0.01)	-0.030 **	(0.01)
H2c and *H3c*: Differences					*H2c*: $p < 0.05$				*H3c*: $p > 0.1$				*H2c*: $p < 0.05$, *H3c*: $p > 0.1$			
Observations	28,157				28,157				28,157				28,157			
Variables	18				19				19				20			
Groups (countries)	27				27				27				27			
Random effect (χ^2 test)[b]	***				***				***				***			
AIC[c]	105,788				105,936				105,858				105,976			

Notes: Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, two-tailed

[a] Log transformation to improve the readability of results

[b] Random intercept and random slopes for all variables are significant indicating that multilevel methodology should be used

[c] AIC: Akaike's information criterion = 2k - 2 × (log likelihood), with k being the number of predictors in the model. Smaller AIC indicates better model fit

As shown in chapter 4.4, Model 1 illustrates that individual-level and country-level variables have a significant impact on the probability that individuals engage in full-time and part-time entrepreneurship. Additionally, every single individual-level independent variable exhibits significant slope variance which justifies the use of random slope and random intercept methodology. Furthermore, significant slope variance is and indicator of country-level moderating effects. The values of the Akaike's information criterion (AIC) in Table 5-4 do, however, not indicate an improved model fit by including the interaction terms. This might be because Model 1 already implicitly accounts for cross-level interactions by using random slope, random intercept methodology and thus specifying specific cross-level interactions might not improve model fit (Aguinis et al., 2013; Akaike, 1974; Gelman and Hill, 2006). This is particularly true for the AIC which also accounts for the number of variables entered into the model (Burnham and Anderson, 2002).

5.4.1 Results regarding hypotheses

With respect to the variables of interest, Model 1, 2, 3, and 4 reveal that *education* has a significant positive impact on the propensity to engage in full-time entrepreneurship (γ = 0.039, $p < 0.01$) and an even more positive impact on part-time entrepreneurship (γ = 0.063 to 0.064, $p < 0.01$), thus confirming *Hypothesis 1*. Moreover, concurrent with prior research (Folta et al., 2010; Raffiee and Feng, 2014; chapter 4) the association of education is significantly stronger for part-time than for full-time entrepreneurship ($p < 0.06$). In line with prior research (Autio et al., 2013; chapter 4) *institutional collectivism* has a significant negative effect on full-time entrepreneurship in all models (γ = -0.356 to -0.433, $p < 0.05$), and no significant effect on part-time entrepreneurship (γ = -0.042 to -0.136, p = n.s.), which confirms *Hypothesis 2a*. Furthermore, *in-group collectivism* displays no significant association with part-time or full-time entrepreneurship in the models, thus confirming *Hypothesis 3a*.

Models 2 and 3 include the interaction effects proposed by *Hypotheses 2b*, *2c* and *3b*, *3c* respectively. Model 4 simultaneously comprises all interaction terms and is referred to as the full-model. Model 2 and 4 support *Hypothesis 2b*, suggesting a negative moderation effect of societal institutional collectivism on the positive relationship between education and full-time entrepreneurial activity (Model 2: γ = -0.068, $p < 0.01$; Model 4: γ = -0.066, $p < 0.01$,). Figure 5-2 illustrates this interaction effect.

Figure 5-2: Interaction between institutional collectivism and education for full-time entrepreneurship

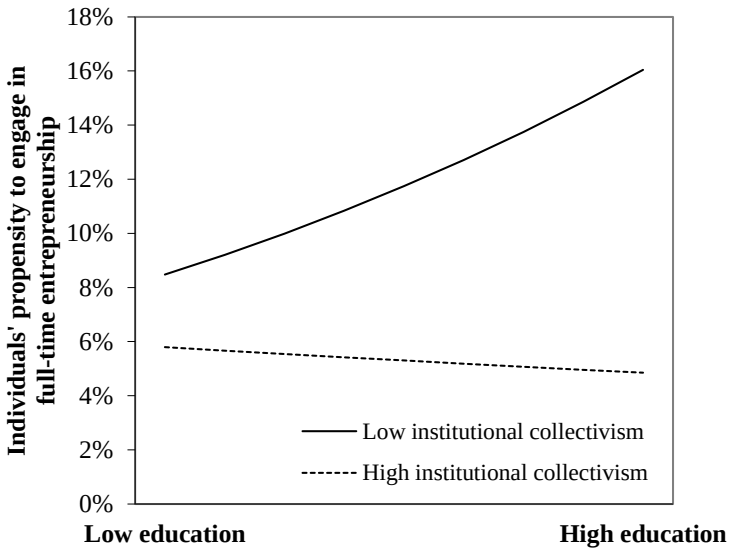


Figure based on Model 4 in Table 5-4 and plotted according to Dawson (2014)

Model 2 and 4 also support *Hypothesis 2c*, stating that the moderating effect of societal institutional collectivism on the link between education and part-time entrepreneurship is significantly weaker than the effect on the link between education and full-time entrepreneurship. Specifically, Wald tests reveal that the moderating impact of institutional collectivism is significantly weaker for part-time entrepreneurship (Model 2 and 4: $p < 0.05$).

Model 3 and 4 support *Hypothesis 3b*, which posits a negative moderating effect of societal in-group collectivism on the positive association between education and part-time entrepreneurship. Specifically, the interaction effects of in-group collectivism and education for part-time entrepreneurship are negative and significant (Model 3 and 4: $\gamma = -0.030$, $p < 0.05$). Figure 5-3 illustrates this interaction effect.

Figure 5-3: Interaction between in-group collectivism and education for part-time entrepreneurship

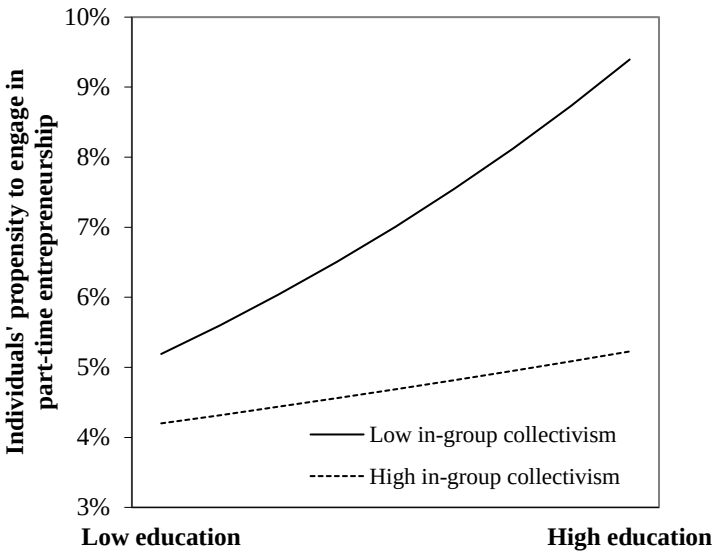


Figure based on Model 4 in Table 5-4 and plotted according to Dawson (2014)

No support is found for *Hypothesis 3c*, which stated that the moderating effect of societal in-group collectivism on the link between education and full-time entrepreneurship is significantly weaker than the link between education and part-time entrepreneurship. In fact, Wald tests indicate that the observed differences between the moderating effects of in-group collectivism and education on full-time and part-time entrepreneurship miss the threshold for marginal significance (Model 4: $p = 0.19$).

5.4.2 Robustness checks

Similar to the robustness checks in the previous chapter (compare chapter 4.4.2) the robustness of the results was initially tested regarding different treatments of cases with missing values. A Markov Chain Monte Carlo imputation (MCMC) procedure (Carpenter et al., 2011; Carpenter and Kenward, 2012) yielded almost identical results compared to the listwise deletion used in the analyses. Furthermore, excluding single countries form the sample did not impact the findings. Specifically, the exclusion of the US as well the exclusion of India, Brazil and China which represent the countries with the highest and lowest GDP per capita respectively did not impact the results.

As indicated in chapter 5.3.1, education and its operationalization are crucial for the analyses in this chapter. The operationalization of *education* used for the analyses in Table 5-4 aims to achieve consistency with prior research (Adam-Müller et al., 2015; Block et al., 2013b) but is

also prone to criticism since it is constructed based on several assumptions. Two assumptions of the operationalization of *education* can be relaxed through the available data.

First, the operationalization of *education* sets a lower boundary of 9 years to account for the compulsory years of schooling (Barro and Lee, 2013; UIS, 2014). However, the number of compulsory years of schooling fluctuates over time (UIS, 2014) and particularly older individuals might not have had 9 years of compulsory full-time education. To highlight the impact of this assumption, Table 5-5 contrasts the regression results of the initial definition and a relaxed definition of education.

Table 5-5: Results of model with relaxed lower bound of education

	Education with lower bound of 9 Model 4 in Table 5-4				**Education without lower bound**			
	Full-time entrepreneur		Part-time entrepreneur		Full-time entrepreneur		Part-time entrepreneur	
Individual-level (level 1)								
H1: Education (9-19)	0.039 ***	(0.01)	0.063 ***	(0.01)				
H1: Education (0-19)					0.037 ***	(0.01)	0.057 ***	(0.01)
Female	-0.918 ***	(0.07)	-0.668 ***	(0.06)	-0.918 ***	(0.07)	-0.667 ***	(0.06)
Household income	0.151 ***	(0.05)	0.107 **	(0.04)	0.151 ***	(0.05)	0.108 **	(0.04)
Household members	0.077 ***	(0.03)	0.066 **	(0.03)	0.076 ***	(0.03)	0.065 **	(0.03)
Age/10	2.531 ***	(0.18)	0.451 ***	(0.13)	2.523 ***	(0.18)	0.439 ***	(0.13)
Age/10 squared	-0.271 ***	(0.02)	-0.063 ***	(0.01)	-0.270 ***	(0.02)	-0.061 ***	(0.01)
Parental self-employment	0.660 ***	(0.06)	0.427 ***	(0.06)	0.661 ***	(0.06)	0.427 ***	(0.06)
Country-level (level 2)								
Population Log[a]	-0.009	(0.04)	-0.062	(0.05)	-0.032 ***	(0.01)	-0.014	(0.01)
GDP per capita (PPP)	-0.031 ***	(0.01)	-0.013	(0.01)	-0.014	(0.04)	-0.061	(0.05)
Power distance	-0.343	(0.25)	0.174	(0.30)	-0.330	(0.25)	0.150	(0.30)
Humane orientation	0.282	(0.22)	0.682 **	(0.27)	0.265	(0.22)	0.658 **	(0.27)
Assertiveness	0.014	(0.28)	0.342	(0.34)	-0.025	(0.28)	0.330	(0.34)
Uncertainty avoidance	-0.691 ***	(0.14)	-0.107	(0.19)	-0.719 ***	(0.15)	-0.098	(0.19)
Performance orientation	-0.141	(0.25)	-0.050	(0.31)	-0.115	(0.25)	-0.080	(0.32)
Future orientation	0.745 ***	(0.24)	0.025	(0.30)	0.743 ***	(0.24)	0.032	(0.30)
Gender egalitarianism	-0.453 **	(0.20)	0.002	(0.25)	-0.453 **	(0.2)	-0.011	(0.25)
H2a: Institutional collectiv.	-0.433 **	(0.16)	-0.101	(0.20)	-0.421 **	(0.16)	-0.097	(0.20)
H3a: In-group collectivism	-0.055	(0.21)	-0.213	(0.26)	-0.079	(0.21)	-0.205	(0.26)
Interaction terms								
H2b: Institutional collectivism × Education	-0.066 ***	(0.02)	-0.003	(0.02)	-0.060 ***	(0.02)	-0.011	(0.02)
H3b: In-group collectivism × Education	-0.010	(0.01)	-0.030 **	(0.01)	-0.007	(0.01)	-0.020 *	(0.01)
H2c and *H3c*: Differences	*H2c*: $p < 0.05$, *H3c*: $p > 0.1$				*H2c*: $p < 0.1$, *H3c*: $p > 0.1$			
Observations	28,157				28,157			
Groups (countries)	27				27			

Notes: own calculations; standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, two-tailed

[a] Log transformation to improve the readability of results

The Model 'Education without lower bound' in Table 5-5 is based on a modified education variable which covers years of full-time education ranging from 0 to 19 years. The results do not change considerably through the relaxed operationalization, *Hypothesis 1*, *2a*, *2b*, *2c*, *3a*, and *3b* continue to be confirmed by the data.

Second, the upper bound of *education* of 19 years might be too restrictive by not capturing the education acquired by individuals who have spent more time in full-time education by obtaining several degrees, or engaging in a PhD. Table 5-6 thus contrasts results based on the initial operationalization of education with the results obtained when using the raw data regarding the age at the end of full-time education.

Table 5-6: Results of model with raw educational data

	Education restricted to 9-19 years Model 4 in Table 5-4				**Age at the end of full-time education**			
	Full-time entrepreneur		Part-time entrepreneur		Full-time entrepreneur		Part-time entrepreneur	
Individual-level (level 1)								
H1: Education (9-19)	0.039 ***	(0.01)	0.063 ***	(0.01)				
H1: Age at end of edu.					0.009 ***	(0.00)	0.009 ***	(0.00)
Female	-0.918 ***	(0.07)	-0.668 ***	(0.06)	-0.932 ***	(0.07)	-0.678 ***	(0.06)
Household income	0.151 ***	(0.05)	0.107 **	(0.04)	0.178 ***	(0.05)	0.143 ***	(0.04)
Household members	0.077 ***	(0.03)	0.066 **	(0.03)	0.074 ***	(0.03)	0.059 **	(0.03)
Age/10	2.531 ***	(0.18)	0.451 ***	(0.13)	2.491 ***	(0.17)	0.452 ***	(0.13)
Age/10 squared	-0.271 ***	(0.02)	-0.063 ***	(0.01)	-0.269 ***	(0.02)	-0.065 ***	(0.01)
Parental self-employment	0.660 ***	(0.06)	0.427 ***	(0.06)	0.671 ***	(0.06)	0.434 ***	(0.06)
Country-level (level 2)								
Population Log[a]	-0.009	(0.04)	-0.062	(0.05)	-0.040	(0.04)	-0.070	(0.05)
GDP per capita (PPP)	-0.031 ***	(0.01)	-0.013	(0.01)	-0.043 ***	(0.01)	-0.018	(0.01)
Power distance	-0.343	(0.25)	0.174	(0.30)	-0.272	(0.26)	0.149	(0.30)
Humane orientation	0.282	(0.22)	0.682 **	(0.27)	0.305	(0.23)	0.692 **	(0.27)
Assertiveness	0.014	(0.28)	0.342	(0.34)	0.267	(0.29)	0.444	(0.33)
Uncertainty avoidance	-0.691 ***	(0.14)	-0.107	(0.19)	-0.519 ***	(0.15)	-0.034	(0.18)
Performance orientation	-0.141	(0.25)	-0.050	(0.31)	-0.121	(0.27)	-0.031	(0.31)
Future orientation	0.745 ***	(0.24)	0.025	(0.30)	0.660 **	(0.25)	-0.014	(0.29)
Gender egalitarianism	-0.453 **	(0.20)	0.002	(0.25)	-0.425 *	(0.21)	0.022	(0.24)
H2a: Institutional collectiv.	-0.433 **	(0.16)	-0.101	(0.20)	-0.424 **	(0.16)	-0.091	(0.19)
H3a: In-group collectivism	-0.055	(0.21)	-0.213	(0.26)	-0.130	(0.22)	-0.225	(0.25)
Interaction terms								
H2b: Institutional collectivism × Education	-0.066 ***	(0.02)	-0.003	(0.02)	-0.008 *	(0.00)	-0.003	(0.01)
H3b: In-group collectivism × Education	-0.010	(0.01)	-0.030 **	(0.01)	0.001	(0.00)	-0.001	(0.00)
H2c and *H3c*: Differences	*H2c*: $p < 0.05$, *H3c*: $p > 0.1$				*H2c*: $p > 0.1$, *H3c*: $p > 0.1$			
Observations	28,157				28,157			
Groups (countries)	27				27			

Notes: own calculations; standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, two-tailed

[a] Log transformation to improve the readability of results

The modified variable for education continues to have a significant direct impact on part-time and full-time entrepreneurship, confirming *Hypothesis 1*. Furthermore, *Hypothesis 2a* and *2b* can be confirmed with this operationalization (direct negative effect of institutional collectivism and negative moderating effect of institutional collectivism on the relationship between education and full-time entrepreneurship). The range of the variable measuring the age at the end of full-time education might be too large to confirm *Hypothesis 3b*. An additional problem of using the raw data is that education is prone to decreasing marginal returns which are particularly high for individuals engaging in full-time education for a very long time (Link, 1973; Wößmann, 2003). Based on the relaxed operationalization of education in Table 5-5 which yielded very similar results and based on using raw data in Table 5-6 which still confirmed *Hypotheses 2a* and *2b*, the robustness of the results regarding the operationalization of education is high.

5.5 Discussion of findings

The aim of this chapter was to examine the moderating effect of institutional collectivism and in-group collectivism on the relationship between education and full-time vs. part-time entrepreneurship. This chapter employed multi-level analysis to test hypotheses how the societal cultural practices of institutional collectivism and in-group collectivism moderate the effect of education on part-time and full-time entrepreneurship. The analyses largely support the hypotheses.

First the different entrepreneurial behavior typical for individuals with high level of education engaging in part-time or full-time entrepreneurship aligns more with some societal cultures than others. Thus, the association between education and part-time and full-time entrepreneurship is contingent on societal cultural practices which underscores the importance of a moderator perspective when conducting entrepreneurial research (Unger et al., 2011) by clearly showing that the highly researched link between education and entrepreneurship (e.g., Cooper et al., 1994; Davidsson and Honig, 2003; Unger et al., 2011) is moderated by the cultural context of the individual and entrepreneurial behavior should not be viewed in isolation (Laspita et al., 2012; Stephan and Uhlaner, 2010).

Second, the results underscore the idea that education is positively associated with part-time and full-time entrepreneurship for different reasons. While high levels of education relates to full-time entrepreneurship because of ambition, entrepreneurial self-efficacy, and a desire for autonomy, high educational endowment relates to part-time entrepreneurship because of

nonmonetary life-longings and a desire for variety. Furthermore, the results reveal that part-time and full-time entrepreneurship are conceptually different forms of entrepreneurial activity (Burke et al., 2008; Folta et al., 2010; Raffiee and Feng, 2014). Part-time entrepreneurship not only displays distinct direct determinants but cultural moderation effects for part-time entrepreneurship operate through different theoretical reasoning compared to full-time entrepreneurship.

The findings of this chapter might thus help to explain why prior research on the relationship between education and entrepreneurship yielded inconclusive and contradicting results (Autio et al., 2013; Bullough et al., in press; Moriano et al., 2012; Pinillos and Reyes, 2011). The vast majority of prior research did not differentiate between part-time and full-time entrepreneurship and, moreover, did not account for the cultural moderating effects of institutional and in-group collectivism. This chapter provided a more fine-grained view of the relationship between education and entrepreneurship which might help to resolve some prior contradicting findings.

The findings also have implications for policy-makers. Part-time and full-time entrepreneurship differ significantly regarding employment effects and economic impact (Bosma et al., 2008; Piorkowsky et al., 2013). The findings established that in societies characterized by high institutional collectivism, individuals with high levels of education are deterred from choosing full-time entrepreneurship. If individuals with high levels of education are less likely to enter full-time entrepreneurship due to high institutional collectivism, this may have a detrimental effect on the quantity and quality of businesses in a society. This is even more reason for concern, since institutional collectivism was found to have a direct negative association with full-time entrepreneurship in general. The combined direct and indirect negative effects of institutional collectivism on full-time entrepreneurship might significantly slow a society's economic development and innovativeness. In such contexts, it might be fruitful to promote part-time entrepreneurship for individuals with high levels of education and in particular, provide policies to foster the transition from part-time to full-time entrepreneurship (see chapter 6 for analyses on the determinants of transition).

The finding regarding the detrimental effect of in-group collectivism on the positive association between education and part-time entrepreneurship can also affect a country's economy and well-being. Individuals with high levels of education are particularly prone to suffer from dissatisfaction and frustration in wage-work (Kimmel and Smith Conway, 2001; Renna, 2006), and part-time entrepreneurship can be a means to overcome those negative feelings. The discovered negative, moderating effect of in-group collectivism regarding

education and part-time entrepreneurship might thus deteriorate a society's overall satisfaction and well-being. In such cases, policies might be considered which provide individuals with high levels of education with options to achieve autonomy and variety, such as engaging in sporting clubs.

5.6 Conclusion and limitations

The analyses in this chapter are the first to highlight how an interplay of individual and societal-level variables affect individuals' decisions to become entrepreneurs on a full-time or a part-time basis. Specifically, it was shown how the societal cultural practices of institutional collectivism and in-group collectivism moderate the effects of education on full-time and part-time entrepreneurship. The findings thus contribute to the emerging field of part-time entrepreneurship research (Folta et al., 2010; Petrova, 2012; Raffiee and Feng, 2014) by highlighting that the impact of education on the propensity to engage in part-time vs. full-time entrepreneurship depends on societal culture. Furthermore, the findings contribute to the debate on how collectivism is related to entrepreneurial activity (Oyserman and Lee, 2008; Pinillos and Reyes, 2011; Steensma et al., 2000; Tiessen, 1997; Wennberg et al., 2013), by showing that institutional and in-group collectivism, in different ways, affect how education is related to entrepreneurial activity (Burmeister-Lamp et al., 2012). Additionally, the results support literature advocating a contextual view of entrepreneurship (Jack and Anderson, 2002; Oyserman and Lee, 2008; Peterson et al., 2012; Tiessen, 1997; Welter, 2011; Wennberg et al., 2013).

Further research is needed to ascertain the impact of institutional collectivism and in-group collectivism on business and economic performance. One limitation of the analyses in this chapter which future research might be able to address is the measurement of education. The analyses relied on the rather crude proxy of years of formal education and does not account for the quality of education (Link, 1973). Future research might want to consider the effect of human capital such as work or industry experience or educational attainment (Wößmann, 2003). Furthermore, endogeneity might particularly pose a problem when dealing with education (Block et al., 2012, 2013a). The link between education and entrepreneurship might be biased by omitted variables. Omitted variables may impact education as well as entrepreneurship as an occupational choice. For instance ambition drives both, education and entrepreneurship (Kim et al., 2006; Lévesque et al., 2002). In this example if ambition is omitted then the positive effect of education is overstated. Additionally, according to the

signaling theory of education, entrepreneurs should not aim to achieve particularly high formal education (Lazear, 2004; Riley, 1979). The positive association between education and entrepreneurship found in this chapter is in line with prior findings (Folta et al., 2010; Raffiee and Feng, 2014) but might indicate an omitted variable bias. Moreover, endogeneity might result from measurement errors of education which is particularly prone to measurement errors (Angrist and Krueger, 1991; Griliches and Mason, 1972; Link, 1973). Finally, endogeneity in the analyses might result from auto-correlated errors or reverse causality (Kennedy, 2003). A more comprehensive data set may help to investigate and resolve potential issues of endogeneity and omitted variable bias in the analyses presented in this chapter.

6. The transition from part-time to full-time entrepreneurship

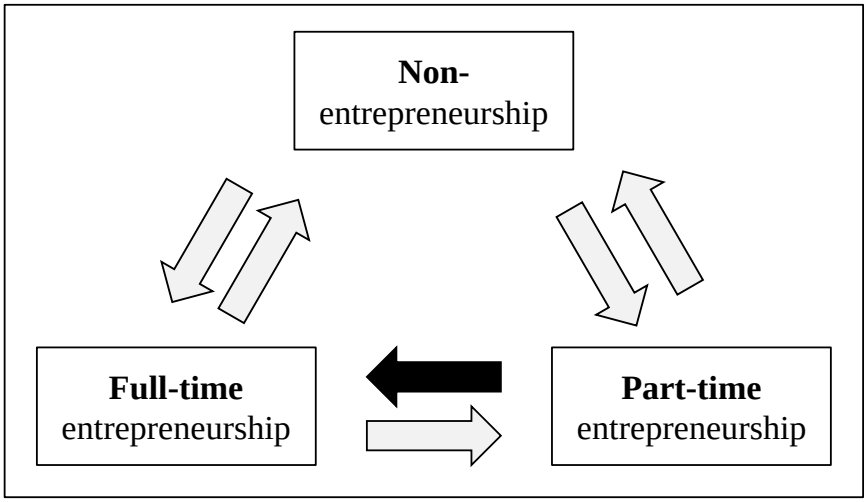
This chapter addresses the transition from part-time to full-time entrepreneurship (compare chapter 3.1).[2] Part-time entrepreneurship is often a first step towards full-time entrepreneurship and this transition is of academic and practical relevance (compare chapter 2.2.1 and 3.1). Thus this chapter addresses the research questions of research topic II: What is the role of financial motives? And what is the role of non-financial motives? Based on a German part-time entrepreneurship specific data set (see chapter 6.3.1. for the data collection process), this chapter highlights the significant impact of entrepreneurial motivation on the transition. Entrepreneurial transitions will be described in detail in chapter 6.1. Chapter 6.2 develops hypotheses on how different part-time entrepreneurship motives are expected to influence the transition behavior of part-time entrepreneurs. This is followed by chapter 6.3 which introduces the data set and the variables. The results of the logistic regression are presented in chapter 6.4. This is followed by chapter 6.5 which discusses the results and their implications for entrepreneurial research and practice. Finally, chapter 6.6 concludes this chapter and highlights avenues for further research.

6.1 Entrepreneurial transitions

Part-time entrepreneurship has grown tremendously in recent decades (compare chapter 2.2.1), simultaneously more flexible and fragmented working lives have become more common (Castells, 2000; Sullivan, 1999). As indicated in chapter 3.3, part-time entrepreneurship can be a first step towards full-time entrepreneurship (Folta et al., 2010; Raffiee and Feng, 2014; Wennberg et al., 2006). The transition between non-entrepreneurship, full-time entrepreneurship and part-time entrepreneurship has become more wide spread in society and there is sizable movement between those entrepreneurial states (Metzger, 2014; Raffiee and Feng, 2014; Wennberg et al., 2006). Full-time entrepreneurship can be entered either directly from non-entrepreneurship or it can be entered through the intermediate step of part-time entrepreneurship. Figure 6-1 illustrates possible transition routes between non-, full-time and part-time entrepreneurship.

[2] An abbreviated version of this chapter was published in the International Entrepreneurship and Management Journal, DOI 10.1007/s11365-014-0331-6; Block and Landgraf (in press)

Figure 6-1: Entrepreneurial transitions



The highlighted arrow from part-time to full-time entrepreneurship in Figure 6-1 emphasizes the focus of this chapter. The determinants of the transition from part-time to full-time entrepreneurship have not been explored to date. This transition is of particular interest in order to gain a better understanding of part-time entrepreneurship, as well as full-time entrepreneurship. Moreover, this transition is of great relevance for policy makers since full-time entrepreneurs exhibit larger investment and employment effects compared to part-time entrepreneurs (Piorkowsky et al., 2013). Furthermore, businesses which complete the transition exhibit significantly higher full-time survival rates compared to businesses which were started full-time (Raffiee and Feng, 2014). An additional advantage of part-time entrepreneurship is that income from wage work can reduce the pressure on the part-time venture to become profitable immediately (Lévesque and MacCrimmon, 1997). Entering full-time entrepreneurship by starting as a part-time entrepreneur reduces entrepreneurial risk, since part-time ventures typically require less financial resources than full-time ventures. This makes part-time entrepreneurship a stepping stone into full-time entrepreneurship particularly interesting for individuals with high risk aversion and low core self-evaluation (Chang et al., 2011; Raffiee and Feng, 2014), who might otherwise not enter entrepreneurship at all. Therefore, part-time entrepreneurship increases the number of nascent and active entrepreneurs in the economy. Through part-time entrepreneurship, entrepreneurs gain and develop knowledge about the market, the product, the customers and how to manage the business risks before making a large commitment to full-time entrepreneurship (Petrova, 2010; Wennberg et al., 2006).

This chapter investigates which factors promote or deter part-time entrepreneurs to become full-time entrepreneurs. Specifically, the influence of part-time entrepreneurs' motives on the transition behavior will be examined. To answer this research question, German part-time entrepreneurs were surveyed about their characteristics and transition behavior. This chapter shows that the motives to supplement wage income or to gain social recognition are negatively associated with transition behavior, whereas the motives to achieve independence or self-realization are positively associated with transition behavior. The motivation of following a role model, striving for financial success or innovation is not associated with transition behavior. These results deepen the understanding of part-time entrepreneurship and contribute to part-time entrepreneurship research (Folta et al., 2010; Petrova, 2010; Raffiee and Feng, 2014; Wennberg et al., 2006). The chapter shows that part-time entrepreneurs are a heterogeneous group with regards to transition behavior.

6.2 Theory and hypotheses

The transition from part-time to full-time entrepreneurship is a difficult decision. Compared to part-time entrepreneurs, full-time entrepreneurs, particularly in Germany, face higher reporting and tax obligations as well as higher costs related to health insurance and social security (Leppin and Mutafoglu, 2009; Lutz and Luck, 2011). Full-time entrepreneurs are also exposed to higher income uncertainty than part-time entrepreneurs. Similarly to portfolio entrepreneurs (Westhead and Wright, 1998), part-time entrepreneurs who have a wage-earning main occupation are more diversified with regard to their income sources. Finally, full-time ventures require on average more start-up capital than part-time ventures (Metzger, 2014) and consequently a transition can require significant additional financial resources which need to be obtained and put at risk. To summarize, moving from part-time to full-time entrepreneurship is a risky step which most part-time entrepreneurs are likely to contemplate very well before making a commitment.

6.2.1 Financial entrepreneurship motivations and transition behavior

Prior research shows that financial motives are an important driver of entrepreneurship in general (Birley and Westhead, 1994; Cassar, 2007). This chapter distinguishes between two types of financial motives for part-time entrepreneurs. First, part-time entrepreneurs may start their venture to supplement their income from a wage job. The earnings from their part-time venture are regarded only as a supplement, and are not meant to replace their regular wage income. Such an individual uses the earnings from the part-time venture as a way to diversify the sources of income. Second, part-time entrepreneurs may be driven by a strong desire for financial success. The part-time entrepreneur regards the venture as a possible means to exploit an attractive business opportunity. The part-time venture is regarded not as a way to diversify the sources of income, but as a means to become wealthy. The transition behavior of part-time entrepreneurs is expected to differ, depending on the two types of financial motivations.

Part-time entrepreneurs motivated to start their venture to supplement wage income resemble so-called ‘moonlighters’ (Folta et al., 2010). Moonlighters take on a second wage job because of economic hardship or higher hourly earnings (Kimmel and Smith Conway, 2001). A part-time venture has some advantages over a second wage job. It may offer greater flexibility (Renna, 2006) and is not restrained by the availability of wage work. Moonlighting periods are often temporary and last for a few months or a few years (Kimmel and Smith Conway, 2001). Part-time entrepreneurs who regard their part-time venture primarily as an opportunity to gain some extra money and smooth periods of economic hardship are unlikely to give up their wage job. The following hypothesis should apply:

Hypothesis 1: The importance of supplementing wage income as a startup motive is negatively associated with the transition behavior from part-time to full-time entrepreneurship.

Entrepreneurship is risky, and in many cases, the financial returns from entrepreneurship do not compensate for the risk (Carter, 2011; Moskowitz and Vissing-Jørgensen, 2002). Nonetheless, financial motives are a major driver of entrepreneurship. Entrepreneurship offers the possibility of becoming very rich. This endeavor is characterized by a skewed income distribution with a small minority of entrepreneurs earning far more than wage earners and the majority of entrepreneurs earning less than comparable wage earners (Hamilton, 2000; Rosen,

1981). Part-time entrepreneurs who start their venture to achieve financial success must grow their venture to benefit from economies of scale (Cassar, 2006; Gundry and Welsch, 2001). Large ventures require more attention and time from the entrepreneur than small ventures. Part-time entrepreneurs motivated by achieving large financial success are thus likely to become full-time entrepreneurs. This leads to the following hypothesis:

Hypothesis 2: The importance of achieving financial success as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

6.2.2 Non-financial entrepreneurship motivations and transition behavior

Non-financial benefits are an important determinant of entrepreneurship (Cooper and Artz, 1995; Croson and Minniti, 2012; Lazear, 2005; Thorgren et al., 2014). Autonomy, independence and psychological rewards of entrepreneurship may compensate for low incomes (Croson and Minniti, 2012; Hamilton, 2000). This chapter develops five hypotheses how non-financial entrepreneurship motivations influence the transition behavior of part-time entrepreneurs to become full-time entrepreneurs.

The desire to innovate is a strong pull factor into entrepreneurship (Collins et al., 2004). Entrepreneurs motivated by innovation show high levels of self-efficacy (Markman et al., 2002) which is closely linked to self-confidence (Chang et al., 2011). They wish to demonstrate that their innovative idea can be realized; financial and career objectives are of lower importance (Giuri et al., 2007). Part-time entrepreneurs, motivated by innovation gain, non-financial benefits when working on their innovative idea. These entrepreneurs aim to spend as much time as possible to realize their innovative idea, which is why it is expected that part-time entrepreneurs who are motivated by innovation to display transition behavior. The following hypothesis should apply:

Hypothesis 3: The importance of innovation as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

Gaining independence and autonomy is an important driver of entrepreneurship (Hisrich, 1990; Shane et al., 2003; Vivarelli, 2004). Prior research shows that individuals with a high need for independence are more likely to become full-time entrepreneurs (van Gelderen and Jansen, 2006). It is argued that part-time entrepreneurs, motivated by independence, display transition behavior. The work situation as a part-time entrepreneur is a dependent one. By still

working in a wage job, part-time entrepreneurs are not independent in their work life. To achieve higher levels of independence, part-time entrepreneurs must become full-time entrepreneur. This leads to the hypothesis:

Hypothesis 4: The importance of independence as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

Social recognition and respect from others is a basic human need (Maslow et al., 1970). Successful entrepreneurship may lead to social recognition, with prior research showing that social recognition is a determinant of entrepreneurship (Fischer et al., 1993). Successful entrepreneurs have a high social status in many countries (Amorós and Bosma, 2014). Part-time entrepreneurs, however, are often not recognized as 'real' entrepreneurs, as they do not bear the full entrepreneurial risk. Moreover, through their limited amount of time, the venture's growth and success possibilities are limited as is the social visibility of part-time ventures. To achieve visible entrepreneurial success and to gain social recognition, a transition from part-time to full-time entrepreneurship is needed. Part-time entrepreneurs who strive for social recognition are expected to display transition behavior. This leads to the following hypothesis:

Hypothesis 5: The importance of social recognition as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

Continuing a family tradition or following role models may be an important entrepreneurial motivation (Shane et al., 1991). Except for a few recent cases (e.g., Ferriss, 2009), part-time entrepreneurship is not regarded as an aspired occupation. Compared to successful full-time entrepreneurs, successful part-time entrepreneurs receive little media attention. This chapter will argue that part-time entrepreneurs who follow a role model are inspired by full-time entrepreneurs in their social network, or are from business-owning families and wish to continue a successful family tradition. Family businesses are usually full-time ventures (Donckels and Fröhlich, 1991). The following hypothesis should apply:

Hypothesis 6: The importance of following a role model as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

Prior research shows that self-realization is one of the strongest drivers of entrepreneurship (Kolvereid, 1996; Korunka et al., 2003). This chapter shall argue that part-time entrepreneurship offers less potential to achieve self-realization than full-time entrepreneurship. Accordingly, it is expected that individuals entering part-time entrepreneurship for reasons of self-realization to display transition behavior. This leads to the following hypothesis:

Hypothesis 7: The importance of self-realization as a startup motive is positively associated with the transition behavior from part-time to full-time entrepreneurship.

6.3 Sample and method

This section describes the data collection and the characteristics of the sample used in this chapter which was specifically collected to study part-time entrepreneurship.

6.3.1 Data collection process

To answer the research question a new data set was constructed in collaboration with the Inmit (Institut für Mittelstandsökonomie an der Universität Trier), commissioned by the German Federal Ministry of Economic Affairs and Energy (BMWi). As a starting point, several qualitative interviews with part-time entrepreneurs and experts were conducted. The interviews facilitated a better understanding of the particular context of part-time entrepreneurship and its determinants. Based on this information, and an extensive literature review, an online survey was developed. Wherever possible, established questions and scales from the entrepreneurship literature were used. To capture all facets of part-time entrepreneurship five slightly different surveys were created for different categories of entrepreneurs: (1) nascent part-time entrepreneurs who had not yet started their venture, (2) active part-time entrepreneurs who ran their business, (3) ex-part-time entrepreneurs who were part-time entrepreneurs in the past but abandoned entrepreneurial activity, (4) transitioned full-time entrepreneurs who had been part-time entrepreneurs but completed the transition, and (5) full-time entrepreneurs without part-time experience to capture differences between part-time and full-time entrepreneurs.

In the next step, the survey was pretested with several part-time entrepreneurs and minor changes were made to resolve ambiguities. The data collection occurred between September 26, 2012 and January 30, 2013. The online survey was accessible through the specifically

created domain www.studie-nebenerwerb.de. The original survey questions can be found in Appendix B. To recruit part-time entrepreneurs as participants of the survey, a multi-channel approach was used. Personalized emails were sent to over 37,000 individuals in the gruendungszuschuss.de data base which mainly consists of small business owners. Furthermore, direct emails were sent to the mailing list of the bundesgruenderinnenagentur (bga) which is a network of female entrepreneurs, additionally, direct emails were sent to the members of the EXIST-network which focuses on student and academic founders. Moreover, direct emails were sent to roughly 650 founders with a technology focus through the Centrum für Angewandte Technologien GmbH. Additionally, the survey was mentioned in newsletters and posts on entrepreneurship focused web portals (e.g., gruendungszuschuss.de, akademie.de, foerderland.de, gruenderszene.de, fuer-gruender.de, deutsche-startups.de) and some of the connected social media with a total reach of roughly 30,000 fans on facebook.com and roughly 12,000 followers on twitter.com. Additionally, survey participation was promoted in several entrepreneurship and start-up focused discussion groups, with a total group membership of over 100,000 on the German-centered business network xing.de. Furthermore, paid banner advertising was purchased on foerderland.de. Finally, participation in the survey was promoted by several Chambers of Commerce and Industry (IHK) and organizations (e.g., Federal Association of Interpreters and Translators). Participation in the survey was anonymous, and participants could choose to enter a raffle of 25 shopping vouchers for amazon.de with a value of 25 Euro each. To ensure anonymity of participants, the contact details required for the raffle were stored in a separate database which could not be linked to survey responses. The survey also stated that it formed part of a larger research project on part-time entrepreneurship commissioned by the German Federal Ministry of Economic Affairs and Energy and may have policy implications that improve the situation of part-time entrepreneurs in Germany.

The median time required to answer the questionnaire was 25 minutes. To reduce channel and self-selection bias and to increase the representativeness of the data, targeted computer-assisted telephone interviews were conducted to address those part-time entrepreneurs who could not be reached through the online channels. The targeted telephone interviews were conducted in October and November 2012. Suitable interview partners were selected from Creditreform, a commercial German business information service from which the contact details of 1,100 potential part-time businesses were extracted, based on several criteria, such as annual revenue below 50,000 Euro and business addresses matching the private address of

the entrepreneur. A total of 105 complete observations were obtained through telephone interviews.

In total, 1,199 individuals participated in the survey. 81% of the participants completed the survey. Given the scope of this chapter, answers from individuals who had not yet started their part-time venture were not used (116 observations). Of the 563 full-time entrepreneurs who participated, 113 had started as part-time entrepreneurs and eventually transitioned to full-time entrepreneurship. The 113 full-time entrepreneurs with part-time experience were included in the sample, whereas, the 450 remaining full-time entrepreneurs without part-time experience were omitted. After the listwise deletion of observations with incomplete data, a sample of 481 observations was obtained (379 current part-time entrepreneurs, 82 former part-time entrepreneurs who transitioned into full-time entrepreneurship and 20 former part-time entrepreneurs who abandoned entrepreneurial activity).

To reduce common method bias, problems of item ambiguity and scale desirability were avoided. In addition, it was highlighted that the responses were anonymous (Podsakoff et al., 2003; Podsakoff et al., 2012). The level of common method variance in the data set was assessed by the Harman's single-factor test. From the 44 variables used in the analysis, 17 factors were extracted which account for 63% of the variance in the data set. The first extracted factor had an eigenvalue of 2.78 and accounted for 6.3% of the variance in the data set. Consequently, the extent of common method variance in the data set is low.

6.3.2 Sample representativeness

To determine the representativeness of the sample, a comparison of the descriptive statistics from the sample and the annual Micro-Census (Fritsch et al., 2012) as well as the KfW Gründungsmonitor 2013 (Metzger and Ullrich, 2013) was compiled. The Micro-Census gathers information on 830,000 people (1% of the German population), and data from the Micro-Census may be used to extract information on the demographic characteristics of part-time entrepreneurship (Piorkowsky et al., 2013). The sample is also compared to the KfW Gründungsmonitor 2013 (Metzger and Ullrich, 2013), which is somewhat different since it only includes data for recent business start-ups in Germany which is obtained through 50,000 random telephone interviews. Table 6-1 presents characteristics of the sample compared to the Micro-Census 2011 and the KfW Gründungsmonitor 2013. The newly collected sample of part-time entrepreneurs exhibits very similar characteristics compared to Micro-Census in terms of age, gender, industry, and marital status. Noticeable differences exist regarding the share of solo-entrepreneurs (75.2% in the sample and 88.6% in the Micro-Census). The

sample characteristics are also very similar to the KfW Gründungsmonitor, notable differences only arise within the age brackets. These differences can be explained by the focus of the KfW Gründungsmonitor on newly established businesses whereas the data set of this chapter captures the whole stock of part-time entrepreneurs regardless how long ago a venture was founded. Consequently, the KfW Gründungsmonitor is expected to display a lower average age of entrepreneurs.

Table 6-1: Sample characteristics vs. other data sets

	Micro-Census 2011 (current part-time entrepreneurs)	**KfW 2013** (recent part-time founders)	**Sample for analyses** (current part-time entrepreneurs)
Gender			
Male	50.3%	56.3%	49.6%
Female	49.7%	43.7%	50.4%
Age brackets			
15–25 years	3.0%	18.0%	5.0%
25–35 years	16.1%	27.0%	21.9%
35–45 years	25.8%	24.7%	22.9%
45–55 years	28.2%	17.6%	34.6%
55+ years	26.8%	12.7%	15.6%
Education			
University degree	n/a	17.5%	37.7%
Technical University degree	n/a	10.8%	25.1%
Master craftsman's diploma	n/a	4.6%	5.3%
Apprenticeship diploma	n/a	47.9%	23.2%
No formal diploma/degree	n/a	19.1%	8.7%
Marital status			
Single	27.9%	n/a	33.5%
Married	62.4%	n/a	54.6%
Divorced	9.6%	n/a	11.9%
Industries			
Agriculture	6.1%	n/a	3.4%
Manufacturing	8.5%	9.3%	5.1%
Trade, Hospitality, Transport	20.4%	22.8%	15.3%
Other Services	65.0%	59.2%	74.1%
Firm size			
Percentage solo-self-employed	88.6%	75.2%	75.1%
Number of part-time entrepreneurs in data set	**1544**	**459**	**379**

Notes: own calculations based on Piorkowsky et al. (2013), Metzger and Ullrich (2013), and own data.

6.3.3 Dependent and independent variables

The dependent variable in this analysis is *transition behavior*, which measures the transition behavior of part-time entrepreneurs. This dichotomous variable takes a value of 1 if the respondent has (1) a detailed timeline for the transition, or (2) has taken steps for the transition, or (3) has completed the transition. Current part-time entrepreneurs who do not match these criteria are coded 0. Former part-time entrepreneurs who abandoned their entrepreneurial activity are also assigned 0 to account for survivor bias. Table 6-2 highlights the coding of the dependent variable.

Table 6-2: Criterion for dependent variable

Criterion for *transition behavior*	**Observations coded 1**	**Observations coded 0**
Former part-time entrepreneur: *no longer entrepreneur*	-	20
Current part-time entrepreneur: *transition not viable*	-	89
Current part-time entrepreneur: *transition might be an option*	-	199
Current part-time entrepreneur: *decided to transition*	-	46
Current part-time entrepreneur: *detailed timeline for transition*	27	-
Current part-time entrepreneur: *taken steps towards transition*	18	-
Former part-time entrepreneur: *transition completed*	82	-
Total	**127**	**354**

Seven independent variables are constructed to test the hypotheses about the relationship between part-time entrepreneurial motivation and transition behavior. The motivation variables are based on the reasoning of Folta et al. (2010) and a questionnaire established by Carter et al. (2003). Carter et al. (2003) distinguish between six entrepreneurial motives, which are financial success, innovation, independence, recognition, following a role model, and self-realization. The variable *motive supplement wage* measures the degree to which the part-time entrepreneur started the venture to supplement wage income. This variable was motivated by the reasoning of Folta et al. (2010). The variable *motive financial success* comprises the three statements “to achieve financial security”, “to earn a larger personal income”, and “to build a business my children can inherit”. The variable describes the desire to earn money and to achieve financial security (Birley and Westhead, 1994; Shane et al., 2003). The variable *motive innovation* describes the desire to accomplish something new and is closely linked to achievement motivation (McClelland, 1961). It is calculated as the mean of the three statements “to develop an idea for a product”, “to be innovative”, and “to grow and learn as a person”. The variable also includes aspects of learning and personal

development. A meta-study of Collins et al. (2004) shows that innovation is an important pull factor into entrepreneurship. The variable *motive independence* is calculated as the mean of the two statements "to have greater flexibility for my personal life" and "to be my own boss". Motive independence refers to flexibility and freedom in the use of time. Being independent is an important motivating factor to become an entrepreneur (Benz and Frey, 2008b; Shane et al., 1991; Vivarelli, 2004). Table 6-3 shows the items that were used to construct the dependent and independent variables.

Table 6-3: Definition of dependent and independent variables

Variable	Definition
Dependent variable	
Transition behavior	Dummy = 1 if part-time entrepreneur has a detailed timeline for transition, has taken steps or completed the transition; statement: "how do you stand towards full-time entrepreneurship: I have a detailed timeline for my transition/I have started with the transition/I have completed the transition" (compare Table 6-2)
Independent variables	
Motive supplement wage	Part-time entrepreneur starts venture to supplement wage income; scale ranging from 1 (not important) to 5 (very important); statement: "to secure additional income besides wage-employment"
Motive financial success	Part-time entrepreneur starts venture to achieve financial success, scale ranging from 1 (not important) to 5 (very important); mean of statements: "to achieve financial security", "to earn a larger personal income", and "to build a business my children can inherit" (adapted from Carter et al., 2003)
Motive innovation	Part-time entrepreneur starts venture to achieve innovation; scale ranging from 1 (not important) to 5 (very important); mean of statements: "to develop an idea for a product, "to be innovative", and "to grow and learn as a person" (adapted from Carter et al., 2003)
Motive independence	Part-time entrepreneur starts venture to achieve independence, scale ranging from 1 (not important) to 5 (very important); mean of statements: "to have greater flexibility for my personal life" and "to be my own boss" (adapted from Carter et al., 2003)
Motive recognition	Part-time entrepreneur starts venture to achieve recognition, scale ranging from 1 (not important) to 5 (very important); mean of statements: "to achieve something and get recognition for it" and "to achieve a higher position for myself" (adapted from Carter et al., 2003)
Motive role models	Part-time entrepreneur starts venture to follow a role model, scale ranging from 1 (not important) to 5 (very important); mean of statements: "to continue a family tradition" and "to follow the example of a person I admire" (adapted from Carter et al., 2003)
Motive self-realization	Part-time entrepreneur starts venture to achieve self-realization; scale ranging from 1 (not important) to 5 (very important); mean of statements: "to challenge myself" and "fulfill a personal vision" (adapted from Carter et al., 2003)

Notes: statements translated from German; original German questionnaire can be found in Appendix B

The variable *motive recognition* refers to the mean of the two statements "to achieve something and get recognition for it" and "to achieve a higher position for myself". The

variable is linked to the social acceptance, status, and the need for approval of one's actions (Maslow et al., 1970; Vroom, 1982). Research by Fischer et al. (1993) shows that gaining recognition is an important driver of entrepreneurship. *Motive role model* is created as the mean of the two statements "to continue a family tradition" and "to follow the example of a person I admire". Following a role model is an important aspect of entrepreneurial motivation (Bosma et al., 2012; Shane et al., 1991). Finally, the variable *motive self-realization* refers to the self-realization of the entrepreneur. Hisrich (1984) and Fischer et al. (1993) show that self-realization is an important determinant of entrepreneurship. The variable motive self-realization is calculated as the mean of the two statements "to challenge myself" and "to fulfill a personal vision".

6.3.4 Control variables

This analysis uses two sets of control variables. The first set of controls relates to the characteristics of the part-time entrepreneur; the second set of control variables relates to the characteristics of the part-time venture. All control variables are dummy variables.

In capturing the characteristics of part-time entrepreneurs, the analyses include information about the respondents' *age*, *gender*, *mother tongue*, *and marital status*. Furthermore, different types of human capital such as *education*, *industry experience*, *management experience*, and *entrepreneurial experience* are controlled for. Other variables include the entrepreneur's *employment status*, as well as problems faced through part-time entrepreneurship (e.g., conflicts of the part-time venture with the wage job and family life). The analyses also include a control for *necessity entrepreneurship* (Block and Wagner, 2010) and whether the entrepreneur would start a part-time venture again in retrospect (*repeat as part-time entrepreneur*).

Regarding part-time venture characteristics, this analysis accounts for the *venture age*, financial characteristics of the venture (amount of *start-up capital*, *debt vs. equity*) and the *venture's location*. The analysis also controls for *team venture*, the perceived similarity between the venture and the entrepreneur´s wage job, and the importance of the Internet for the venture. Finally, eight *industry dummies* (business services, IT services, healthcare, education and culture, retail, gastronomy and tourism, manufacturing, and agriculture) and the source of the business idea are controlled for. All variables are based on the online survey described in chapter 6.3.1. Table 6-4 shows the wording of the items that were used to construct the variables. The original German questionnaire is shown in Appendix B.

Table 6-4: Definition of control variables

Variable	Definition
Characteristics of part-time entrepreneur	
Female	Dummy = 1 if entrepreneur is female; statement: "please state your gender"
Age < 25	Dummy = 1 if entrepreneur is under 25 years; statement: "please state your age"
Age 25–34	Dummy = 1 if entrepreneur is 25 to 34 years; statement: "please state your age"
Age 45–54	Dummy = 1 if entrepreneur is 45 to 54 years; statement: "please state your age"
Age 55+	Dummy = 1 if entrepreneur is 55 years and over; statement: "please state your age"
Abitur	Dummy = 1 if entrepreneur has obtained or obtains highest secondary school leaving certificate ("Abitur"); statement: "which is the highest secondary school leaving certificate you obtained or are obtaining: Fachhochschulreife/Abitur"
College degree	Dummy = 1 if entrepreneur completed tertiary education; statement: "which is the highest tertiary education you obtained or are obtaining: university of applied sciences degree/university degree"
Experience industry	Dummy = 1 if entrepreneur has industry experience; statement: "did you obtain experience in the industry you entered prior to starting your business: through wage work/through part-time work or hobby/through education"
Experience management	Dummy = 1 if entrepreneur has management experience; statement: "how many years of management experience did you gain prior to starting your venture?" if ≥ 1, variable = 1
Experience entrepreneurship	Dummy = 1 if entrepreneur has entrepreneurial experience; statement: "have you previously been self-employed?"
Employed	Dummy = 1 if entrepreneur has a job in paid employment; statement: "what occupation do you have besides part-time entrepreneurship: full-time employment/part-time employment/mini job/official/additional self-employment/scientific employee/trainee/ voluntary military or federal volunteer service"
Necessity entrepreneur	Dummy = 1 if entrepreneur starts venture out of necessity; statement: "did you enter self-employment because of lack of better employment options?"
German	Dummy = 1 if entrepreneur's mother tongue is German; statement: "is German your mother tongue?"
Married	Dummy = 1 if entrepreneur is married or cohabits; statement: "what is your marital status: married or cohabit"
Repeat as part-time entrepreneur	Dummy = 1 if entrepreneur would start part-time venture again; statement: "if you had to decide again, would you choose to become an entrepreneur again: Yes, definitely, I would start as part-time entrepreneur again"
Problem boss	Dummy = 1 if entrepreneur suffers from a boss who is not supportive of part-time venture; statement: "please indicate in which areas you personally perceived problems during your part-time start-up: my boss does not support my part-time start-up"
Problem double-burden	Dummy = 1 if entrepreneur suffers from double strain from venture and wage job; statement: "please indicate in which areas you personally perceived problems during your part-time start-up: double burden of first employment and part-time entrepreneurship"
Problem family	Dummy = 1 if entrepreneur faces challenges to align family and part-time venture; statement: "please indicate in which areas you personally perceived problems during your part-time start-up: compatibility of family, wage job and part-time entrepreneurship"
Problem market	Dummy = 1 if entrepreneur lacks knowledge about the market and customers; statement: "please indicate in which areas you personally perceived problems during your part-time start-up: too little knowledge of the market and customers"

Table 6-4: Definition of control variables–continued

Variable	Definition
Characteristics of part-time venture	
Start cap < 5,000	Dummy = 1 if part-time venture start-up capital is less than 5,000 Euros; statement: "how much start-up capital war required for your part-time venture: less than 5,000 Euro"
Start cap debt	Dummy = 1 if part-time venture used debt for start-up funding; statement: "how did you fund your start-up capital: through external and internal sources/fully through external sources"
Team venture	Dummy = 1 if part-time venture is founded by an entrepreneurial team; statement: "did you found your part-time venture as a solo entrepreneur or an entrepreneurial team?"
Urban location	Dummy = 1 if part-time venture is located in an urban location; statement: "please indicate the location characteristics of your part-time venture: 5 point scale from 1 (very rural) to 5 (metropolis)" if 4 or 5 then variable = 1
Idea invention	Dummy = 1 if part-time venture business idea results from own invention; statement: "how did you find your business idea: through own invention"
Venture age < 3	Dummy = 1 if part-time venture is less than 3 years old; statement: "in which year did you start your part-time venture?" (venture age calculated from this information)
Venture age 3–6	Dummy = 1 if part-time venture is 3 to 6 years old; statement: "in which year did you start your part-time venture?" (venture age calculated from this information)
Ind bus service	Dummy = 1 if industry of part-time venture is business services; statement: "in which industry did you start your part-time venture: business services"
Ind IT	Dummy = 1 if industry of part-time venture is IT services; statement: "in which industry did you start your part-time venture: IT services"
Ind health	Dummy = 1 if industry of part-time venture is healthcare; statement: "in which industry did you start your part-time venture: healthcare"
Ind education	Dummy = 1 if industry of part-time venture is education, culture or media; statement: "in which industry did you start your part-time venture: education, culture or media"
Ind retail	Dummy = 1 if industry of part-time venture is retail; statement: "in which industry did you start your part-time venture: business services"
Ind gastronomy tourism	Dummy = 1 if industry of part-time venture is gastronomy or tourism; statement: "in which industry did you start your part-time venture: gastronomy or tourism"
Ind manufacturing	Dummy = 1 if industry of part-time venture is manufacturing; statement: "in which industry did you start your part-time venture: manufacturing"
Ind agriculture	Dummy = 1 if industry of part-time venture is agriculture; statement: "in which industry did you start your part-time venture: agriculture"
Liberal profession	Dummy = 1 if part-time venture is operating in a liberal profession ("Freiberuf"). Liberal professions hold a special legal status in Germany. Select professions including lawyers, doctors, artists, translators, and engineers are entitled to favorable tax and reporting standards. Statement: "are you a liberal professional (i.e., business tax exempt)?"
High similarity	Dummy = 1 if part-time venture and wage job are similar; statement: "please indicate the relationship between your part-time venture and your other occupation in respect to industry, contacts, network, technology, skills: 5 point scale from 1 (totally independent) to 5 (congruent)" if 3, 4, or 5 then variable = 1
Internet important	Dummy = 1 if part-time venture relies on internet; statement: "does the internet take center stage in your part-time venture?"

Notes: statements translated from German; original German questionnaire can be found in Appendix B

6.3.5 Descriptive statistics and regression model

Table 6-5 displays the means, correlation and variance inflation factors (VIFs) of the main variables. More than a quarter (26%) of part-time entrepreneurs exhibits transition behavior at the time of the survey, underlining the importance of the research question for this chapter. A total of 49% of part-time entrepreneurs in the sample are female which stands in stark contrast to full-time entrepreneurship which is heavily male dominated (Metzger and Ullrich, 2013; Piorkowsky and Petermann, 2013). 69% of part-time entrepreneurs in the sample have a wage-earning job which is similar to the 63% reported in another data source for Germany (compare Table 2-3). The majority of part-time entrepreneurs (77%) required less than 5,000 Euros of start-up capital and only 20% used debt financing which highlights the ease of entering part-time entrepreneurship from a financial perspective. A total of 79% of part-time entrepreneurs gained industry experience before starting their venture, but only 27% had entrepreneurial experience. This might indicate that many part-time entrepreneurs don't feel confident about their entrepreneurial skills and enter part-time entrepreneurship to test and develop those skills (Petrova, 2010; Wennberg et al., 2006). The part-time entrepreneurs in the sample are highly educated, 80% have Abitur (highest secondary education leaving certificate) and 65% hold a university degree. Necessity part-time entrepreneurs represent 19% of the sample, which is slightly lower than in Germany overall (Block and Sandner, 2009; Block and Wagner, 2010); however, part-time entrepreneurs were found to be less necessity driven than full-time entrepreneurs (Metzger, 2014). Interestingly, only 35% of part-time entrepreneurs founded their business in an urban location, indicating that part-time entrepreneurship might be an attractive employment option in more rural areas (Markantoni et al., 2013). In the sample independence and self-realization seem to be the most important motives to enter part-time entrepreneurship with a mean of 3.76 and 3.44 respectively on a five point scale. Interestingly, to supplement wage income as a motive to enter part-time entrepreneurship has a high mean value but also exhibits the highest standard deviation of all motive variables by far. This could indicate that for some part-time entrepreneurs (e.g., necessity entrepreneurs), gaining additional income is very important, but for many others, gaining income through part-time entrepreneurship is of minor importance.

Table 6-5: Descriptive statistics and correlation matrix of main variables

Variable	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	VIF
(1) Transition behavior	0.26		0	1																											
(2) Female	0.49		0	1	0.00																										1.53
(3) Age < 25	0.06		0	1	0.03	-0.14																									1.50
(4) Age 25–34	0.22		0	1	0.10	-0.17	-0.13																								1.84
(5) Age 45–54	0.33		0	1	-0.07	0.20	-0.17	-0.37																							1.79
(6) Age 55+	0.14		0	1	-0.10	-0.06	-0.10	-0.21	-0.28																						1.66
(7) Abitur	0.80		0	1	0.01	-0.07	0.04	0.12	-0.14	-0.09																					1.74
(8) College degree	0.65		0	1	0.06	-0.10	0.03	0.13	-0.13	-0.07	0.58																				1.87
(9) Experience industry	0.79		0	1	0.06	0.07	-0.09	-0.00	0.08	0.01	0.06	0.02																			1.31
(10) Experience management	0.46		0	1	0.05	-0.06	-0.16	-0.22	0.08	0.16	0.03	-0.01	0.10																		1.28
(11) Experience entrepreneur	0.27		0	1	0.01	0.04	-0.07	-0.12	0.09	0.12	-0.10	-0.07	0.04	0.18																	1.27
(12) Employed	0.69		0	1	0.03	-0.00	-0.22	-0.06	0.07	-0.06	-0.02	-0.06	0.07	0.08	0.08																1.33
(13) Necessity entrepreneur	0.19		0	1	0.08	0.03	0.04	-0.02	-0.03	0.02	0.05	-0.04	0.05	-0.02	-0.02	-0.11															1.23
(14) Start cap < 5,000	0.77		0	1	-0.05	0.04	0.05	0.08	-0.06	-0.14	0.05	0.03	0.12	-0.07	-0.02	-0.07	0.07														1.36
(15) Start cap debt	0.20		0	1	0.10	0.00	-0.01	-0.07	0.04	0.06	-0.04	-0.07	0.05	0.05	0.14	0.06	-0.02	-0.30													1.23
(16) Team venture	0.10		0	1	0.04	-0.15	0.18	0.09	-0.11	-0.05	0.05	0.11	-0.15	-0.07	0.08	-0.09	-0.04	-0.11	0.02												1.25
(17) Urban location	0.35		0	1	0.12	0.01	0.01	0.07	-0.08	-0.08	0.13	0.09	-0.02	-0.01	0.13	0.06	0.06	-0.03	0.07	0.08											1.21
(18) Idea invention	0.03		0	1	0.06	-0.10	-0.04	0.12	-0.04	0.00	-0.01	0.05	-0.00	-0.03	0.06	0.01	-0.08	-0.02	0.04	0.15	0.00										1.22
(19) Venture age < 3	0.52		0	1	-0.02	0.02	0.12	0.12	-0.03	-0.04	-0.08	-0.05	-0.00	0.07	0.18	-0.08	-0.06	0.04	-0.00	0.09	-0.07	0.02									2.34
(20) Venture age 3–6	0.29		0	1	0.02	-0.00	-0.06	0.01	0.02	-0.08	0.11	0.05	-0.02	-0.03	-0.09	-0.02	0.04	0.04	0.02	-0.04	0.11	-0.06	-0.66								2.12
(21) Motive supplement wage	3.01	1.58	1	5	-0.13	-0.11	0.07	-0.01	-0.03	-0.02	-0.07	-0.07	0.01	-0.08	-0.05	0.19	-0.03	0.07	-0.09	-0.02	-0.10	0.08	-0.05	-0.02							1.36
(22) Motive financial succ.	2.64	0.88	1	5	0.02	-0.06	0.01	0.03	-0.04	-0.02	-0.18	-0.21	-0.00	-0.03	0.10	0.02	0.06	0.04	0.06	-0.01	-0.07	0.07	0.01	-0.00	0.37						1.44
(23) Motive innovation	3.37	1.02	1	5	0.12	-0.04	0.05	0.04	-0.07	-0.02	0.02	0.04	0.02	0.09	0.06	-0.03	-0.28	-0.12	0.13	0.18	-0.02	0.16	0.09	-0.06	-0.01	0.09					1.86
(24) Motive independence	3.76	1.17	1	5	0.22	0.23	-0.04	0.11	-0.04	-0.16	0.07	0.02	0.09	-0.01	-0.01	-0.08	-0.02	0.06	0.09	-0.04	0.02	0.07	0.04	-0.02	0.01	0.12	0.31				1.49
(25) Motive recognition	2.78	1.07	1	5	0.03	0.09	0.01	0.12	-0.04	-0.12	-0.04	-0.02	0.03	-0.03	0.05	0.00	-0.10	0.03	0.07	0.11	0.03	0.02	-0.02	0.06	0.06	0.24	0.43	0.35			1.57
(26) Motive role models	1.38	0.76	1	5	-0.05	-0.08	-0.00	-0.05	-0.06	0.03	-0.10	-0.04	0.01	0.05	-0.01	-0.01	-0.05	-0.15	0.13	0.07	-0.11	0.08	-0.03	-0.08	0.02	0.18	0.17	-0.04	0.13		1.44
(27) Motive self-realization	3.44	1.22	1	5	0.13	0.05	0.03	0.09	-0.08	-0.12	0.02	0.04	-0.03	0.00	0.03	-0.01	-0.22	-0.10	0.07	0.10	-0.03	0.05	0.09	-0.05	-0.07	-0.00	0.54	0.29	0.41	0.17	1.68

Notes: N = 481; SD = standard deviation; (21) to (27) are 5 point Likert scales ranging from 1 (not important) to 5 (very important); correlations above |0.09| significant at $p < 0.05$

6.4 Results

In the analyses logistic regression models are estimated to analyze the determinants of *transition behavior*. Tests for outliers, classification errors, specification errors and goodness of fit return good results. Multi-collinearity is not an issue, the mean VIF is 1.58 and the maximum VIF is 3.41 (variable *ind bus service*) (Kennedy, 2003; Menard, 2002; O'Brien, 2007). The regression shows some signs of heteroskedasticity, which is why robust standard errors are employed. The overall robustness of the main results is good.

Model 0 represents the base model of the analyses. This model includes only the control variables. In the next step the independent variables are added consecutively to analyze the hypotheses regarding the association between part-time entrepreneurship motivation and transition behavior. Table 6-6 shows the regression results for Model 0 to Model 7, including odds ratios (OR), robust standard errors (SE), significance levels, pseudo R^2, Chi^2 statistics and the percentage of correctly classified observations.

Table 6-6: Results of logistic regression

	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Variables	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**
Characteristics of part-time entrepreneur																
Female	1.18	(0.33)	1.04	(0.29)	1.04	(0.29)	1.04	(0.29)	0.76	(0.23)	0.81	(0.25)	0.80	(0.25)	0.79	(0.25)
Age < 25	1.47	(0.83)	1.70	(0.98)	1.81	(1.07)	1.88	(1.07)	2.16	(1.25)	2.30	(1.34)	2.29	(1.33)	2.38	(1.39)
Age 25–34	1.33	(0.47)	1.34	(0.48)	1.35	(0.48)	1.43	(0.53)	1.41	(0.53)	1.57	(0.59)	1.56	(0.59)	1.56	(0.59)
Age 45–54	0.54	(0.17) **	0.52	(0.17) **	0.54	(0.18) *	0.58	(0.19)	0.69	(0.23)	0.70	(0.24)	0.70	(0.24)	0.74	(0.26)
Age 55+	0.23	(0.12) ***	0.23	(0.12) ***	0.24	(0.13) ***	0.25	(0.13) ***	0.35	(0.18) **	0.35	(0.18) **	0.35	(0.18) **	0.36	(0.19) *
Abitur	0.48	(0.19) *	0.45	(0.18) *	0.48	(0.19) *	0.44	(0.18) **	0.41	(0.18) **	0.39	(0.17) **	0.39	(0.17) **	0.38	(0.17) **
College degree	1.79	(0.59) *	1.80	(0.59) *	1.93	(0.64) **	1.96	(0.64) **	1.90	(0.64) *	1.94	(0.65) *	1.94	(0.65) *	1.95	(0.66) **
Experience industry	1.09	(0.38)	1.17	(0.42)	1.16	(0.41)	1.08	(0.39)	1.07	(0.41)	1.06	(0.40)	1.07	(0.40)	1.09	(0.41)
Experience management	1.49	(0.40)	1.43	(0.39)	1.41	(0.38)	1.34	(0.37)	1.35	(0.37)	1.36	(0.38)	1.37	(0.38)	1.38	(0.39)
Experience entrepreneurship	1.09	(0.35)	1.05	(0.34)	0.99	(0.32)	0.99	(0.32)	0.99	(0.32)	1.01	(0.33)	1.00	(0.33)	0.98	(0.32)
Employed	1.19	(0.36)	1.39	(0.42)	1.47	(0.45)	1.52	(0.47)	1.68	(0.52) *	1.74	(0.54) *	1.73	(0.54) *	1.75	(0.55) *
Necessity entrepreneur	1.90	(0.58) **	1.93	(0.60) **	1.83	(0.58) *	2.41	(0.80) ***	2.34	(0.76) ***	2.36	(0.79) ***	2.37	(0.79) ***	2.56	(0.88) ***
German	5.30	(7.29)	5.43	(7.52)	6.30	(9.02)	6.18	(9.30)	5.10	(8.00)	4.47	(6.37)	4.28	(5.96)	4.29	(5.76)
Married	1.33	(0.35)	1.29	(0.34)	1.28	(0.34)	1.36	(0.36)	1.24	(0.34)	1.25	(0.34)	1.25	(0.34)	1.19	(0.33)
Repeat as part-time entrepreneur	0.45	(0.12) ***	0.46	(0.12) ***	0.46	(0.13) ***	0.47	(0.13) ***	0.45	(0.13) ***	0.44	(0.13) ***	0.44	(0.13) ***	0.44	(0.13) ***
Problem boss	3.31	(1.39) ***	3.59	(1.50) ***	3.47	(1.47) ***	3.50	(1.44) ***	3.95	(1.73) ***	3.99	(1.77) ***	4.03	(1.79) ***	4.34	(1.97) ***
Problem double-burden	0.63	(0.17) *	0.66	(0.18)	0.65	(0.18)	0.66	(0.18)	0.64	(0.18)	0.67	(0.19)	0.67	(0.19)	0.66	(0.19)
Problem family	0.34	(0.13) ***	0.32	(0.13) ***	0.32	(0.13) ***	0.33	(0.13) ***	0.34	(0.14) **	0.33	(0.14) **	0.33	(0.14) **	0.33	(0.14) ***
Problem market	2.76	(1.01) ***	3.11	(1.16) ***	3.17	(1.19) ***	3.18	(1.20) ***	3.24	(1.22) ***	3.37	(1.27) ***	3.34	(1.27) ***	3.22	(1.24) ***
Characteristics of part-time venture																
Start cap < 5,000	0.58	(0.18) *	0.58	(0.18) *	0.55	(0.17) *	0.59	(0.19) *	0.61	(0.19)	0.62	(0.20)	0.62	(0.20)	0.64	(0.20)
Start cap debt	1.61	(0.50)	1.49	(0.48)	1.41	(0.46)	1.32	(0.43)	1.19	(0.40)	1.26	(0.42)	1.28	(0.42)	1.32	(0.44)
Team venture	0.98	(0.45)	1.00	(0.47)	1.01	(0.48)	0.88	(0.43)	1.05	(0.52)	1.14	(0.57)	1.15	(0.57)	1.19	(0.59)
Urban location	1.60	(0.42) *	1.48	(0.39)	1.52	(0.40)	1.64	(0.45) *	1.63	(0.46) *	1.65	(0.46) *	1.63	(0.46) *	1.66	(0.48) *
Idea invention	4.31	(2.97) **	5.24	(3.65) **	5.18	(3.51) **	4.25	(2.89) **	4.17	(3.11) *	3.69	(2.70) *	3.71	(2.73) *	3.96	(2.88) *
Venture age < 3	0.96	(0.34)	0.87	(0.30)	0.86	(0.30)	0.87	(0.31)	0.91	(0.34)	0.86	(0.32)	0.85	(0.32)	0.80	(0.31)
Venture age 3–6	1.06	(0.37)	0.96	(0.34)	0.94	(0.33)	0.96	(0.34)	1.07	(0.41)	1.09	(0.42)	1.08	(0.42)	1.07	(0.41)

Table continues on next page

Table 6-6: Results of logistic regression–continued

	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Variables	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**
Ind bus service	1.69	(0.71)	1.63	(0.68)	1.60	(0.69)	1.58	(0.72)	1.46	(0.68)	1.56	(0.72)	1.54	(0.72)	1.57	(0.77)
Ind IT	0.82	(0.45)	0.73	(0.41)	0.63	(0.36)	0.66	(0.38)	0.56	(0.32)	0.54	(0.32)	0.54	(0.32)	0.52	(0.32)
Ind health	1.41	(0.79)	1.38	(0.78)	1.30	(0.75)	1.25	(0.73)	1.30	(0.77)	1.32	(0.79)	1.35	(0.81)	1.33	(0.83)
Ind education	1.22	(0.60)	1.19	(0.59)	1.18	(0.59)	1.28	(0.67)	1.17	(0.62)	1.21	(0.64)	1.20	(0.64)	1.18	(0.65)
Ind retail	0.50	(0.31)	0.51	(0.31)	0.48	(0.29)	0.45	(0.29)	0.52	(0.34)	0.55	(0.37)	0.55	(0.37)	0.54	(0.36)
Ind restaurant tourism	0.34	(0.28)	0.38	(0.31)	0.37	(0.30)	0.35	(0.29)	0.40	(0.36)	0.38	(0.34)	0.39	(0.34)	0.42	(0.36)
Ind manufacturing	0.81	(0.74)	0.75	(0.65)	0.68	(0.62)	0.76	(0.67)	0.74	(0.75)	0.77	(0.75)	0.77	(0.74)	0.79	(0.74)
Ind agriculture	0.54	(0.54)	0.43	(0.42)	0.34	(0.35)	0.36	(0.36)	0.51	(0.53)	0.53	(0.53)	0.60	(0.62)	0.55	(0.57)
Liberal profession	0.57	(0.17) *	0.55	(0.16) **	0.55	(0.16) **	0.54	(0.16) **	0.59	(0.18) *	0.60	(0.18) *	0.60	(0.18) *	0.60	(0.18) *
High similarity	1.64	(0.41) *	1.60	(0.41) *	1.60	(0.41) *	1.70	(0.44) **	1.65	(0.44) *	1.64	(0.44) *	1.64	(0.43) *	1.68	(0.45) *
Internet important	0.81	(0.21)	0.78	(0.21)	0.77	(0.21)	0.71	(0.19)	0.70	(0.19)	0.71	(0.19)	0.72	(0.20)	0.71	(0.19)
Hypotheses																
H1: Motive supplement wage			0.80	(0.07) ***	0.75	(0.07) ***	0.76	(0.07) ***	0.76	(0.07) ***	0.75	(0.07) ***	0.75	(0.07) ***	0.75	(0.07) ***
H2: Motive financial succ.					1.31	(0.21) *	1.24	(0.20)	1.18	(0.20)	1.26	(0.22)	1.27	(0.23)	1.31	(0.24)
H3: Motive innovation							1.43	(0.20) **	1.21	(0.18)	1.36	(0.21) **	1.36	(0.21) **	1.20	(0.20)
H4: Motive independence									1.61	(0.21) ***	1.70	(0.23) ***	1.70	(0.23) ***	1.65	(0.22) ***
H5: Motive recognition											0.75	(0.10) **	0.76	(0.11) **	0.72	(0.10) **
H6: Motive role models													0.94	(0.20)	0.91	(0.19)
H7: Motive self-realization															1.30	(0.16) **
Observations	481		481		481		481		481		481		481		481	
Variables	38		39		40		41		42		43		44		45	
Pseudo R^2 (McFadden)	0.181		0.195		0.201		0.214		0.237		0.244		0.245		0.252	
Chi^2	85.9 ***		86.1 ***		94.3 ***		100.9 ***		108.1 ***		108.5 ***		110.9 ***		112.3 ***	
Correctly classified	78.2%		77.8%		78.2%		78.8%		80.0%		79.0%		79.6%		80.0%	

Notes: OR = odds ratios; SE = robust standard errors; * p < 0.1, ** p < 0.05, *** p < 0.01 two-tailed

6.4.1 Results regarding hypotheses

Hypotheses 1, *4*, and *7* are supported by the data and *Hypotheses 2* and *3* are partially supported. The results of the logistic regression support *Hypothesis 1* (Model 7: OR = 0.75; p < 0.01). The variable *motive supplement wage* is negatively associated with the transition behavior of part-time entrepreneurs. Part-time entrepreneurs whose motivation is to supplement wage income are less likely to display transition behavior. The analyses reveal partial support for *Hypothesis 2*. The variable *motive financial success* is significant in Model 2 and insignificant in Model 7 (Model 2: OR = 1.31; p < 0.1; Model 7: OR = 1.31; p = n.s.). The regression results partially support *Hypothesis 3*. The variable *motive innovation* has a positive effect in Model 3, 5 and 6 but is insignificant in Model 7 (Model 3: OR = 1.43, p < 0.05; Model 7: OR = 1.20; p = n.s.). The motivation to innovate is positively associated with the transition behavior of part-time entrepreneurs (Model 3, 5, and 6). This effect becomes insignificant when the variable *motive self-realization* is included in Model 7, which indicates the possibility of a mediation effect. The variables *motive innovation* and *motive self-realization* are correlated with r = 0.54. *Hypothesis 4*, variable *motive independence*, (Model 7: OR = 1.65; p < 0.01), is fully supported by the data. Independence motivation is positively associated with transition behavior. The regression results do not support *Hypothesis 5* (variable *motive recognition*) for which a positive association was expected (Model 7: OR = 0.72; p < 0.05). Being motivated by recognition is negatively associated with transition behavior whereas the hypotheses indicated a positive relationship. This might be explained by the ambivalent status of entrepreneurs in Germany. According to GEM research successful entrepreneurs are awarded a rather high social status in Germany compared to other countries (top 30% in this category), however, entrepreneurship is not perceived as a good career choice in Germany (bottom 15% in this category) (Amorós and Bosma, 2014). The data does not support *Hypothesis 6* (variable *motive role models*) (Model 7: OR = 0.91; p = n.s.). Motivation through role models or tradition (*Hypothesis 6*) is not significantly associated with transition behavior. *Hypothesis 7* (variable *motive self-realization*) is supported by the regression results (Model 7: OR = 1.30; p < 0.05). Motivation to achieve self-realization is positively related to transition behavior.

6.4.2 Robustness checks

A set of tests was performed to evaluate the robustness of the results. First, the models were rerun with a more relaxed definition of the dependent variable *transition behavior*, attributing

transition behavior = 1 also to individuals who haven't taken any steps towards transition but decided to transition *and* had thought intensively about a transition. The results obtained from this analysis are almost identical. Furthermore, to test if former or failed entrepreneurs have tainted the results, in an additional analysis all former part-time entrepreneurs who had ended their entrepreneurial activity at the time of the survey were excluded. Almost identical results were obtained.

Considering that prior research on part-time entrepreneurship predominantly focused on wage-employed individuals (compare chapter 2.1), the analyses were also run with a subsample of wage-employed individuals. Excluding non-wage-earning individuals decreases the sample size by 31% to 332 observations. Moreover, constricting the sample to wage-earning part-time entrepreneurs possibly reduces the heterogeneity of the sample considerably since students, homemakers and retirees are excluded who presumably entered part-time entrepreneurship for different reasons than wage-employed individuals. Interestingly, the results of the analyses remain very similar (compare Table 6-7). *Motive supplement wage* continues to decrease transition probability (OR = 0.65; $p < 0.01$), whereas *motive independence* (OR = 1.62; $p < 0.01$) and *motive self-realization* (OR = 1.52; $p < 0.05$) continue to foster the transition. Also all the other effects displayed in Table 6-7 remain fairly stable. In Table 6-7 the results of the model 'full sample' are identical to 'Model 7' in Table 6-6.

Following the operationalization of the influential study by Folta et al. (2010), who only analyzed wage-employed men, a similar sub-sample was created. The subsample of 168 wage-earning male part-time entrepreneurs does exhibit some differences (compare Table 6-7). Some of the previously stated effects remain very similar; the *motive supplement wage* continues to decrease transition probability (OR = 0.44; $p < 0.1$), whereas *motive self-realization* (OR = 4.84; $p < 0.01$) continues to foster the transition. However, *motive independence* does not exhibit any significant impact, instead *motive financial success* is a significant predictor of the transition in this sub-sample (OR = 3.45; $p < 0.05$). This might indicate that men in general are more money orientated than women which was also found in prior research (Fairlie and Robb, 2009; Marlow and McAdam, 2013). The other regression results are similar to those in the Full Model but because of the smaller sample size some very high odds ratios are apparent and due to the smaller sample size the significance levels deteriorated as can be seen in Table 6-7. Furthermore, with only 168 observations and 42 variables the results may be biased because there are only 4 outcome events per predictor variable which is at the lower bound of what can be considered acceptable (Vittinghoff and

McCulloch, 2007). Consequently, the results for the male wage-employed subsample should be viewed with caution.

Table 6-7: Results of wage-employed subsamples

	Full sample Model 7		Wage-employed subsample		Male wage-employed subsample	
Variables	**OR**	**SE**	**OR**	**SE**	**OR**	**SE**
Characteristics of part-time entrepreneur						
Female	0.79	(0.25)	1.13	(0.50)		
Age < 25	2.38	(1.39)	36.92	(39.23) ***	361.84	(713.85) ***
Age 25–34	1.56	(0.59)	1.34	(0.70)	2.57	(3.44)
Age 45–54	0.74	(0.26)	0.48	(0.23)	0.66	(0.82)
Age 55+	0.36	(0.19) *	0.50	(0.36)	5.25	(8.68)
Abitur	0.38	(0.17) **	0.23	(0.13) ***	0.43	(0.63)
College degree	1.95	(0.66) **	2.69	(1.24) **	14.32	(24.04)
Experience industry	1.09	(0.41)	1.16	(0.68)	0.88	(0.92)
Experience management	1.38	(0.39)	1.06	(0.40)	0.61	(0.61)
Experience entrepreneurship	0.98	(0.32)	1.07	(0.43)	1.17	(1.43)
Employed	1.75	(0.55) *				
Necessity entrepreneur	2.56	(0.88) ***	2.27	(1.03) *	0.64	(0.57)
Characteristics of part-time venture						
Start cap < 5,000	0.64	(0.20)	0.73	(0.30)	2.58	(2.41)
Start cap debt	1.32	(0.44)	1.53	(0.65)	3.30	(3.01)
Team venture	1.19	(0.59)	2.48	(2.02)	0.31	(0.55)
Urban location	1.66	(0.48) *	2.91	(1.15) ***	19.11	(19.74) ***
Idea invention	3.96	(2.88) *	12.37	(13.23) **	455.81	(970.97) ***
Venture age < 3 years	0.80	(0.31)	0.84	(0.44)	0.37	(0.38)
Venture age 3–6 year	1.07	(0.41)	1.24	(0.62)	0.61	(0.66)
Industry dummies included[a]	*p = 0.36*		*p = 0.17*		*p = 0.35*	
10 other dummies included[a b]	*p = 0.00*	***	*p = 0.00*	***	*p = 0.00*	***
Hypotheses						
H1: Motive supplement wage	0.75	(0.07) ***	0.65	(0.09) ***	0.44	(0.19) *
H2: Motive financial succ.	1.31	(0.24)	1.28	(0.35)	3.45	(2.09) **
H3: Motive innovation	1.20	(0.20)	1.04	(0.24)	0.95	(0.47)
H4: Motive independence	1.65	(0.22) ***	1.63	(0.28) ***	1.05	(0.28)
H5: Motive recognition	0.72	(0.10) **	0.74	(0.15)	0.59	(0.27)
H6: Motive role models	0.91	(0.19)	1.36	(0.36)	1.84	(1.33)
H7: Motive self-realization	1.30	(0.16) **	1.52	(0.26) **	4.84	(2.47) ***
Observations	481		332		168	
Variables[b]	45		43		42	
Pseudo R^2 (McFadden)	0.252		0.355		0.566	
Chi^2	112.3 ***		104.2 ***		63.15 **	
Correctly classified	80.0%		81.9%		91.7%	

Notes: own calculations; OR = odds ratios; SE = robust standard errors; * p < 0.1, ** p < 0.05, *** p < 0.01, two-tailed

[a] jointly tested for significance

[b] the variable *German* was omitted in the wage-employed subsamples because of perfect prediction

6.4.3 Further results

Only one demographic variable was significant in the regressions displayed in Table 6-6. Age 55 years and older (variable *age 55+*) appears to be negatively associated with transition behavior (Model 7: OR = 0.36; $p < 0.1$). This result is in line with prior research. Although entrepreneurship is rewarding for older individuals (Singh and DeNoble, 2003; Small, 2011), prior research shows that older entrepreneurs have lower growth intentions (Kautonen et al., 2014) which aligns well with part-time entrepreneurship. It is also expected that older part-time entrepreneurs are more likely to be hobby entrepreneurs (Kautonen et al., 2014). An effect of a part-time entrepreneur's education on transition behavior can be observed. The variable *abitur* is negatively associated with the transition behavior, whereas a *college degree* is positively associated with transition behavior (Model 7: OR = 0.38; $p < 0.05$ and Model 7: OR = 1.95; $p < 0.05$ respectively). This finding is in line with prior research where education has been found to influence occupational choice (Block et al., 2013b) and entrepreneurship success (Davidsson and Honig, 2003; Martin et al., 2013; Unger et al., 2011).

The necessity motive significantly fosters part-time entrepreneurs' transition behavior. The variable *necessity entrepreneur* displays a significant positive impact (Model 7: OR = 2.56; $p < 0.01$). This finding is in line with prior entrepreneurship research which indicates that necessity entrepreneurs display distinct behavior (Block and Wagner, 2010; Williams, 2007) and those entrepreneurs may be forced to transition by necessity. Interestingly, problems associated with part-time entrepreneurship can foster and deter the transition. If an employer does not support part-time entrepreneurship (*problem boss*) this increases the chances to transition (Model 7: OR = 4.34; $p < 0.01$) and the same is true if problems regarding market knowledge are indicated (*problem market*) (Model 7: OR = 3.22; $p < 0.01$). Those two aspects thus represent push factors to transition. Contrarily, if part-time entrepreneurship creates problems aligning family and business commitments (*problem family*) the transition is less likely (Model 7: OR = 0.33; $p < 0.01$). The variable *urban location* is positively associated with the transition behavior (Model 7: OR = 1.66; $p < 0.1$) which might indicate that while part-time entrepreneurship is popular in rural areas (Markantoni et al., 2013), transitions are more likely in urban areas. A business idea that is based on an own invention (*idea invention*) is also positively associated with the transition behavior (Model 7: OR = 3.96; $p < 0.1$). Inventors are a very distinct group (Link and Welsh, 2013; Miner et al., 1992). They often value personal and social rewards higher than monetary rewards (Giuri et al., 2007). In

addition, inventors who start a venture to commercialize their own invention have high levels of self-efficacy and want to see their invention realized (Markman et al., 2002).

Prior research (Petrova, 2010; Piorkowsky et al., 2013) and the descriptive statistics (compare Table 6-1) show that part-time entrepreneurs are not evenly distributed across industries. Including industry dummies in the regression models, however, does not have significant effects. The result of an F-test on their joint impact is insignificant (in all Models: p = n.s.). Thus the transition behavior of part-time entrepreneurs is not influenced by industry effects.

Finally, the controls relating to liberal professions and the relationship between part-time venture and prior experience also exhibit significant impact on the propensity to transition. Individuals working in the *liberal professions* who are entitled to a special legal status in Germany, including lawyers, doctors, artists, translators, and engineers, are less likely to transition (Model 7: OR = 0.60; $p < 0.1$). However, if there is a high similarity between the wage job and the part-time entrepreneurial activity (*high similarity*) the propensity to transition is significantly increased (Model 7: OR = 1.68; $p < 0.1$). This might indicate that those individuals possess relevant experience and therefore feel more confident to transition to full-time entrepreneurship.

6.5 Discussion of findings

This chapter analyzes the behavior of part-time entrepreneurs to become full-time entrepreneurs. The analysis also offers insights regarding the characteristics and entrepreneurial motives of part-time entrepreneurs. This way, the chapter contributes to a deeper understanding of part-time entrepreneurship, which is an important but under-researched group of entrepreneurs. For part-time entrepreneurs, the transition to full-time entrepreneurship represents an important decision. Unlike prior research about the determinants of entrepreneurial choice (Block et al., 2013b; Davidsson and Honig, 2003; Kautonen et al., 2014), the results indicate only a minor influence of socio-demographic variables regarding the transition behavior of part-time entrepreneurs. The only significant demographic variable relates to part-time entrepreneurs being older than 55 years, who show a lower likelihood to engage in transition behavior. Most notably, no effect of gender on transition behavior of part-time entrepreneurs is found, which is surprising given the strong effects of gender in prior research about entrepreneurial choice (Langowitz and Minniti, 2007). Necessity entrepreneurship is found to be positively associated with transition behavior. This result surprises at first sight as necessity entrepreneurs are pushed by external

factors to start their venture. The result could be explained through the particular business model that necessity entrepreneurs pursue which is often cost-based (Block et al., 2015) and relies on venture growth and economies of scale.

The results show that entrepreneurial motivation is an important determinant of part-time entrepreneurs' transition behavior. The regression results highlight that being motivated by independence and self-realization is positively associated with transition behavior. By contrast, the motivation to supplement wage income and gaining social recognition is negatively associated with transition behavior. With these findings, the chapter contributes to the small but growing literature on part-time entrepreneurship (Folta et al., 2010; Petrova, 2010, 2012; Raffiee and Feng, 2014; Wennberg et al., 2006). Previous research shows that part-time entrepreneurs are more likely than other individuals to become full-time entrepreneurs (Wennberg et al., 2006). So far, little is known about the determinants of transition. The analysis sheds more light on this important issue. This chapter finds that many of the variables that are of great importance in other areas of entrepreneurship research, such as gender or entrepreneurial experience, have little explanatory power regarding transition behavior, which highlights the uniqueness of part-time entrepreneurs as a group. Part-time entrepreneurs are a heterogeneous group and this chapter shows that the transition behavior is partly determined by the motivation to enter part-time entrepreneurship. Hobby part-time entrepreneurs or part-time entrepreneurs who want to supplement wage incomes are less likely to show transition behaviors, whereas part-time entrepreneurs striving for independence are more likely to turn into full-time entrepreneurs. The latter finding is in line with prior entrepreneurship research showing that the desire for independence is a strong driver for full-time entrepreneurship (Benz and Frey, 2008a; Cooper and Artz, 1995; Hundley, 2001). In chapter 6.2.2 it is argued that the desire for independence can only be fully achieved in full-time entrepreneurship. Part-time entrepreneurs are not independent and often still constrained by their wage job.

6.6 Conclusion and limitations

In many countries, public policy aims to promote full-time entrepreneurship. Part-time entrepreneurs are often excluded from government support programs. The results suggest that this practice should be revisited. Part-time entrepreneurs who transition from part-time to full-time entrepreneurship often create robust ventures (Raffiee and Feng, 2014) and generate employment (compare chapter 2.2.1). Part-time entrepreneurship represents a sizable force in

the economy; over 30% of entrepreneurs in countries like Germany are part-time entrepreneurs (compare chapter 2.2). Part-time entrepreneurship offers the opportunity to induce individuals who are reluctant to start a full-time venture to try a low risk entrepreneurship option and to become full-time entrepreneurs at a later stage. The analysis provides policy makers with some indications how to identify part-time entrepreneurs with a high likelihood to move from part-time to full-time entrepreneurship. However, the results also show that policy makers should be cautious not to overestimate the number of part-time entrepreneurs exhibiting growth and transition intentions. The survey shows that part-time entrepreneurs are a heterogeneous group and many part-time entrepreneurs do not display transition behavior, but are likely to continue running small part-time ventures. This is not a bad thing. Such part-time entrepreneurs are able to cater for tiny market niches, which are too small for full-time ventures.

There are two important limitations of the analyses in this chapter. First, the research design relies on voluntary participation in the survey, which can introduce a selection bias. Second, this chapter tests the hypotheses with data from only one country (Germany). The findings may not be generalizable to other countries with different cultural and regulatory environments. Further research could investigate other drivers of transition from part-time to full-time entrepreneurship. Such drivers could relate to risk attitude (Hvide and Panos, 2014), personality traits (Baum and Locke, 2004; Zhao et al., 2010), national culture (Autio et al., 2013; Estrin et al., 2013) and social networks (Semrau and Werner, 2014).

7. Summary and outlook

Chapter 7 concludes this dissertation by summarizing the main findings in chapter 7.1, outlining the implications for practice in chapter 7.2 and highlighting three promising areas of future research on part-time entrepreneurship in chapter 7.3.

7.1 Summary of findings

Part-time entrepreneurship has become increasingly popular, and is nowadays no longer a niche phenomenon, but one of considerable economic and social relevance (compare chapter 2.2). For instance, in Germany 33% of all entrepreneurs are part-time entrepreneurs and even 65% of new ventures are founded on a part-time basis (compare chapter 2.2.1). Part-time entrepreneurship is a rather new field of research and this dissertation provided an overview of part-time entrepreneurship definitions and the state of academic research and highlighted distinct features of part-time entrepreneurship which differentiate it from full-time entrepreneurship (compare chapter 2.1 and 2.3). In chapter 3.2 and 3.3 two important research topics were established which have not been addressed by prior research. Research topic I was concerned with the impact of culture on part-time and full-time entrepreneurship. Research topic II regarded the motivational aspects of the transition from part-time to full-time entrepreneurship. The research gaps related to the two research topics were theoretically and analytically addressed in chapter 4, 5, and 6 (compare also Figure 1-1). The research presented in this dissertation advances entrepreneurship research by differentiating part-time from full-time entrepreneurship on the micro- and macro-level, contributing to a better understanding of both forms of entrepreneurship.

Specifically, regarding research topic I, this dissertation advanced prior research by highlighting the direct and indirect differential impact of macro-level societal culture on part-time and full-time entrepreneurship. Chapter 4 established that the macro-level societal cultural practices of gender egalitarianism (more negative effect on full-time entrepreneurship), future orientation (more positive effect on full-time entrepreneurship) and uncertainty avoidance (more negative effect on full-time entrepreneurship) differ significantly for the two forms of entrepreneurship (compare chapter 4.4.1). Furthermore, differences for several micro-level characteristics were establish for the first time in a multi-country setting, such as gender (less negative effect on part-time entrepreneurship), education (more positive effect on part-time entrepreneurship), age (less pronounced inverse U-shape for part-time entrepreneurship) and parental self-employment (less positive effect on part-time

entrepreneurship) (compare chapter 4.4.3). Table 7-1 summarizes the main findings of this dissertation.

Table 7-1: Summary of key findings

Research topic	Key findings

Research topic I
Does the impact of culture differ for part-time and full-time entrepreneurship?
	• Culture impacts part-time and full-time entrepreneurship
	  ○ Significant slope variance exists between countries regarding individual-level determinants
	  ○ Accounting for culture improves model fit
	• The impact of culture differs significantly for part-time and full-time entrepreneurship
	  ○ Uncertainty avoidance and gender egalitarianism have a significantly more negative association with full-time than with part-time entrepreneurship
	  ○ Future orientation has a significantly more positive association with full-time than with part-time entrepreneurship
	  ○ Institutional collectivism significantly weakens the positive association between education and full-time entrepreneurship
	  ○ In-group collectivism significantly weakens the positive association between education and part-time entrepreneurship

Research topic II
Which motives impact the transition of part-time entrepreneurs to full-time entrepreneurs?
	• Entrepreneurial motives impact the transition
	  ○ Entrepreneurial motives of independence and self-realization are positively associated with the transition
	  ○ Entrepreneurial motives of generating additional income and social recognition are negatively associated with the transition
	• The transition is also impacted by several other factors
	  ○ Characteristics of the entrepreneurs impact the transition (e.g., being wage-employed or a necessity entrepreneur positively impact the transition)
	  ○ Characteristics of the venture impact the transition (e.g., an urban location or a business idea based on an own invention positively impact the transition)

Chapter 5 of this dissertation further addressed research topic I and investigated the moderating impact of societal culture on micro-level relationships for both forms of entrepreneurship. The chapter showed that even the age-old and well-established relationship between education and entrepreneurial activity is moderated by different societal cultural dimensions for part-time and full-time entrepreneurship. Specifically, chapter 5 highlighted that the positive relationship between education and full-time entrepreneurship is negated by societal institutional collectivism, whereas, the relationship between education and part-time entrepreneurship is unaffected by this cultural dimension. Contrarily, the positive relationship between education and part-time entrepreneurship is significantly weakened by societal in-

group collectivism, whereas, the relationship between education and full-time entrepreneurship is unaffected by this cultural dimension. Thus, chapter 5 showed that not only the direction and magnitude of entrepreneurial determinants differ (compare chapter 4), but the mechanism through which those determinants interact also differs for the two forms of entrepreneurship. This underlines that part-time and full-time entrepreneurship are conceptually different and thus this dissertation contributed to a better understanding of the micro-and macro-level determinants of both forms of entrepreneurship.

Regarding research topic II, the motivation of part-time entrepreneurs to transition to full-time entrepreneurship, several significant determinants were established. Chapter 6 showed that the entrepreneurial motives of self-realization and independence are significantly positively associated with the transition, whereas the entrepreneurial motives of income supplementation and recognition are significantly negatively associated with the transition. Furthermore, several micro-level characteristics relating to the characteristics of the entrepreneur (e.g., necessity entrepreneurship, and a college degree) and characteristics of the venture (e.g., urban location, business idea based on own invention, and high similarity with previous work experience) were also found to be positively associated with the transition (compare chapter 6.4.3). Contrarily, an age of 45 years and above, problems aligning part-time entrepreneurship and family commitments, and start-up capital of less than 5,000 Euro were negatively associated with the transition to full-time entrepreneurship (compare chapter 6.4.3).

The reported findings are not without limitations which have been addressed in detail at the end of the respective chapters (compare chapter 4.6, 5.6, and 6.6). This dissertation advanced research on part-time entrepreneurship regarding the micro- and macro-level determinants which impact the engagement in part-time entrepreneurship and its development (compare chapter 4.5.2, 5.5, and 6.5). Furthermore, this dissertation provided valuable insights for future research and policy makers which will be summarized in the next sections.

7.2 Implication for practice

This dissertation has important implications for policy makers and part-time entrepreneurs. At the end of each chapter the implications for policy makers have been addressed regarding the specific findings of the chapter (compare chapter 4.5.2, 5.5, and 6.5) whereas this section summarizes and highlights the overarching implications.

Based on the findings of this dissertation policy makers can identify the direction of the direct and indirect impact of societal culture on part-time and full-time entrepreneurship. As a result, policy makers can identify whether a specific cultural environment exhibits a favorable preposition for part-time and full-time entrepreneurship. Based on this assessment, policy makers can more efficiently promote either form of entrepreneurship. As indicated in chapter 4.5.2, knowing the impact of societal culture on entrepreneurship can be used to counteract specific associations, e.g., through fostering positive role models. Furthermore, the findings of this dissertation help to identify entrepreneurs who are likely to transition from part-time to full-time entrepreneurship. Since part-time entrepreneurship is less susceptible to the negative impact of culture (compare chapter 4.4.1), full-time entrepreneurship can be fostered by promoting part-time entrepreneurship and establishing support programs for the transition to full-time entrepreneurship. Consequently, this dissertation not only contributes to a better understanding of the entrepreneurial climate but also provides indications how entrepreneurship can be fostered in challenging environments.

This dissertation also has several implications for current and future part-time entrepreneurs. Based on the findings in this dissertation, current and future part-time entrepreneurs can be reassured that part-time entrepreneurship is in many cases a viable and rewarding occupation which is widespread across the globe (compare chapter 2.2 and 2.3). This is particularly important since there is indication that part-time entrepreneurship is not regarded highly in many societies (compare chapter 2.3, 5.2.4, and 6.4.1). Furthermore, based on the findings in chapter 6, part-time entrepreneurs who intend to transition can assess their situation regarding factors which inhibited others from a transition and re-evaluate their own transition intentions or foresee the impact of positive and negative aspects. As a result part-time entrepreneurs are able to gain a better idea of the transition process and possible obstacles which ultimately can help to create a smoother transition.

7.3 Outlook

This final section of this dissertation will highlight several research avenues for future research on part-time entrepreneurship. What is considered a typical working life has changed tremendously during the last decades. Not only has the advent of new technologies changed the way humans behave and interact, but it also enabled new business and work models. While traditionally, employment with one company often lasted from recruitment to retirement, modern careers are expected to involve frequent changes in responsibilities and companies. Since traditional, indefinite, full-time positions are becoming less common, individuals are required to obtain income and devote their passion to many different occupations. In such an environment, part-time entrepreneurship can represent a rewarding building block in an individual's life, both financially and personally (compare chapter 2.2 and 2.3).

The underlying global trends that fostered the rise of part-time entrepreneurship (compare chapter 1 and 2.2.1) continue to shape societies and are likely to contribute to an increase of part-time entrepreneurship rates in the future. Hence, part-time entrepreneurship will become increasingly important for public policy, as well as academic research. Table 7-2 highlights the research areas which will be addressed in more detail in chapter 7.3.1, 7.3.2, and 7.3.2.

Table 7-2: Three avenues for future research

Research area	Possible research questions
Data quality and availability	• How should part-time entrepreneurship be labelled and defined to achieve broad acceptance in academic literature? • How can part-time entrepreneurship best be included in data collection projects? • What differentiates/defines sub-categories of part-time entrepreneurs?
Determinants of success	• Can success be generalized for part-time entrepreneurs? • What are suitable measures for part-time entrepreneurial success? • What drives part-time entrepreneurial success?
Macroeconomic impact	• How much does part-time entrepreneurship contribute to employment, investment and growth? • Does part-time entrepreneurship drive innovation? • Does part-time entrepreneurship negatively impact the performance in wage-jobs or the entrepreneurs' health?

While at the end of chapter 4, 5, and 6, specific research gaps for further research have been proposed, the remainder of this dissertation aims to highlight three broad avenues which promise to be fruitful areas for future research on part-time entrepreneurship.

7.3.1 Data quality and availability

Many definitions and labels exist for part-time entrepreneurship (compare chapter 2.1) which creates problems relating to data quality and availability. Consequently, conceptual research should consider part-time entrepreneurship and establish a broadly accepted definition of part-time entrepreneurship. In this respect it might be particularly important to conceptualize meaningful sub-categories for part-time entrepreneurship. A classification according to the main occupation might be one way to accomplish this (compare Table 2-4 and Table 2-5).

Once a clear definition of part-time entrepreneurship exists, it will be easier to include part-time entrepreneurship in data collection projects and thus obtain higher quality data for research. Researching part-time entrepreneurship is often complicated by the fact that most data sets do not explicitly consider part-time entrepreneurs. Instead, part-time entrepreneurs have to be identified by combining several aspects (compare chapter 4.3.2) or extracting part-time entrepreneurs might not be possible at all. For instance, the comprehensive German socio-economic panel (SOEP) only allows capturing part-time entrepreneurship by combining several income-related questions (Wagner et al., 2007). However, since part-time entrepreneurship is often not entered for financial success and most entrepreneurial ventures do not generate income for a significant time after foundation, this is very crude way of establishing part-time entrepreneurship. With this approach it is also difficult to distinguish non-wage-earning part-time entrepreneurs from full-time entrepreneurs. From an income perspective both categories are similar since they only earn entrepreneurial income. If the SOEP would include a simple question, asking for part-time entrepreneurship directly, those difficulties would be eliminated and a very rich data set could be analyzed regarding part-time entrepreneurship.

Finally, if part-time entrepreneurship is included in more data collection projects, the depth and breadth of data available will increase and more nuanced analyses of part-time entrepreneurship become possible. Considering that part-time entrepreneurs are a heterogeneous group (compare chapter 2), it might be very fruitful and revealing to establish and contrast the characteristics of different categories of part-time entrepreneurs. This can greatly foster the understanding of part-time entrepreneurship.

7.3.2 Determinants of part-time entrepreneurial success

This dissertation established that part-time entrepreneurship differs from full-time entrepreneurship and it is reasonable to expect that also the determinants of success differ. Initially, the concept of success should be reconsidered for part-time entrepreneurship. While success definitions for full-time entrepreneurship are mainly based on venture survival, growth or profit (e.g., Kolstad and Wiig, 2015; Nambisan and Baron, 2013; Reijonen and Komppula, 2007), those measures might not be applicable for part-time entrepreneurial success. Part-time entrepreneurship is often not entered for financial gain but rather for non-monetary benefits (compare chapter 2.2 and 2.3). Within the context of part-time entrepreneurship, even abandoning a venture might not be associated with failure but rather a reflection of changed personal circumstances. One way to determine success in part-time entrepreneurship might be to assess if the goals for which part-time entrepreneurship was entered initially have been achieved. Consequently, a more differentiated approach to entrepreneurial success should be considered and investigated.

Furthermore, the drivers of part-time entrepreneurial success have not been assessed so far in academic research. Some determinants of success for part-time entrepreneurs might be similar to those of full-time entrepreneurs. However, part-time entrepreneurship is also associated with different challenges compared to full-time entrepreneurship (compare chapter 2.3 and 6.4.3). For instance, combining a wage-earning occupation and part-time entrepreneurship is likely to require superior time management skills which could be crucial for successful part-time entrepreneurship. Moreover, considering the limited time a part-time entrepreneurs spends working in the venture, it might be particularly important for part-time entrepreneurs to delegate and outsource tasks.

7.3.3 Macroeconomic determinants and impact

The macroeconomic impact of part-time entrepreneurship represents a large research opportunity. Considering the likely future increase of part-time entrepreneurship, insights into the macroeconomic impact will become increasingly important.

So far academic research on the macroeconomic impact of part-time entrepreneurship has been very scarce and first attempts in gaining a better understanding have been rather crude (e.g., inmit, 2013). Obtaining a better understanding of the direct and indirect employment and investment effects of part-time entrepreneurship can help to assess the macroeconomic importance of part-time entrepreneurship. Most part-time entrepreneurs require little start-up

capital and do not have employees (compare chapter 6.3.2), however, part-time entrepreneurship undoubtable increases the number of people who are economically active. Part-time entrepreneurship might also significantly contribute to economic growth. In particular, the role of part-time entrepreneurship in economic development might be a very lush area for further research. For instance, data in Table 2-3 suggests that part-time entrepreneurship is particularly widespread in countries with a low developmental status. While it has been established that full-time entrepreneurship rates are higher in countries with low developmental status (e.g., Sautet, 2013; Wennekers et al., 2005) the developmental impact of part-time entrepreneurship within the context of developing countries has not been examined.

Furthermore, regarding the innovative power of part-time entrepreneurs, further research is warranted. While current research suggests that part-time entrepreneurs have limited innovation power, mainly operating in established industries with well-established business models, the part-time entrepreneurs mentioned at the beginning of this dissertation (e.g., Warren Buffett, Michael Dell, and Henry Ford) might constitute exceptions or might indicate that part-time entrepreneurship is in fact an important driver of innovation. Considering, that a large fraction of full-time entrepreneurs do not drive innovation, and considering that part-time entrepreneurs are less heavily invested in their business, and are thus able to try more innovative approaches (compare chapter 2.2), research on the innovative power of part-time entrepreneurship might yield surprising results.

Finally, the potential negative impact of part-time entrepreneurship should not be neglected. Future research might want to consider if part-time entrepreneurship negatively impacts wage-job performance of part-time entrepreneurs because they are distracted from their wage-work. This could be particularly worrisome since part-time entrepreneurship is strongly associated with high levels of education (compare chapter 5.2.1), individuals who perform important roles in developed economies. Furthermore, the impact of part-time entrepreneurship on the entrepreneurs' health and well-being should be examined. As established in chapter 2.3, part-time entrepreneurship can be a very stressful experience for entrepreneurs since the attention has to be split between several occupations. Even if part-time entrepreneurship is mainly entered for non-monetary benefits, the associated psychological stress could potentially deteriorate health. Identifying negative effects of part-time entrepreneurship can be a first step to overcome them.

Since the field of part-time entrepreneurship research is still young, and despite the advancements made in this dissertation, a myriad of aspects still wait to be analyzed. Part-time entrepreneurship remains a rewarding area for future research.

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Appendix

Appendix A: Additional models for chapter 4

Table A-1: Results of Autio et al. (2013) cultural dimensions

	Full Model					Autio et al. (2013) dimensions Multi-level random slope and intercept				
Variables	**Full-time entrepreneur (1)**		**Part-time entrepreneur (2)**		**Diff. 1 v. 2 (3)**	**Full-time entrepreneur (4)**		**Part-time entrepreneur (5)**		**Diff. 4 v. 5 (6)**
	Coef.	SE	Coef.	SE		Coef.	SE	Coef.	SE	
Individual-level										
Gender	-0.916 ***	(0.07)	-0.667 ***	(0.06)	***	-0.918 ***	(0.07)	-0.669 ***	(0.06)	***
Household income	0.155 ***	(0.05)	0.106 **	(0.04)		0.163 ***	(0.05)	0.107 **	(0.04)	
Household memb.	0.076 ***	(0.03)	0.067 **	(0.03)		0.076 ***	(0.03)	0.060 **	(0.03)	
Education	0.039 ***	(0.01)	0.064 ***	(0.01)	*	0.040 ***	(0.01)	0.064 ***	(0.01)	*
Age	2.525 ***	(0.17)	0.436 ***	(0.12)	***	2.527 ***	(0.17)	0.441 ***	(0.12)	***
Age squared	-0.271 ***	(0.02)	-0.061 ***	(0.01)	***	-0.271 ***	(0.02)	-0.061 ***	(0.01)	***
Parental self-empl.	0.665 ***	(0.06)	0.427 ***	(0.06)	***	0.673 ***	(0.06)	0.420 ***	(0.06)	***
Country-level										
Population[a]	-0.017	(0.04)	-0.075	(0.05)		-0.084	(0.05)	-0.068	(0.04)	
GDP per capita	-0.024 **	(0.01)	-0.012	(0.01)		-0.050 ***	(0.01)	-0.008	(0.01)	***
Power distance	-0.240	(0.26)	0.281	(0.29)						
Humane orientat.	0.301	(0.23)	0.687 **	(0.26)						
In-group collec.	-0.122	(0.22)	-0.270	(0.25)		-0.354 **	(0.15)	-0.067	(0.14)	*
Assertiveness	-0.087	(0.29)	0.290	(0.33)		0.310	(0.27)	-0.018	(0.26)	
H1: Uncertainty a.	-0.742 ***	(0.16)	-0.116	(0.18)	***	-0.454 ***	(0.16)	-0.094	(0.15)	**
H2: Performance o.	-0.142	(0.27)	0.051	(0.30)		0.690 **	(0.27)	0.244	(0.25)	
H3: Institutional c.	-0.385 **	(0.17)	-0.136	(0.19)		-0.166	(0.19)	-0.064	(0.19)	
H4: Future o.	0.825 ***	(0.25)	0.054	(0.29)	**					
H5: Gender e.	-0.475 **	(0.21)	0.030	(0.24)	*					
Observations	28,157					28,157				
Groups (countries)	27					27				

Notes: own calculations; coefficient (Coef.); standard errors (SE); * p < 0.1, ** p < 0.05, *** p < 0.01, two-tailed

[a] log transformation to improve the readability of results

Table A-2: Results of Hofstede cultural dimensions

	Full Model					Hofstede cultural dimensions Multi-level random slope and intercept				
Variables	**Full-time entrepreneur (1)**		**Part-time entrepreneur (2)**		**Diff. 1 v. 2 (3)**	**Full-time entrepreneur (4)**		**Part-time entrepreneur (5)**		**Diff. 4 v. 5 (6)**
	Coef.	SE	Coef.	SE		Coef.	SE	Coef.	SE	
Individual-level										
Gender	-0.916 ***	(0.07)	-0.667 ***	(0.06)	***	-0.928 ***	(0.05)	-0.712 ***	(0.05)	***
Household income	0.155 ***	(0.05)	0.106 **	(0.04)		0.216 ***	(0.05)	0.114 ***	(0.04)	**
Household memb.	0.076 ***	(0.03)	0.067 **	(0.03)		0.061 ***	(0.02)	0.052 **	(0.02)	
Education	0.039 ***	(0.01)	0.064 ***	(0.01)	*	0.047 ***	(0.01)	0.067 ***	(0.01)	*
Age	2.525 ***	(0.17)	0.436 ***	(0.12)	***	2.719 ***	(0.16)	0.546 ***	(0.10)	***
Age squared	-0.271 ***	(0.02)	-0.061 ***	(0.01)	***	-0.296 ***	(0.02)	-0.077 ***	(0.01)	***
Parental self-empl.	0.665 ***	(0.06)	0.427 ***	(0.06)	***	0.721 ***	(0.06)	0.500 ***	(0.06)	***
Country-level										
Population[a]	-0.017	(0.04)	-0.075	(0.05)		0.017	(0.04)	-0.032	(0.03)	
GDP per capita	-0.024 **	(0.01)	-0.012	(0.01)		-0.002	(0.01)	0.009	(0.01)	
Power distance[b]	-0.240	(0.26)	0.281	(0.29)						
Humane orientat.[b]	0.301	(0.23)	0.687 **	(0.26)						
In-group collec.[b]	-0.122	(0.22)	-0.270	(0.25)						
Assertiveness[b]	-0.087	(0.29)	0.290	(0.33)						
H1: Uncertainty a.[b]	-0.742 ***	(0.16)	-0.116	(0.18)	***					
H2: Performance[b]	-0.142	(0.27)	0.051	(0.30)						
H3: Institutional c[b]	-0.385 **	(0.17)	-0.136	(0.19)						
H4: Future o.[b]	0.825 ***	(0.25)	0.054	(0.29)	**					
H5: Gender e.[b]	-0.475 **	(0.21)	0.030	(0.24)	*					
Power distance[c]						0.028	(0.05)	0.030	(0.04)	
Individualism[c]						-0.021	(0.04)	-0.035	(0.04)	
Masculinity[c]						0.047	(0.03)	0.012	(0.02)	
Uncertainty avoid.[c]						-0.012	(0.03)	-0.074 **	(0.03)	*
Long term orient.[c]						-0.040	(0.04)	-0.107 ***	(0.03)	*
Indulgence[c]						-0.053	(0.05)	-0.115 **	(0.04)	
Observations	28,157					37,919				
Groups (countries)	27					37				

Notes: own calculations; coefficient (Coef.); standard errors (SE); * p < 0.1, ** p < 0.05, *** p < 0.01, two-tailed

[a] log transformation to improve the readability of results

[b] GLOBE societal cultural practices

[c] Hofstede cultural dimension scores divided by 10 for better readability of results

Table A-3: Results of single-level analysis with clustered standard errors

	Full Model					Single-level with clustered standard errors Stata				
Variables	**Full-time entrepreneur (1)**		**Part-time entrepreneur (2)**		**Diff. 1 v. 2 (3)**	**Full-time entrepreneur (4)**		**Part-time entrepreneur (5)**		**Diff. 4 v. 5 (6)**
	Coef.	SE	Coef.	SE		Coef.	SE	Coef.	SE	
Individual-level										
Gender	-0.916 ***	(0.07)	-0.667 ***	(0.06)	***	-0.822 ***	(0.08)	-0.668 ***	(0.05)	*
Household income	0.155 ***	(0.05)	0.106 **	(0.04)		0.143 ***	(0.04)	0.085 ***	(0.03)	*
Household memb.	0.076 ***	(0.03)	0.067 **	(0.03)		0.057 **	(0.02)	0.082 ***	(0.02)	
Education	0.039 ***	(0.01)	0.064 ***	(0.01)	*	0.044 ***	(0.01)	0.056 ***	(0.01)	
Age	2.525 ***	(0.17)	0.436 ***	(0.12)	***	1.952 ***	(0.22)	0.172	(0.13)	***
Age squared	-0.271 ***	(0.02)	-0.061 ***	(0.01)	***	-0.206 ***	(0.02)	-0.035 ***	(0.01)	***
Parental self-empl.	0.665 ***	(0.06)	0.427 ***	(0.06)	***	0.669 ***	(0.05)	0.382 ***	(0.05)	***
Country-level										
Population[a]	-0.017	(0.04)	-0.075	(0.05)		0.035	(0.04)	0.151 ***	(0.05)	*
GDP per capita	-0.024 **	(0.01)	-0.012	(0.01)		-0.017	(0.01)	0.003	(0.01)	
Power distance	-0.240	(0.26)	0.281	(0.29)		-0.218	(0.27)	0.144	(0.26)	
Humane orientat.	0.301	(0.23)	0.687 **	(0.26)		-0.011	(0.30)	0.927 ***	(0.20)	**
In-group collec.	-0.122	(0.22)	-0.270	(0.25)		-0.007	(0.24)	0.122	(0.19)	
Assertiveness	-0.087	(0.29)	0.290	(0.33)		-0.334	(0.29)	0.258	(0.23)	*
H1: Uncertainty a.	-0.742 ***	(0.16)	-0.116	(0.18)	***	-0.689 ***	(0.17)	0.094	(0.16)	***
H2: Performance o.	-0.142	(0.27)	0.051	(0.30)		0.508 *	(0.27)	0.038	(0.49)	
H3: Institutional c.	-0.385 **	(0.17)	-0.136	(0.19)		-0.621 ***	(0.15)	-0.310	(0.20)	
H4: Future o.	0.825 ***	(0.25)	0.054	(0.29)	**	0.767 ***	(0.24)	0.031	(0.26)	**
H5: Gender e.	-0.475 **	(0.21)	0.030	(0.24)	*	-0.203	(0.23)	0.801 ***	(0.22)	***
Observations	28,157					28,157				
Groups (countries)	27					27				

Notes: own calculations; coefficient (Coef.); standard errors (SE); * p < 0.1, ** p < 0.05, *** p < 0.01, two-tailed

[a] log transformation to improve the readability of results

Appendix B: Questionnaire transition behavior (German)

Appendix B contains the original German survey questions on which the analyses in chapter 6 are based. 'Current part-time entrepreneurs' were asked the following questionnaire; the questionnaires for the other categories (compare chapter 6.3.1) are very similar and mainly differ in regard to the tense used. Mainly questions relating to the variables in chapter 6 are shown. Omissions are clearly marked and the full questionnaires are available upon request (andreaslandgraf@gmail.com).

Allgemeine Angaben

a) Bitte geben Sie Ihr Geschlecht an.
O Männlich **O** Weiblich

b) Bitte geben Sie Ihr Alter an. _____

c) Bitte geben Sie das Bundesland Ihres Wohnortes an. *[Auswahlliste Bundesländer]*

d) Bitte ordnen Sie den Standort Ihrer Nebenerwerbsselbstständigkeit hinsichtlich des Gebietscharakters ein.

sehr ländlich	ländlich	städtisch	großstädtisch	Metropole
O	O	O	O	O

1. Fragen zur Einordnung der Nebenerwerbsselbstständigkeit

1.1) Welcher Erwerbstätigkeit gehen Sie persönlich derzeit neben Ihrer Nebenerwerbs-selbstständigkeit nach bzw. welchen sonstigen Status haben Sie derzeit zusätzlich zu Ihrer Nebenerwerbsselbstständigkeit?
O Vollzeitarbeitsplatz (sozialversicherungspflichtig)
O Teilzeitarbeitsplatz (sozialversicherungspflichtig)
O Mini-Job
O Beamter/-in
O Weitere selbstständige Tätigkeit
O Schüler/-in
O Studierender/Studierende
O Wissenschaftliche Mitarbeitende/Doktorand/-in
O Angestellte/-r in einer Transfergesellschaft
O Auszubildende/-r
O Teilnehmer/-in des Bundesfreiwilligendienstes/freiwillig Wehrdienstleistende
O Hausmann/Hausfrau
O Rentner/-in bzw. Pensionär/-in
O Arbeitslos
O Elternzeit
O Sonstiges
Falls Sonstiges, bitte angeben: _____

[Omission of questions 1.2 and 1.3 relating to weekly hours spent in part-time entrepreneurship and wage-employment]

1.4) Bitte geben Sie an, in welcher Beziehung Ihre Nebenerwerbsselbstständigkeit und Ihre sonstige Erwerbstätigkeit zueinander stehen. Denken Sie dabei bitte an die folgenden Aspekte: Branche, Kontakte, Netzwerk, Technologien, Know-How.

Meine Nebenerwerbsselbstständigkeit und meine sonstige Erwerbstätigkeit sind mit Blick auf oben genannte Aspekte insgesamt…	völlig unabhängig voneinander 				völlig deckungs-gleich 
	O	**O**	**O**	**O**	**O**

[Omission of question 1.5 relating to the perception of own part-time entrepreneurship]

2. Art der Nebenerwerbsgründung

2.1) Bei meiner Nebenerwerbsselbstständigkeit handelt es sich um …
[Mehrfachnennungen möglich]
O …eine Neugründung mit eigener Geschäftsidee.
O …eine Neugründung innerhalb bestehender Strukturen (z. B. Versicherungsmakler/-in).
O …eine Franchise-Gründung.
O …eine familieninterne Betriebsübernahme (z. B. im Zuge einer Unternehmensnachfolge).
O …eine familienexterne Betriebsübernahme (z. B. im Zuge einer Unternehmensnachfolge).
O …einen Eintritt in ein bestehendes Unternehmen.
O …eine Umstrukturierung eines bereits bestehenden Unternehmens.
O Sonstiges
Falls Sonstiges, bitte angeben: _____

2.2) Handelt es sich bei Ihrer Nebenerwerbsgründung um eine Einzel- oder um eine Teamgründung?
O Einzelgründung
O Teamgründung
Falls Teamgründung, mit wie vielen Personen (Sie eingeschlossen)? _____

2.3) In welchem Jahr haben Sie sich im Nebenerwerb selbstständig gemacht?
[Antwortkategorien: 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, vor 2003]

2.4) In welchem Wirtschaftsbereich haben Sie sich im Nebenerwerb selbstständig gemacht? Bitte ordnen Sie sich einer der nachfolgenden Kategorien zu.
O Unternehmensnahe Dienstleistungen
O IT-Dienstleistungen
O Konsumnahe/haushaltsnahe Dienstleistungen
O Finanzdienstleistungen
O Gesundheit und Pflege
O Unterricht, Kultur und Medien
O Handel
O Gastronomie/Hotellerie und Tourismus
O Transport und Verkehr

O Verarbeitendes Gewerbe/Handwerk
O Bau- und Ausbaugewerbe
O Energie
O Vermietung und Verpachtung
O Land- und Forstwirtschaft
O Sonstige

[Omission of question 2.5 containing a more detailed list of industries based on the answer to questions 2.4]

2.6) Steht das Internet im Mittelpunkt Ihrer Selbstständigkeit (z. B. als Vertriebskanal)?
O Ja **O** Nein

2.7) Sind Sie Freiberufler/-in? (d. h. grundsätzlich von der Gewerbesteuer befreit)
O Ja **O** Nein **O** Weiß nicht

2.8) Wie hoch war das Startkapital/Investitionsvolumen für Ihre Nebenerwerbsselbstständigkeit?

O Es war kein Startkapital notwendig
O Unter 5.000 €
O Mehr als 5.000 € bis 10.000 €
O Mehr als 10.000 € bis 25.000 €
O Mehr als 25.000 € bis 50.000 €
O Mehr als 50.000 € bis 100.000 €
O Mehr als 100.000 €
O Keine Angabe

2.9) Auf welche Weise haben Sie Ihre unternehmerische Selbstständigkeit finanziert?
O Ausschließlich mit eigenen Mitteln
O Ausschließlich mit externen Mitteln
O Mit eigenen und externen Mitteln

[Omission of questions 2.10, 2.11, and 2.12 relating to the form of debt financing, the number of employees, and the type of legal entity]

2.13) Wie kamen Sie auf Ihre Geschäftsidee? *[Mehrfachnennungen möglich]*
O Durch meine derzeitige oder frühere Erwerbstätigkeit
O Durch mein Hobby oder andere Freizeitaktivitäten
O Durch Lerninhalte in Schule oder Studium
O Durch wissenschaftliche oder angewandte Forschung
O Durch erfinderische Tätigkeit
O Durch Gespräche mit Kollegen/-innen
O Durch Gespräche mit Freunden außerhalb des beruflichen Umfeldes
O Durch Gespräche mit Familienmitgliedern
O Durch Bücher oder Zeitschriften
O Durch Erfahrungen als Konsument/-in
O Ich brauchte keine Idee, da ich ein vorhandenes Geschäftskonzept nutze (z. B. Versicherungsagentur/Franchising etc.)
O Es war meine eigene Idee
O Sonstige, und zwar _____

3. Gründerperson

3.1) Bevor Sie sich selbstständig gemacht haben, hatten Sie bereits Erfahrung in der Branche gesammelt, in der Sie sich selbstständig gemacht haben?
O Ja, primär hauptberufliche Erfahrung in der Branche.
O Ja, primär außer-/nebenberufliche Erfahrung in der Branche (z. B. Hobby, Nebentätigkeit).
O Ja, Ausbildung/Studium in der Branche, allerdings nicht in dieser Branche gearbeitet.
O Nein, keinen Erfahrungshintergrund in der Branche.

3.2) Über wie viele Jahre Berufserfahrung verfügten Sie insgesamt vor Ihrer Nebenerwerbgründung?
Insgesamt (Jahre): _____
… davon mit Mitarbeiterverantwortung: _____

3.3) Waren Sie vor Ihrer jetzigen Nebenerwerbsselbstständigkeit schon einmal oder mehrmals unternehmerisch selbstständig?
O Ja, einmal
O Ja, mehrmals
O Nein, ich habe mich zum ersten Mal selbstständig gemacht
Falls ja, *[Mehrfachnennungen möglich]*
O …im Haupterwerb
O …im Nebenerwerb

[Omission of questions 3.4 and 3.5 relating to the risk propensity of the entrepreneur]

4. Gründungsmotivation

4.1) Warum haben Sie sich selbstständig gemacht?
O Um eine konkrete Geschäftsidee auszunutzen.
O Weil ich zu diesem Zeitpunkt keine bessere Erwerbsalternative hatte.
O Beides trifft zu.

4.2) In welchem Ausmaß waren für Sie persönlich die folgenden Gründe wichtig für die Aufnahme Ihrer selbstständigen Tätigkeit?

Ich habe mein Unternehmen gegründet bzw. mich freiberuflich selbstständig gemacht, um…	**gar nicht wichtig**		**in mittlerem Ausmaß wichtig**		**sehr wichtig**
mich **herauszufordern**.	**O**	**O**	**O**	**O**	**O**
einen **Traum zu verwirklichen**.	**O**	**O**	**O**	**O**	**O**
daran zu **wachsen** und zu lernen.	**O**	**O**	**O**	**O**	**O**
ein **höheres Einkommen** zu erzielen.	**O**	**O**	**O**	**O**	**O**
finanzielle Sicherheit zu erlangen.	**O**	**O**	**O**	**O**	**O**
ein **Unternehmen aufzubauen**, das ich an meine **Kinder vererben** kann.	**O**	**O**	**O**	**O**	**O**
eine **Familientradition** fortzusetzen.	**O**	**O**	**O**	**O**	**O**
einem **Vorbild** zu folgen, das ich bewundere.	**O**	**O**	**O**	**O**	**O**
innovativ zu sein.	**O**	**O**	**O**	**O**	**O**
ein **eigenes Produkt/Dienstleistung** zu entwickeln.	**O**	**O**	**O**	**O**	**O**
etwas zu erreichen, **Anerkennung** zu bekommen.	**O**	**O**	**O**	**O**	**O**
eine **höhere Position** zu erreichen.	**O**	**O**	**O**	**O**	**O**
mehr Flexibilität in meinem privaten Leben zu bekommen.	**O**	**O**	**O**	**O**	**O**
mein **eigene/-r Chef/-in** zu sein.	**O**	**O**	**O**	**O**	**O**
eine **Geschäftsmöglichkeit** umzusetzen, die ich entdeckt habe.	**O**	**O**	**O**	**O**	**O**
eine **soziale Mission** zu erfüllen.	**O**	**O**	**O**	**O**	**O**
eine **Umweltmission** zu erfüllen.	**O**	**O**	**O**	**O**	**O**
Sonstiges: _____					

4.3) Geben Sie jetzt bitte an, warum Sie sich im Neben- und nicht im Haupterwerb selbstständig gemacht haben. In welchem Ausmaß treffen die folgenden Aussagen auf Sie persönlich zu?

Ich habe mich im Nebenerwerb selbstständig gemacht, …	**Trifft über-haupt nicht zu**		**Neutral**		**Trifft voll zu**
um mich mit einem **geringeren finanziellen Risiko** selbstständig machen zu können.	**O**	**O**	**O**	**O**	**O**
um eine **Geschäftsidee zunächst einmal erproben** zu können.	**O**	**O**	**O**	**O**	**O**
um mein **Hobby zum Beruf zu machen**.	**O**	**O**	**O**	**O**	**O**
um trotz der selbstständigen Tätigkeit weiterhin eine **finanzielle Absicherung** durch die Einkünfte aus meiner anderen Erwerbstätigkeit zu haben.	**O**	**O**	**O**	**O**	**O**
um weiterhin durch das **Sozialversicherungs-system** gesetzlich abgesichert zu sein (Kranken- und Pflegeversicherung, Arbeitslosen-versicherung, Rentenversicherung).	**O**	**O**	**O**	**O**	**O**
um meine **Fähigkeiten und Kompetenzen** auch in einer selbstständigen Tätigkeit **zu nutzen**.	**O**	**O**	**O**	**O**	**O**
um mir mittelfristig eine zusätzliche **Erwerbsalternative zu sichern**.	**O**	**O**	**O**	**O**	**O**
um mir eine **Basis für eine Haupterwerbs-selbstständigkeit** zu schaffen.	**O**	**O**	**O**	**O**	**O**
um zusätzlich zu meinem Vollzeitjob noch eine **weitere Einkommensquelle** zu eröffnen.	**O**	**O**	**O**	**O**	**O**
weil die **Geschäftsidee nur temporär erfolgversprechend** ist.	**O**	**O**	**O**	**O**	**O**
weil **Synergien zu** meiner **Angestelltentätigkeit** bestehen.	**O**	**O**	**O**	**O**	**O**
weil ich damit **Fähigkeiten und Kompetenzen erwerbe**, die ich bei meiner anderen Erwerbstätigkeit nutzen kann.	**O**	**O**	**O**	**O**	**O**
um meine **Familienaufgaben** und meine Erwerbstätigkeit **besser vereinbaren zu können**.	**O**	**O**	**O**	**O**	**O**
weil ich einen attraktiven **Haupterwerb** habe, den ich **nicht aufgeben möchte**.	**O**	**O**	**O**	**O**	**O**
Sonstiges: _____					

[Omission of question 4.4 relating to personal desire to engage in entrepreneurship]

5. Entwicklung der Nebenerwerbsselbstständigkeit

[Omission of questions 5.1, 5.2, 5.3, and 5.4 relating to satisfaction with part-time entrepreneurship, profit, life, etc.]

5.5) Wenn Sie sich nochmals entscheiden müssten, würden Sie sich wieder selbstständig machen?
O Ja, auf jeden Fall, und zwar sofort im Haupterwerb.
O Ja, auf jeden Fall, und zwar wieder im Nebenerwerb.
O Ja, vielleicht.
O Nein, weder im Haupt- noch im Nebenerwerb.
Falls nein: Was sind die Gründe hierfür? _____

6. Erfolgsfaktoren und Hindernisse

6.1) Welche Faktoren sind Ihrer Meinung nach speziell für den Erfolg einer Gründung im Nebenerwerb von wesentlicher Bedeutung?

	Trifft über-haupt nicht zu		**Neutral**		**Trifft voll zu**
Erfolgreiches Ineinklangbringen von erster Erwerbstätigkeit (abhängige Beschäftigung) und Nebenerwerbsselbstständigkeit	**O**	**O**	**O**	**O**	**O**
Gutes Zeitmanagement	**O**	**O**	**O**	**O**	**O**
Gute Organisationsfähigkeit	**O**	**O**	**O**	**O**	**O**
Unterstützung durch das private Umfeld	**O**	**O**	**O**	**O**	**O**
Unterstützung durch das arbeitgebende Unternehmen [bei abhängiger Beschäftigung als erster Erwerbstätigkeit]	**O**	**O**	**O**	**O**	**O**
Möglichkeit, die Arbeitszeiten flexibel einteilen zu können	**O**	**O**	**O**	**O**	**O**
Sonstige Faktoren, und zwar _____					

6.2) Geben Sie bitte an, in welchen Bereichen Sie persönlich Probleme und Hindernisse bei Ihrer Gründung im Nebenerwerb sehen.

Spezielle Probleme und Hindernisse bei Ihrer Nebenerwerbsselbstständigkeit … *[Mehrfachnennungen möglich]*	**beim Start**	**heute**
Doppelbelastung durch erste Erwerbstätigkeit und Nebenerwerbsselbstständigkeit	**O**	**O**
Mein **Chef/meine Chefin befürwortet** meine Nebenerwerbsgründung nicht	**O**	**O**
Vereinbarkeitsprobleme Familie – andere Erwerbstätigkeit – Nebenerwerbsselbstständigkeit	**O**	**O**
Mangelnde Informations- und Beratungsmöglichkeiten für spezifische Situation von Nebenerwerbsgründern/-innen	**O**	**O**
Zu starke **Zentrierung** des Unternehmens auf die **eigene Person**	**O**	**O**
Ich kann mich **nicht** in dem Maße um meine Nebenerwerbsselbstständigkeit **kümmern, wie ich es gerne täte**	**O**	**O**
Schlechtes **Zeitmanagement**	**O**	**O**
Noch keine ausgereifte **Geschäftsidee**	**O**	**O**
Zu geringe **Markt- und Kundenkenntnisse**	**O**	**O**
Schwierige **Kunden- und Auftragsakquise**	**O**	**O**
Schwierige (zeitliche) **Erreichbarkeit** für meine Kunden	**O**	**O**
Zu **geringes kaufmännisches Wissen**	**O**	**O**
Zu wenig **Förderprogramme** speziell für Nebenerwerbsgründer/-innen	**O**	**O**
Schwierigkeiten mit der **Finanzierung**	**O**	**O**
Schwieriger Aufbau der **Unternehmens-Organisation/-Abläufe** für die Anforderungen im Nebenerwerb	**O**	**O**
Bürokratische Hürden	**O**	**O**
Ich hatte **keine Probleme**	**O**	**O**
Andere Schwierigkeiten/Hindernisse, und zwar _____		

[Omission of questions 6.3, 6.4, and 6.5 relating to social security, benefits and disadvantages of part-time entrepreneurship]

7. Unterstützungsangebote

[Omission of questions 7.1 to 7.5 relating to support programs and policies]

8. Perspektiven der Nebenerwerbsselbstständigkeit/Überführung in Haupterwerbsselbstständigkeit

8.1) Wie viel planen Sie, in den kommenden 12 Monaten in Ihre Nebenerwerbsselbstständigkeit (Ihr Unternehmen/Ihre freiberufliche Selbstständigkeit) zu investieren?

O Noch keine konkreten Planungen
O Unter 5.000 €
O Mehr als 5.000 € bis 10.000 €
O Mehr als 10.000 € bis 25.000 €
O Mehr als 25.000 € bis 50.000 €
O Mehr als 50.000 € bis 100.000 €
O Mehr als 100.000 €
O Keine Angabe

8.2) Wie viele zusätzliche Mitarbeiter/-innen planen Sie in den kommenden zwei Jahren einzustellen? _____

8.3) Wie ernsthaft haben Sie sich bereits persönlich mit der Überführung Ihrer Nebenerwerbsselbstständigkeit in eine Haupterwerbsselbstständigkeit beschäftigt?
O Noch nie
O Oberflächlich
O Wiederholt
O Relativ konkret
O Ich habe bereits erste Schritte unternommen

[Omission of questions 8.4 and 8.5 relating to the importance and opinion of others if a transition would take place]

8.6) Wie stehen Sie aktuell zur Haupterwerbsselbstständigkeit?
O Ich möchte meine Nebenerwerbsselbstständigkeit **definitiv nicht** in eine Haupterwerbsselbstständigkeit überführen.
O Ich **schließe** eine Überführung in eine Haupterwerbsselbstständigkeit **grundsätzlich nicht aus**.
O Ich habe **bereits die Entscheidung getroffen**, die Nebenerwerbsselbständigkeit in eine Haupterwerbsselbstständigkeit zu überführen, habe aber bislang noch keine konkreten Schritte zur Überführung ergriffen.
O Ich bereits einen **konkreten Zeitplan** zur Überführung der Nebenerwerbsselbstständigkeit in eine Haupterwerbsselbständigkeit.
O Ich habe **bereits mit der Überführung** der Nebenerwerbsselbstständigkeit in eine Haupterwerbsselbständigkeit **begonnen**.
O Ich weiß nicht.

[Omission of follow up questions depending on the answer to question 8.6]

9. Soziodemografische Angaben

9.1) Welchen Familienstand haben Sie?
O Ledig
O Verheiratet/Lebensgemeinschaft
O Geschieden
O Verwitwet

9.2) Wie viele Kinder unter 18 Jahren leben derzeit in Ihrem Haushalt? _____

9.3) Welche Nationalität haben Sie? _____

9.4) Ist Deutsch Ihre Muttersprache?
O Ja **O** Nein
Falls nein, was ist Ihre Muttersprache? _____

9.5) Welchen höchsten allgemeinen Schulabschluss haben Sie bzw. streben Sie an?
O Haupt-/Volksschulabschluss
O Realschulabschluss/Mittlere Reife
O Fachhochschulreife
O Abitur
O Keinen Schulabschluss

9.6) Welchen höchsten beruflichen Ausbildungs- oder Hochschul-/Fachhochschulabschluss haben Sie bzw. streben Sie an?
O Abschluss einer Lehre/Ausbildung in der Industrie/Wirtschaft
O Abschluss einer Lehre/Ausbildung in der öffentlichen Verwaltung/Staat
O Abschluss einer Lehre/Ausbildung im Gesundheitswesen
O Abschluss an einer Berufsfachschule
O Meister-/Technikerausbildung
O Fachhochschulabschluss
O Universitätsabschluss
O Sonstiges, und zwar _____

9.7) Welche Arten von Unternehmertum gibt es in Ihrem Umfeld? *[Mehrfachnennungen möglich]*
O Meine Eltern sind/waren selbstständig.
O Mein/-e Partner/-in ist/war selbstständig.
O Andere Familienmitglieder sind/waren selbstständig.
O Ich habe enge Freunde, die selbstständig sind/waren.
O Ich habe Nachbarn, die selbstständig sind/waren.
O keines der genannten

9.8) Wie haben Sie von dieser Umfrage erfahren? _____

Vielen Dank für Ihre Unterstützung der Studie.