Dieter Bögenhold · Jean Bonnet
Marcus Dejardin
Domingo Garcia Pérez de Lema *Editors*

Contemporary Entrepreneurship

Multidisciplinary Perspectives on Innovation and Growth

Springer

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Contents

Part I

Contemporary Entrepreneurship and Field of Research

Contemporary Entrepreneurship: An Overview

Dieter Bögenhold, Jean Bonnet, Marcus Dejardin, and Domingo Garcia Pérez de Lema

Abstract

The analysis of modern capitalism is an analysis of economic, occupational and social dynamics, which are inherent to capitalism and which give color and contribute to the speed of economic development. New terms and semantics diffuse into our vocabulary, such as economy 5.0, 2.0 world, *i*Conomy, or cloud working, which transport ideas of economic and social progress, prosperity and well-being. These terms are closely linked to thought about entrepreneurship and individual entrepreneurs in a changing world. The article provides a brief overview and introduction to selected elements of that discussion. Specifically, by referring to classics such as Adam Smith, Joseph Schumpeter and Israel Kirzner, authors endeavor to relate contemporary entrepreneurship to items of classic thought in the history of economics. The evolving discussion leads automatically to recent research questions. Finally, the structure of the book is explained and the individual sections and contributions are introduced.

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The analysis of modern capitalism is an analysis of economic, occupational and social dynamics, which are inherent to capitalism and which give color and contribute to the speed of economic development. New terms and semantics diffuse into our vocabulary, such as economy 5.0, 2.0 world, ***i***Conomy, or cloud working, which transport ideas of economic and social progress and prosperity. These terms are closely linked to thought about entrepreneurship and individual entrepreneurs in a changing world. Entrepreneurial actors in particular seem to be viewed in the glamorous light of adventurers pioneering new ways to achieve individual and social sustainability. This kind of reasoning reflects real phenomena of social upward mobility as well, as it continuously oscillates into a general principle for which the Horatio Alger myth of the American dream is significant.

Especially in recent years, entrepreneurship has tended to evolve as an indefinite all-purpose word, the meaning of which is not entirely clear to many contemporaries who attempt to come to grips with it (Bögenhold 2004). The term covers a diversity of social and economic actors, processes and situations. In the history of economic theory in the area of entrepreneurship, we also find changing and partly competing interpretations of the term entrepreneurship (Swedberg 2000; Westhead and Wright 2000; Shane 2001; Hébert and Link 1982, 2009; Landström and Lohrke 2010).

Among the many links and implications the discussion about entrepreneurship has, market competition, innovation and growth are certainly dominant. In some respects, entrepreneurship is regarded as the essence of dynamics in modern capitalism, so that authors are already referring to an entrepreneurial society (Audretsch 2007a, b). Competition is one of the keywords of market capitalism in the public discussion of economic affairs, and it is regarded as a driving force of economic dynamics, which leads to wealth and prosperity. According to the idea of perfect capitalism, the institutions of market and competition go hand in hand as two sides of the same medal. Different agents compete through different mechanisms, and these mechanisms can consist—among others—of price, product or process innovations. The classic idea already provided by Adam Smith is that individual companies and the global economy both profit when individual companies try to realize competitive advantages by following their own aims (Offer 2012). Non-intentional consequences of egotistical strategies to maximize profit lead economy and society towards a "win-win situation", increasing the level of productivity and enhancing the level of wealth, at the micro level of individual companies and at the macro level of the global economy.

Smith's famous argument and formulation of the "invisible hand" is mentioned by name in the *Wealth of Nations* only once: The individual "generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. . . . he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation, indeed, not very common

among merchants, and very few words need be employed in dissuading them from it" (Smith 1910 [1790], 400).

One of the premises of thought in Smith's reasoning is that the driving engine for prosperity lies in the division of labor, which interacts with ideas of corporate competition. "Nobody, either before or after A. Smith, ever thought of putting such a burden upon the division of labour" (Schumpeter 1954, 187). Following these considerations, Smith was epoch-making and policies were concluded to foster trade and *laissez-faire* as core principles of economic philosophy, but in hindsight, he is certainly the theorist who came up with a positive evaluation of competition and who introduced the metaphor of the invisible hand.

A further predominant author dealing with entrepreneurship is Joseph A. Schumpeter, who stressed upon two major points, namely the dynamics of capitalist development including innovations, and the role of entrepreneurs within that scenario. Most recently, Baumol (2015) draws an argumentative line between Smith and Schumpeter as growth theorists. Schumpeter is regarded as one of the pioneers of evolutionary economics. He viewed capitalism as a form or method of economic change. His *Capitalism, Socialism, and Democracy* (1942) contains the famous expression of 'creative destruction'. One chapter in the book is explicitly entitled *The Process of Creative Destruction* and deals with the *modus operandi* of competition. Schumpeter argues against some aspects of predominant economic thought at his time, which was generally characterized as being static. In opposition to that, Schumpeter conceptualized the economy as being in a constant flux of economic and social change. Schumpeter frequently discussed the parallels and divergencies of his thought vis-à-vis Marxism: The essential point to grasp is that in dealing with capitalism, we are dealing with an evolutionary process (Schumpeter 1942, 82).

The analysis of economic structures cannot be operated as a blueprint but must always be performed by acknowledging its transitory processes: capitalism is always *in the making*, or in Schumpeter's wording: "Capitalism, then, is by nature a form or method of economic change and not only never is but never can be stationary" (Schumpeter 1942, 82). The central role of innovation is—*nomen est omen*—to continuously introduce new forms of newness of diverse kinds, e.g. new consumer goods, new methods of production or transportation, new markets or new forms of industrial organization. These permanent introductions of economic, organizational and social freshness are contributed—through the lenses of Schumpeter—by entrepreneurship and entrepreneurs as individual actors. One of the central questions is the question regarding the profile of the actor: Who is engaged as entrepreneur jointly with whom else, offering which service or final product for which purpose, in which legal form and with which degree of success at which global location and in which historic times ? In early writings Schumpeter ([1912] 1963) inserted the role of the entrepreneur as the critical function to fulfill the transition from innovation ideas into practical innovations. While some authors argue that the entrepreneurial function has declined over the course of the twentieth century, due to the separation of ownership and control (Berle and Means 1932), in line with the rise of modern stock market economies, other authors claim a

fundamental shift towards a knowledge economy, which goes hand in hand with an entrepreneurial economy (Audretsch and Thurik 2000).

Kirzner (1979, 1985) stresses the essential role of the entrepreneur in the process of markets equilibrium. According to him, entrepreneurial profit is a pure profit, which is not linked to the use of production factors. It comes from simultaneous decision-making to purchase and sell following the discovery of advantageous price differences, the existence of which is based on the ignorance of the agents about the precise demand and supply. Profit opportunities, up until then ignored by economic agents, cannot be discovered by the sole setting of specific investments, they depend primarily on private individuals' capacities and especially on their alertness. According to Baumol (2010, 15), while the Schumpeterian entrepreneur destroys all equilibrium, the Kirznerian entrepreneur tends to re-equilibrate the market. Kirzner (2009, 10) tries a synthesis of the two approaches: "*. . . **all** these price differentials (**both** attributable to Schumpeterian creativity and those present in the simplest of arbitrage contexts) can and should be seen as examples of entrepreneurial arbitrage activity. Such activity drives prices systematically in directions tending to eliminate the price differentials (i.e., the opportunities for pure profit) which are, always, the sparks which ignite entrepreneurial attention, drive, and creativity* ». Highlighting entrepreneurial arbitrage, Kirzner includes, somehow, Schumpeter in his theory. Does the uncertainty about the success of the innovation of the entrepreneur-precursor indeed allow a real arbitrage? We can doubt it . . .

Facchini (2014) notes, however, that the Kirzner/Schumpeter opposition about the entrepreneur as a power of equilibrium versus the entrepreneur as a power of disequilibrium is no longer needed in a genuinely processual vision of markets where the agents perpetually correct their errors of appreciation. The market economy is an open world. Alertness acts then positively on the coordination of supply and demand plans on the market. "*In the course of this entrepreneurial process, new products may be introduced, new qualities of existing products may be developed, new methods of production may be ventured, new forms of industrial organization, financing, marketing or tackling risk may be developed*" (Kirzner 1985, 30). So, there is the idea that the market and entrepreneurs will allow the discovery of new methods, new uses, new productive organizations etc. (we return to the five types of innovation of Schumpeter), but especially that part of these discoveries cannot be predicted, it is the market and the information it dispatches that will ultimately select the most relevant projects. Who could have foreseen the rapid development, and on such a scale, of the so-called "collaborative economy"?

Audretsch et al. (2006) then define the entrepreneur as the missing link between investment in knowledge and growth. That is the entrepreneur, who adds value to scientific discovery. Entrepreneurship capital is then, just as capital and labor in a macroeconomic model, an essential factor of production in the economy. Acs et al. (2013, 764) in their recent *Knowledge Spillover Theory of Entrepreneurship* (KSTE), highlight the importance of the local combination of entrepreneurs and knowledge disseminated mainly by universities and research centers: "The ability to transform knowledge into economic knowledge involves not only a set of skills

and insights, but also local proximity to the source of the knowledge". The entrepreneur perceives the relevant economic information, transforms it into profit and reveals to others the value of their own information (Binet et al. 2010). By doing this, he reduces pockets of ignorance. The identification of a market advantage by an entrepreneur creates opportunities for others (Holcombe 1998). It is for this reason that the more entrepreneurs there are, the more companies share new information that create new opportunities for business creation. The current period is a good period for entrepreneurship, Audretsch (2007a, b) goes on to describe the entrepreneurial society, where entrepreneurship acts as a catalyzer of knowledge spillovers, putting in competition new ideas and increasing diversity.

Taking those ideas as a starting point, a lively discussion in entrepreneurship has emerged since Schumpeter. Especially during the past decades, entrepreneurship as an academic domain has exploded in diverse ways. A magnitude of new conferences, journals, professorships and genuine study programs on entrepreneurship is the result. The "promise of entrepreneurship as a field of research" (Shane and Venkataraman 2000) inspired many contemporaries to follow a study program, which was based upon a broad fundament of literature. However, simultaneously, for many participants, entrepreneurship has become a broad label under which a "hodgepodge of research" (Shane and Venkataraman) is housed. Entrepreneurship papers listed in the ISI Web of Science increased by 550 % between 1990 and 2006 (Sorenson and Stuart 2008). No final decision has been reached, whether entrepreneurship research may stand independently on its own feet and whether it can survive without the tool boxes and sensitivity of classic academic fields such as economics, sociology, psychology and others. Without any doubt, in the meantime entrepreneurship research has become a multi-level research field (Shepherd 2011), but should gather further strength to become more interactive, activity-based, cognitively hot, compassionate, and prosocial (Shepherd 2015).

This book must be read as part of a series of conferences and ongoing publications (Bonnet et al. 2010, 2012), which were already initiated in the second part of the last decade. On these previous occasions, the primary aim was to gather different topics and research projects with diverse methodologies in order to foster a commonly shared understanding of knowledge on market processes, competition, growth and innovation patterns in combination with entrepreneurship.

The need for interdisciplinary research perspectives (Bögenhold et al. 2014), which cover a variety of research domains (Davidsson 2008) is related to different aspects of discussion. The article by *Per Davidsson* in this volume argues that entrepreneurship focuses less on smallness, but to a much greater extent on the newness of actors and organizational units. We learn about the emergence of entrepreneurship as a domain of scholarly activity with different research questions and methodologies. Davidsson provides a typology of themes, research needs and future paths for further research attention.

Beside this general paper by Per Davidsson, which offers a synthesis and outlook, the book is structured into three major thematic blocks covering: A first part deals with *Entrepreneurial performance and growth: Economic dimensions* trying to discuss links between economic and entrepreneurial performance and

lessons for growth, prosperity and job creation, either in historical or comparative perspectives. The following second part is entitled *Entrepreneurial individual primers, paths and outcomes: Socioeconomic Dimensions* and deals not only with economic views, but most papers enlarge their discussion to a *socio*economic perspective, including variables such as labor markets, demography, entrepreneurial heterogeneity and economic policy, but especially social and occupational mobility schemes. The final third part of the book is entitled *Entrepreneurial frameworks, ethics and culture*. Individual papers focus on different contextual variables influencing real practices of entrepreneurship. Either education or—more generally—different patterns of culture and related ethics serve as framework for entrepreneurial success or failure; they provide the rules of the game (Baumol 1990, 894).

Audretsch and Thurik (2000, 2001) and Thurik (2011) distinguish two polar economies according to which economic stylized facts can be reinterpreted and reordered. The model of the entrepreneurial economy articulates economic growth around a variety of needs, novelty, turbulence, innovation and functioning in networks, allowing the full play of entrepreneurial flexibility. In most countries, the real contribution of entrepreneurship to economic development is emphasized by the statement that "Entrepreneurship is considered to be an important mechanism for economic development through employment, innovation and welfare effects" (Acs and Amoros 2008, 121). Nevertheless, one may notice that some differences still may be at work regarding the potentiality of growth (Wong and Autio 2005; van Stel et al. 2005). If the involvement of young (18–24 year-olds) in entrepreneurial activity is important for the growth in developed countries, it is the older entrepreneurs (45–64 year-olds) that bring the stronger contribution to growth in developing countries (Verheul and van Stel 2010). In the same vein it is possible to distinguish different motivations for entrepreneurship (Congregado and Millan 2013), and different attitudes about the growth of the new firm (Hermans et al. 2015). Entrepreneurship is also essential for structural change (Naudé 2010). It contributes to the transformation of agricultural economies into knowledge and service economies. The weight of the primary sector and the functioning of the informal economy explain the high rate of entrepreneurial activity in developing countries. With the development and the increase of interesting wage opportunities (the level of actual wages increases), we observe a diminution of the entrepreneurial activity but also a revival at the extreme in *innovation driven* economies (GEM 2009, 9). This evidence leads to the so-called U-shaped curve (but is it U?) that links the GDP per capita with the rate of entrepreneurial activity (Carree et al. 2007). Wennekers et al. (2010) argue that the reemergence of independent entrepreneurship is based on at least two 'revolutions': the emergence of solo self-employment (Bögenhold and Fachinger 2008; Bögenhold et al. 2015; Fachinger and Frankus 2015) which is important for societal and flexibility reasons and which reflects the ambitious and/or innovative entrepreneurs (Acs et al. 1999; Van Stel and Carree 2004; Audretsch 2007a).

The chapter, "*Linking Entrepreneurship and Economic Growth in Sweden, 1850-2000*", by *Marcus Box, Xiang Lin* and *Karl Gratzer*, is devoted to the causal

relationship between growth in self-employment and economic growth in Sweden between 1850 and 2000. For the entire period, variations in self-employment had a statistically significant, positive immediate effect on GDP growth. Nevertheless, one structural break in the relationship between self-employment and GDP is identified, occurring in late 1940s. Thus, from the post-war period and onwards in Sweden, self-employment change did not affect GDP growth—rather, GDP growth affected self-employment growth.

In "*Investigating the impact of small* versus *large firms on economic performance of countries and industries*", *Judit Albiol-Sanchez* and *André van Stel*, following an earlier work by Audretsch et al. (2002), assume that an optimal size-class structure exists, in terms of achieving maximal economic growth rates. Using a unique data base of the EU-27 countries for the period 2002–2008 for five broad sectors of economic activity and four size-classes, the authors find empirical support, which suggests that, on average for these countries over this period, the share of micro and large firms may have been 'above optimum' (particularly in lower income EU countries), whereas the share of medium-sized firms may have been 'below optimum' (particularly in higher income EU countries). This evidence suggests that the transition from a 'managed' to an 'entrepreneurial' economy (Audretsch and Thurik 2001) has not been completed yet in all countries of the EU-27.

In "*Competitive strategies, perceived competition and firm performance of micro firms: the case of Trento*", *Svetlana Kovaleva* and *Nardo de Vries*, using longitudinal data from 2134 micro firms in Trento, Italy, explore what strategies micro firms adopt when they are faced with different levels of competition. The authors measure their preference for a cost leadership or differentiation strategy compared to the default of non-coherent strategic behavior. Their results confirm that a perceived threat of competition pushes firms to take strategic action, while a market level measure of competition has no influence on a firm's strategic behavior. A differentiation strategy is preferred by younger entrepreneurs with higher levels of education and previous entrepreneurial experience, while at the same time previous entrepreneurial experience is negatively associated with a cost leadership strategy.

Jean Bonnet, Nicolas Le Pape and *Teresa Nelson* with "*The route to high growth: Patterns of financial and operational decisions for new firms in France*" shed light on the different qualities of new-firm startups that are more or less growth-oriented. Using a longitudinal dataset on a set of firms established, continuing, and closing over the period from 2002 to 2007 in France, the authors explore how a young firm's financial policy and product market strategy may affect its growth path, as measured by employment growth. Their findings show that a small subset of new firms in France, exhibiting particular operational and financial patterns, have been at the origin of roughly 50 % of jobs created by the cohort within a 6 year period. They also find that certain entrepreneurial behaviors on the part of the founder/s are favorable for survivor firms to belong to the class of high-growth firms existing at the end of the observation.

The last chapter of part I is proposed by *Gonzalo Maldonado Guzman, Gabriela Citlalli Lopez Torres, Maria del Carmen Martinez Serna* and *Domingo Garcia Perez de Lema*. Entitled "*Innovation, Information Technology and Performance. An Examination of the Iberoamerican SMEs Context*", it examines whether innovation in Small and Medium-Sized Enterprises is a determinant of both the use and adoption of information and communication technologies and business performance. The relationship between innovation, information and communication technologies, and SMEs performance is explored for a sample of 1989 enterprises from 21 countries in Iberoamerica. Their results reveal that innovation has a positive and significant impact on both information and communication technologies use and SMEs' performance.

The papers in part II discuss links between entrepreneurship and labor market research, social heterogeneity of self-employment, social policy implications especially for entrepreneurs in old age and—finally—conceptual ideas about leadership and entrepreneurship, which center around social and political implications of economic entrepreneurship research.

Dieter Bögenhold and Andrea *Klinglmair* discuss in their chapter "*Entrepreneurship and Hybrid Self-employment*" the idea of hybrid entrepreneurship, which is a form of self-employment located between dependent and independent work. Many people counted as entrepreneurs have a further source of income, which is in dependent work: The question is if these people are primarily entrepreneurs with a bit of extra income through wage dependent work or—vice versa—if these people are primarily blue or white-collar workers with a bit of extra income through self-employment.

Andrey Shevchuk and *Denis Strebkov* in "*Heterogeneous Self-Employment and Work Values: The Evidence from Online Freelance Marketplaces*" introduce the findings of an empirical study on freelancers. The contribution gives insight into the situation of freelancers, especially engaged in digital markets, products and services. The authors develop various categories of actors with different composed portraits of work and life values.

Zulaicha Parastuty, Robert Breitenecker, Erich Schwarz and *Rainer Harms* discuss in their chapter "*Exploring the reasons and ways to exit: the entrepreneur perspective*" firm exits as form of occupational and organizational mobility. The topic is of considerable interest, since it is too often neglected compared to business entries, although births and deaths are very much related to each other. The paper distinguishes between personal-related reasons and firm-related reasons to perform an entrepreneurial exit and between different modes to operate an exit as temporary or permanent exit.

Camino Ramón-Llorens, Isabel Olmedo-Cifuentes and *Antonia Madrid-Guijarro*, with "*Well-being and Work-life Balance*", take up the topic of well-being and work-life balance and compare entrepreneurs with non-entrepreneurs. One of the results is that entrepreneurs show higher levels of job-satisfaction while non-entrepreneurs show higher levels of well-being outside the employment process.

Uwe Fachinger in his contribution "*Post-Entrepreneurs: Self-employed people in retirement*" differentiates between different life-cycle periods of entrepreneurial being. Especially this biographical perspective is too often neglected. The author discusses the case of older entrepreneurs and of those who are close to or even past the point of retirement. The guiding question is if those agents have sufficient old-age security.

Finally, *Reinhard Neck* performs a turn into a completely different perspective: His research "*The Political Entrepreneur: Deus ex Machina of Public Choice Theory?*" is led by public choice theory. The author argues that the (abstract) figure of the entrepreneur is as important in politics as in economics and business. Theoretically, the entrepreneur facilitates to foster a more dynamic analysis of the market process as a theoretical concept. However, even in this respect, more empirical data are needed.

The papers in part III of the book examine some specific relationships between entrepreneurship and its context. They refer to formal and informal institutions including culture and ethics. Entrepreneurship is here further discussed in association with the business cycle and economic downturn, education, entrepreneurial legitimization processes, social networks and compound developments.

In their chapter entitled "*Intentions and perceptions of the entrepreneurial career among Croatian students: Initial results of a longitudinal empirical study*", *Nikša Alfirević, Josef Langer, Jurica Pavičić* and *Mira Krneta* analyze the entrepreneurial intentions of the student population at the University of Split, Croatia. Exploring longitudinal data that have been collected in the specific context of a prolonged economic downturn, authors are particularly interested in linking students' intentions to their general perceptions of entrepreneurship and its social role.

In "*Fiction and Substance. Start-Up Support: An Analysis on Interaction*", *Lisa Abbenhardt, Hans Pongratz* and *Stefan Bernhard* examine the way uncertainties of future-oriented economic actions, *i.e.* starting a new business, are dealt with. They propose fictionalizing and substantiating as two practices necessary to legitimize the entrepreneurial idea, not only for the founder toward himself/herself, but for other actors, as the supporting institutions. The authors analyze how founders and supporting institutions cope with market related uncertainties while clarifying the entrepreneurial potential of the founding project for cases taking place within the implementation of "Einstiegsgeld", an instrument supporting business foundations by unemployed people.

Bernard Cadet, Alina Gomez Mejia and *Isabel Cuadrado Gordillo* propose the next chapter "*Establishing ethical values in entrepreneurial decision-making: The justification for a cognitive network*". Their contribution is dedicated to ethics in entrepreneurship. They refer to two forms of implementation of ethics: the traditional one, which is transcendental, universal and applicable in all circumstances, and a second one, which refers to some more specific and recent cases and varies with the type of activity and circumstances. The latter includes the ethics of the entrepreneurship. They analyze the entrepreneur ethics as a finalized cognitive activity entailing opposite objectives ruled by the uneasy realization of a

compromise in a context of uncertainty. Finally, authors emphasize the advantages of a change of paradigm. The sciences of complexity cover a group of properties specific to evolutionary systems, which show that entrepreneur ethics results from the activation of a cognitive network.

With her contribution entitled "*The development of entrepreneurial culture. An empirical model discussion*", *Renata Osowska* presents a model developed from empirical, qualitative research covering 20 years of analysis on the relationship between culture and entrepreneurship in Poland. It results in a comprehensive framework to describe the development of entrepreneurial culture. In this empirical model culture is understood as a set of values and beliefs held by a social group that endorse and are conducive to entrepreneurial behavior; while entrepreneurial behavior is treated as an expected outcome and narrowed down to opening the company. The model suggests that the differentiation between entrepreneurship (behavior) and entrepreneurs (who demonstrate this behavior) needs to be recognized in future research.

The chapter "*Business Angels, Social Networks, and Radical Innovation*" by *Catherine Deffains-Crapsky* and *Peter Klein* sheds a light on the financing of very early-stage innovative projects. Those innovative firms are often difficult to finance, particularly as venture capital firms have begun to focus on more mature, less risky projects. It appears that they are increasingly funded by business angels, individually or in networks. Authors describe the role of business angels and business angel networks in the US and Europe from the perspectives of entrepreneurship theory and social network theory. They question how business angel networks strengthen ties between entrepreneurs and informal investors under conditions of radical uncertainty. They also consider the links between formal and informal private equity finance, raising wider questions about the funding and performance of clusters of innovation.

Finally, with "*Micro entrepreneurship and female homework in developing countries: On the limited capacity of micro entrepreneurship as analytical term*", *Farah Naz* and *Dieter Bögenhold* investigate to what extent female homework in the developing countries may be linked to entrepreneurship. The question is of importance and refers to a broader discussion about how much the dualistic construction of work as an employee or self-employed person is able to capture the complexity of women's insertion in the market economy. The authors argue that female homeworkers, who are usually seen as lacking in entrepreneurial spirit, are perhaps more enterprising and entrepreneurial than recognized at present. They discuss the results of their analysis, challenging the current conceptualization of female homeworking and micro-entrepreneurship in connection with female informal micro-enterprises and the production process.

As editors of the book, we hope to arouse the enthusiastic interest of the readers and we wish them all an enjoyable and rewarding experience.

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The Field of Entrepreneurship Research: Some Significant Developments

Per Davidsson

Abstract

This chapter discusses significant developments in the field of entrepreneurship research. These include, but are not limited to: (a) considerable growth in volume, quality, and theory-drivenness; (b) a drift of the main emphasis from small scale and independent ownership towards newness and novelty realized through a multitude of organizational solutions; (c) interest in multiple aspects of the entrepreneurial individual beyond personality; (d) moving beyond the individuals towards teams, networks and social capital; (e) viewing entrepreneurship as a multi-level phenomenon, with increased emphasis on outcomes beyond the individual- and firm-level financial result; (f) realizing the heterogeneous, context-dependent and process nature of entrepreneurial practice, along with the challenges to generalizability and research design that follow from this. These developments, including the increased focus on theory and theoretical contributions, have served the field well. This said, the author argues that we are now at a juncture where recognizing a broader set of types of scholarly contributions would be even more beneficial.

Keywords

Entrepreneurship • Nascent • Newness • Opportunity • Process • Small business • Smallness

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1 Introduction

Knowledge creeps upon us gradually, and one of the primary consequences of confronting new knowledge is that we become more aware of the vastness of our ignorance. Therefore, as a long term insider to entrepreneurship research it is easy to grow impatient and feel that we have not come far enough, fast enough. However, such an assessment would be biased and unfair. The fact is that the field of entrepreneurship research has undergone tremendous development during the close to 30 years I have been active in this field. This development has been described elsewhere in the form of scientometric work as well as historical overviews, methods-oriented reviews, and personal reflections by key participants (e.g., Aldrich 2012; Busenitz et al. 2014; Crook et al. 2010; Jing et al. 2013; Landström et al. 2012; Meyer et al. 2012; Stewart and Cotton 2013; Teixeira 2011). Some of the key observations from these works are:

- The exponential rate of growth in the volume of research output in entrepreneurship.
- The emergence of new sub-areas of entrepreneurship research, as well as discipline-based sub-communities of entrepreneurship researchers.
- A strong drift from "empirical fact finding" and "mapping of the territory" to more theory-driven and/or else more sophisticated, phenomenon-driven research.
- Increased methodological breadth and sophistication pertaining to all types of data used and all stages of the research process, from data collection through analysis.
- A dramatic increase in the number of "high tier" specialty journals in the field, as well as increased author- and editorial representation in major "mainstream" journals.
- The globalization of entrepreneurship research in leading outlets, visible in the origin and current affiliation of authors, reviewers and editors as well as the data used in the research.

The annual output of published scholarly works on entrepreneurship is now likely to be well in excess of 1000, and with over 3000 members the Entrepreneurship Division (ENT) has become one of the largest within the Academy of Management. When I first entered this (then barely existing) field of research, it was possible to have the ambition to more or less "know the literature"—meaning the entire body of work on entrepreneurship across levels of analysis and disciplinary bases. Now, it is difficult to keep pace with a single niche thereof. In 2001, we marveled at the fact that we could find "no less than twelve" studies on Entrepreneurial Orientation (EO) (Brown et al. 2001). Less than a decade later, when I served as Program Chair for ENT I received 39 EO-focused submissions to this single conference. And it gets "worse". I have recently extended Short et al. (2010) review of research on "entrepreneurial opportunities" (Davidsson 2015). They identified 68 such works in 16 leading journals. Only seven of these were published

before the year 2000 (incidentally meaning before Shane and Venkataraman 2000). After the publication of Short et al. (2010) the same journals have published more than 150 articles using "opportunity" in relevant ways in the title, abstract, or keywords (same criteria as Short et al.).

One consequence of this development is that there now exists a wealth of research-based knowledge about entrepreneurial phenomena, if we only care to absorb it and apply it. Another consequence is that doing what I am about to do—trying to summarize some significant developments in a few pages—has become an increasingly impossible task. I am not going to worry about that. Instead, below I do what many entrepreneurs do rather than contemplating the impossibility of the task they are about to undertake: Just do it! Although my selection of observations is admittedly biased and I have no room to go into any detail in this brief essay, I will provide pointers and references from which I believe readers can benefit.

2 Entrepreneurship Is Not Primarily About Smallness, but About Newness

In the early research there was very significant overlap between "entrepreneurship research" and "small business research". Over time there has been increasing realization that most established small firms are not particularly innovative or growth-oriented, and that it is the entry of new start-ups, and their early growth, that create the job creation surplus initially associated with small firms (Birch 1979, 1987). This insight has also turned some early critics of the "small firms are important" argument into major advocates for the importance of new entrants (cf. Davis et al. 1996; Haltiwanger et al. 2013). We have also seen a drift from "small business policy" to "entrepreneurship policy" (Audretsch et al. 2007; Lundström and Stevenson 2005) although this important distinction is yet to be noticed by policy makers in some countries.

The declining overlap with small business research has been replaced by an increasing—and sometimes quite orchestrated—overlap with the field of Strategy (Baker and Pollock 2007; Hitt et al. 2002, 2011) as well as broadened acceptance of the notion of Corporate Entrepreneurship (Corbett et al. 2013; Phan et al. 2009). Clearly, if entrepreneurship means introducing new economic activities to the marketplace (Wiklund et al. 2011) then there is no monopoly for independent and/or small and/or new businesses to execute it. Logically, the overlap with the field of Innovation has also increased, although we are yet to see closer collaboration across this historically defined border. This said, the "E-words" are certainly starting to feature more prominently in outlets like *Journal of Product Innovation Management* (e.g. Corbett et al. 2013; Hong et al. 2013).

3 Beyond Entrepreneurial Personality

It is not true that early entrepreneurship research was entirely focused on the personality of entrepreneurs. However, there is some truth to the notion that the research reflected an underlying assumption that the key to understanding entrepreneurship lay in the character of the presumably very special individuals who are "entrepreneurs" (Brockhaus 1982; Hornaday 1982; Kilby 1971). After Gartner's (1988) attack and some disappointing results, research on the individual level has broadened to capture *human capital* (Unger et al. 2009) including *prior knowledge* (Gruber et al. 2013; Shane 2000); *entrepreneurial cognition* (Grégoire et al. 2011), the role of *emotions* (Cardon et al. 2012; Welpe et al. 2012) and patterns of *behavior* (Gartner 1988; Liao and Welsch 2008; Lichtenstein et al. 2007) including emerging theories of *bricolage* (Baker and Nelson 2005) and *effectuation* (Sarasvathy 2001, 2008). Interestingly, based on better research and meta-analytic evidence there has been something of a rebound for personality-based explanations (Brandstätter 2011; Rauch and Frese 2007) whereas it seems to be too early to determine what we should make of the claims for genetic bases for entrepreneurial behavior (Johnson 2009; Nicolaou et al. 2011; Van der Loos et al. 2011).

4 Beyond the Individual

I would argue that one of the most important insights about entrepreneurship that has become increasingly accepted is that it is a team sport or a social game rather than the realm of lone wolves conquering the world on their own. Consequently, we have seen rapidly increasing research on *entrepreneurial teams* (Klotz et al. 2014), *social capital* (Gedajlovic et al. 2013), and *networking* (Hoang and Antoncic 2003; Newbert et al. 2013). Well, some pioneers admittedly saw the importance of networking quite some time ago (Birley 1985; Johannisson 1986), but it is arguably post-2000 that research has looked beyond the individual more regularly. Another important development along these lines is the notion of the *individual-opportunity nexus* (Eckhardt and Shane 2010; Shane 2003; Shane and Venkataraman 2000). This idea can potentially facilitate an important move away from overly person-focused explanations of outcomes (Gartner 1988; Ross 1977) and gear more research effort towards the early stages of new development of new economic activity, where entrepreneurship can arguably make its most important contributions to the broader fields of economic and organizational research. However, progress on many aspects of "opportunities" and "the nexus" has been disappointing (Davidsson 2015). My conclusion is that this is largely due to inherent problems with the (i.e., any) notion of "opportunity". Although the notion of "opportunity" may be intuitively appealing, a deeper analysis demonstrates that it is too complex and elusive to be useful for many scholarly purposes. Elsewhere, I argue that instead of engaging in vague and inconsistent arguments about the role of "opportunities" we should capture the same phenomena, and realize the potential of

the nexus idea, by using a more workable set of constructs: External Enablers, New Venture Ideas, and Opportunity Confidence (Davidsson 2015).

5 Entrepreneurship Is a Multi-level Phenomenon

Another reaction to the limited success in early individual level research was to suggest moving to a more aggregate level of analysis—from "traits" to "rates" of entrepreneurship (Aldrich and Wiedenmayer 1993). However, although aggregate level research typically achieved more explanatory power (e.g., Reynolds et al. 1994) a general migration to the industry- or region level never occurred; the firm and the individual remain the most popular levels of analysis (Brush et al. 2008; Davidsson and Wiklund 2001). This said, aggregate levels of analysis are the more natural focus for most sociologists and economists, and important contributions continue to be made by the growing sub-communities of entrepreneurship scholars from these disciplines (Bögenhold et al. 2014; Parker 2005).

Another aspect of entrepreneurship's multi-level nature shines through in the fact that even those researchers who show a main interest in individual- and firm-level *explanation*s for entrepreneurial behavior take a keen interest in how entrepreneurship can lead to social level *effects* (Davidsson 2004: 13–15). In short, the interest does not stop at how some individuals can enrich themselves through creative, entrepreneurial endeavors. In the last decade this interest in societal level effects has increasingly moved beyond traditional concerns for job creation, innovation and productivity (Van Praag and Versloot 2007). Sub-communities instead show a keen interest in entrepreneurship as a means to respond to social needs, achieve sustainable development, and deal with poverty alleviation in developing countries (Mair and Marti 2006; McMullen 2011; Shepherd and Patzelt 2011).

A third response to the increasing acknowledgement of entrepreneurship as a multi-level phenomenon (Davidsson and Wiklund 2001) has been to embrace theorizing and methods that explicitly recognizes processes on multiple levels, learning from a long standing tradition in research on organizational behavior (Kwon and Arenius 2010; Shepherd 2011).

6 Entrepreneurship Is a Heterogeneous, Context-Dependent Phenomenon, Dominated by a "Modest Majority"

One of the great innovations and success stories of the past couple of decades is the research on "nascent entrepreneurs[hip]" that has emanated from two major research programs orchestrated by Professor Paul Reynolds: The Global Entrepreneurship Monitor (GEM), and the Panel Study of Entrepreneurial Dynamics (PSED), including its international counterpart studies (Álvarez et al. 2014; Amorós et al. 2013; Bergmann et al. 2014; Davidsson 2005; Davidsson and Gordon

2012; Davidsson et al. 2011; Frid 2013; Reynolds 2005). Prior to these initiatives, very little was known about the prevalence and nature of pre-operational start-up attempts; how they vary across countries and over time; what proportion of nascent ventures are started by teams; how these teams are composed; how many ever become operational businesses and how long that process takes; how the process evolves over time; what resources are required to successfully complete it; where these resources are sourced, and many other questions that have been addressed in the well over 200 journal articles that use these data. Nascent entrepreneurship research has yielded an enormous trove of new insights. Although much of this knowledge remains tentative at this point, some of it has arguably become common knowledge among scholars as well as many policy makers and support organizations.

The "nascent entrepreneurs[hip]" research has also brought insights into the extreme heterogeneity of any random sample of nascent ventures. In short, people try to start varying types of new ventures for a broad set of different reasons, and they do so within environments which are also highly variable. The ventures are unequally far developed when first captured; continue the journey at unequal pace, and use different types and amounts of resources. Despite this variance, it has become clear that a random sample of nascent ventures is dominated by a "modest majority" (Davidsson and Gordon 2012) with limited ambitions, resources and novelty. Very few will ever embark on a trajectory of growth (Davidsson et al. 2010); attract venture capital (Rosenbusch et al. 2013), or become candidates for an IPO (Daily et al. 2003).

This heterogeneity and modest-majority dominance is a challenge for researchers. Although the sheer number of modest start-ups make them add up to considerable economic effects, their dominance mean that we risk learning very little about the "high end" of entrepreneurship through the study of random samples. Further, samples with excessive variance along many dimensions make a poor context for developing and testing strong theory. Therefore, future research should employ the strengths of the GEM- and PSED approaches to more select, and more homogeneous, samples of emerging businesses.

7 Entrepreneurship Is a Complex Process, Often of Long Duration

Above, I have touched upon two major streams in entrepreneurship research during the past couple of decades: nascent entrepreneurs[hip] research, and research on "entrepreneurial opportunities". Important strands of both acknowledge that new venture creation is an iterative and interactive process, often of high complexity and long duration (e.g., Liao and Welsch 2008; Menzies et al. 2006; Rotefoss and Kolvereid 2005, and Ardichvili et al. 2003; Dimov 2007; Wood and McKinley 2010, respectively). The notion of entrepreneurship as process also features prominently in unrelated attempts to conceptualize entrepreneurship (Bhave 1994; McMullen and Dimov 2013; Sarasvathy 2001; Venkataraman et al. 2012).

McMullen and Dimov (2013) seem pessimistic that quantitative research based on large samples will be able to disentangle the complexities of such processes, and early attempts seemed to support this view. However, attempts that either focus on a smaller set of process milestones (Delmar and Shane 2004; Hak et al. 2013; Shane and Delmar 2004) or apply higher levels of abstraction (Gordon 2012; Lichtenstein et al. 2007) give reason to adopt a more optimistic view.

8 A Look Ahead

Nothing is as hard to predict as the future. Some authors have recently developed their thoughts about where entrepreneurship research is likely to go next, and I find little reason to disagree (Wiklund et al. 2011; Zahra and Wright 2011). I believe current trends will continue for the foreseeable future. That is, we will likely see continued increase in discipline-based entrepreneurship research; increased methodological sophistication (on some dimensions); continued emphasis on early-stage development; sensitivity to levels-of-analysis, and regarding entrepreneurship as a process. Sensitivity to context appears to be on the increase (George 2014; Welter 2011; Zahra and Wright 2011). New methods approaches, facilitated by technological developments, are also likely (Aguinis and Lawal 2012; Uy et al. 2010). However, there is one trend that I think—and hope—will be broken, or at least level off. This is the emphasis on "theoretical contribution" that currently signifies at least the entrepreneurship research that is closely affiliated with the fields of strategy, organization, and management. There is no doubt that some 15 years ago, entrepreneurship was in dire need of a stronger theoretical focus, and it is still the case that the field has a long way to go before we have solid theoretical foundations covering most of the entrepreneurship domain. However, development of solid theory is not likely to happen through the emphasis on rather piecemeal "theoretical contributions" from each and every empirical paper at the expense of interest in potentially important empirical observations which still lack theoretical explanation (Hambrick 2007; Locke 2007). In view of this, the establishment of new journals like *Academy of Management Discovery* and *JBV Insight* are promising signs of the importance of recognizing a broader set of contributions from research. Evidence without theory may not be worth much in the long run, but the same is surely true for theory without convincing evidence.

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Part II

Entrepreneurial Performance and Growth

Linking Entrepreneurship and Economic Growth in Sweden, 1850–2000

Marcus Box, Xiang Lin, and Karl Gratzer

Abstract

Recent developments in entrepreneurship suggest a causal link between entrepreneurial activity and economic growth: entrepreneurship precedes economic growth. A positive effect from entrepreneurship on economic development in advanced, innovation-driven economies in the most recent decades is often maintained. Self-employment is one of the most common indicators of entrepreneurship. The present study uses very long series of non-interrupted data on self-employment in Sweden (1850–2000). It analyzes the relationship between variations in self-employment and economic growth. For the entire period, variations in self-employment had a significant, instantaneous positive correlation with GDP growth. However, no causal relationship could be discovered: variations in self-employment did not (Granger) cause GDP growth.

We discovered a structural break in GDP growth as early as in the year of 1948. Up until 1948, (Granger) causality between self-employment and GDP could not be established for any direction. For the other segment (1949–2000), GDP growth (Granger) caused self-employment growth, but not the other way around. For the period 1949–2000, but not for the previous period, self-employment lagged with respect to GDP growth. Consequently, GDP growth preceded self-employment growth, but self-employment growth did not precede

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GDP growth. Given that self-employment is a suitable indicator, the empirical results in this study are, in several respects, in disagreement with dominating assumptions in mainstream research.

Keywords
Entrepreneurship • Self-employment • Economic growth • Granger causality • Sweden

1 Introduction

The relationship between entrepreneurship and economic growth and development has received vast academic and political attention. A dominating paradigm views entrepreneurship as an endogenous component of economic growth, maintaining a positive, causal relationship between entrepreneurial activity and growth (Braunerhjelm et al. 2010). This positive relationship, it is claimed, has been empirically verified across a wide spectrum—from the enterprise, the industry, the region, to the country (Thurik and Wennekers 2004). Within this paradigm, various models have evolved, essentially suggesting two closely related hypotheses. First, since the 1960s and 1970s, several developed (Western) economies have structurally shifted from 'managed' to 'entrepreneurial' economies. In these economies, entrepreneurship may historically have played a less important role; however, in our time, entrepreneurship is one key factor for economic growth. The second hypothesis is that the level of economic development determines the importance of entrepreneurship for economic growth: in low-income economies, entrepreneurship may have small effects; in advanced, innovation-driven economies, entrepreneurship has a positive effect on economic growth (e.g., Audretsch and Thurik 1997, 2001; Acs and Szerb 2009; Wennekers et al. 2010).

Using the case of Sweden 1850–2000, the specific aim of our study is to test these assumptions. We ask if there is a causal relationship between variations in entrepreneurship and economic growth, and, if this is the case, whether this causal relationship has shifted over time. From the mid-nineteenth century and on, Sweden has transformed from an agricultural to an industrialized economy, into an advanced, innovation-driven economy. Therefore, it could be expected a priori that Sweden would follow the patterns proposed by recent theory and models.

A substantial number of empirical studies maintain support for this mainstream paradigm, and nearly all of them utilize data on either self-employment or on business ownership as indicators of entrepreneurship. In line with these studies, we employ data on self-employment in Sweden, 1850–2000 (Edvinsson 2005). Self-employment is one of the most commonly used indicators for entrepreneurship, but it may not be ideal or even appropriate. Yet, the considerable advantage with the data in our study is that it covers a very long period. Even if research claims that entrepreneurship has increased in most developed economies during the past few decades (Carree et al. 2007), it is often difficult to determine changes in

entrepreneurship over longer periods: most available data on entrepreneurship generally covers, at best, the period from the 1970s and onwards and several previous analyses are often cross-sectional or have consisted of rather short panels. Long series may reveal patterns and relationships that cannot be detected with short observation periods, and they are ideal for testing previous assumptions and theories.[1] Finally, even though much empirical research corroborates the assumptions in mainstream models, a number of individual countries deviate from them (Congregado et al. 2012; Koellinger and Thurik 2012).

2 Background and Theory

Since the early eighteenth century, entrepreneurship and entrepreneurs have been perceived as essential driving forces for economic transformation and growth. Entrepreneurship is multidisciplinary, revealing significant contributions from several academic fields. One way of classifying the multitude of economic theories that have evolved is to divide them according to the *function* of entrepreneurship (Henrekson and Stenkula 2007). We can distinguish theories that focus on the entrepreneur as an innovator (Schumpeter 1911), as an arbitrator (Kirzner 1973, 1999), and as a risk-taker and decision-maker (Knight 1921). A fourth function is the coordinator (Say 1816). Newer theoretical contributions are often variants or analytical refinements of these functions; several later theorists have chosen a more or less eclectic approach in the attempt to combine the various functions of entrepreneurship. In these, diametrically conflicting theories are frequently mixed (e.g., Baumol 1993; Casson 1982; Shane 2003). An eclectic definition represents a blend of the entrepreneurial functions, which Cantillon, Schumpeter, Knight and Kirzner regard as the quintessential features of entrepreneurship. In such definitions, the fact that diametrically opposing and often incompatible perspectives are mixed is seldom discussed.[2] The definition of entrepreneurship is one of the most difficult and problematical aspects of the theory. The intellectual borrowing of concepts and theories from various schools of thought has been both beneficial and problematic. While it has contributed to improve and advance research, it has also

[1] Furthermore, over the past 200 years—and in contrast to several other countries—Sweden has not been directly affected by catastrophes, severe civil conflict, wars, or foreign occupation that may interrupt or infer statistical series.

[2] For instance, Schumpeter regarded the entrepreneur as an agent, or as a group of agents that introduced innovations. Schumpeter's entrepreneurs create disequilibria, while Kirzner's entrepreneurs are arbitrators that establish market equilibrium. For Knight, all small business owners are entrepreneurs. In disagreement with Knight, the Schumpeterian entrepreneur is not a risk taker or owner. In his late works, Schumpeter defines the entrepreneur as an economic function, while Kirzner personalizes the entrepreneurs into individuals endowed with the ability to identify opportunities that others cannot. Entrepreneurship in the Kirznerian sense does not require innovation.

created the potential for a cacophony of concepts, theories and empirical results (Landström and Lohrke 2010).

Entrepreneurship is also a significant economic policy agenda today but the aspirations for improving the conditions for entrepreneurship have often been restrained by limited and imprecise information on how entrepreneurship is measured—as well as by imperfect knowledge of the factors affecting entrepreneurship (Ahmad and Hoffman 2008; Lunati et al. 2010; Lundström and Sundin 2008). The development of measures is a balance between what is theoretically desirable and what is possible in practice. The most common measurements of entrepreneurship have been stocks and rates measures of the number of self-employed persons, of (new) small and medium enterprises (SMEs), or of attitudes towards entrepreneurship. There is substantial agreement that this 'mainstream view' only captures certain dimensions of the concept; the continual attention given to the problem in the OECD and the EU, as well as in international projects such as the Global Entrepreneurship Monitor (GEM), bear witness to this constant process.

Research on variations in entrepreneurship—and in self-employment—has received attention from several scholars in the social sciences.[3] Most empirical research in recent decades has used self-employment or business ownership data (or variations thereof) as national indicators of entrepreneurship. A substantial body of research has employed data from large projects that have produced harmonized series over entrepreneurship, most notably Compendia and the GEM database. Nowadays, these are the dominating sources for international analyses of entrepreneurship.[4] The considerable advantage is that entrepreneurship is relatively 'simple' to measure. A disadvantage is that they may not capture transformation, innovation, and renewal among established firms, or do not necessarily represent indicators of a dynamic economy (e.g., Congregado et al. 2012). This forces us to consider the validity of definitions, as well as what consequences that choice of theory and definitions may have for conclusions in both policy and research.

2.1 Entrepreneurship and Economic Growth: The Mainstream View

The mainstream view in entrepreneurship research assumes a link from the individual level, through the firm, up to the macro level, in which entrepreneurship is viewed as an endogenous component of economic growth (Braunerhjelm

[3] Economists and sociologists have also studied self-employment in relation to unemployment, changes in social security, or taxes (e.g. Blau 1987; Bruce and Mohsin 2006; Fölster 2001; Steinmetz and Wright 1989; Staber and Bögenhold 1993; Stenkula 2012).

[4] Compendia records OECD data on business ownership from the 1970s (Van Stel 2005). GEM is survey-based and has produced shorter cross-country time series (starting in 1999) (see Bosma and Levie 2010). It has been noted that the method of harmonizing data can be somewhat simplistic and that it may produce incorrect figures (Bjuggren et al. 2010).

et al. 2010). From a discourse perspective, this theory creates the conception that venturing activity is system-changing per se, thus carrying transformation capacity in the economy. Potentially growing and innovative firms are perceived as embedded within the total number of start-ups—therefore, while it is acknowledged that most new firms are not innovative and will not grow and create new jobs, a smaller share of them will. For that reason, if entrepreneurship increases, so will the number of those firms that are 'entrepreneurial' and that qualitatively contribute to economic change (Wennekers and Thurik 1999; Carree and Thurik 2010).

In this mainstream view, the (causal) link between entrepreneurial activity and macroeconomic development is considered as dependent on both time—that is, on 'history'—and on the level of economic development. First, an established hypothesis is that modern capitalist economies shifted from 'managed' to 'entrepreneurial' economies in the 1970s and 1980s (see, in particular, Audretsch and Thurik 1997, 2000, 2001). Major global changes in both supply and demand conditions are identified as causes for this transition (Carree and Thurik 2010).[5] Different from the previous era of the 'managed' economy, entrepreneurship has today become increasingly important for economic growth and renewal. This 'historical' view principally maintains that entrepreneurship has played different roles over time: while entrepreneurship may have varied counter-cyclically to economic growth in the 'managed' post-war economy, it has become an important engine for economic growth during the past three to four decades in countries that have shifted to entrepreneurial economies.[6]

Second, 'stages of economic development'-models represent one closely related hypothesis. These models represent various relationships between entrepreneurship and the level of economic development across countries (e.g., Acs and Szerb 2009; Wennekers et al. 2010), assuming that entrepreneurship varies with the level of economic development.[7] Even if the causal directions may be imprecise, this hypothesis proposes a minor or even negative impact of entrepreneurship on economic growth for low-income or newly industrialized economies, while there may be positive effects in advanced economies. As countries move from one stage to another, the level of—as well as the nature of—entrepreneurship changes: the positive influence of entrepreneurship on economic development increases in advanced, innovation-driven (Western) economies, that is, in 'entrepreneurial'

[5] For a critical view of the concept of the entrepreneurial economy, see Parker (2001).

[6] From a different angle, sociologists have suggested that the observed increase in self-employment from the 1970s in developed economies may be a structural response to declining opportunities for good jobs in the industrial sector rather than, as in earlier times, a cyclical response to unemployment (Steinmetz and Wright 1989; Bögenhold and Staber 1991).

[7] Within the framework of the GEM-project, an S-shaped model founded in Porter's typology of factor-, efficiency-, and innovation-driven economies has evolved (Acs and Szerb 2009; Bosma et al. 2008). Related lines of thought are found in a U-shaped stage model in which entrepreneurship is high in low-income countries, lower in middle-income countries (where economies of scale increase), and high in advanced economies (Wennekers et al. 2010).

economies. Here, entrepreneurship is one important driving force for economic growth.

Several studies claim to confirm these hypotheses. Recent research, mostly covering the development from the 1970s and onwards or even shorter periods, has generally used country panels from Compendia or GEM. Carree et al. (2002, 2007) investigated the long-term equilibrium relationship between the level of entrepreneurship and the stage of economic development—and whether deviations from an equilibrium rate of business ownership leads to, or 'causes', lower GDP levels. Their cross-country panel analyses showed a U- or L-shaped equilibrium rate: a rate below the equilibrium level impedes economic growth, while levels above equilibrium do not seem to lead to lower levels of GDP. A similar relationship was also confirmed by Wennekers et al. (2005). These results therefore indicate that entrepreneurship is a driving force for economic growth in advanced economies. Braunerhjelm et al. (2010), studying several OECD countries 1981–2002 found that, in contrast to the 1980s, self-employment activities became more important from the early 1990s. Parker et al. (2012) draw similar conclusions, from the relationship between self-employment and economic change in the UK, 1978–2010. For the entire period, a pro-cyclical relationship was discovered, showing causal relationships running from self-employment to macroeconomic output, but not the other way around. Parker et al. (2012) found structural breaks: in 1978–1993, the causality ran *from* variations in economic output *to* self-employment variations. For the most recent period, 1993–2010, self-employment both caused and was caused by output. Thus, these two studies corroborate the 'historical' hypothesis of an increasing impact from entrepreneurship in the most recent decades.

In line with these studies, several other empirical studies have generally found that in the past few decades, changes in entrepreneurial activity affect and anticipate macroeconomic growth, or that they are indicators of business cycle fluctuations (Carree and Thurik 2008; Hartog et al. 2010; Thessensohn and Thurik 2012; Van Stel et al. 2005). Koellinger and Thurik (2012) found that changes in entrepreneurial activity were leading the global business cycle. However, this was not apparent on a country-to-country basis and only a small share—7 out of 22 countries—confirmed the assumption. Comparing changes in the USA and Spain 1987–2008, Congregado et al. (2012) discovered divergent patterns: for Spain, business cycle output variations significantly affected future rates of entrepreneurship. This could however not be detected for the US. These findings are in line with studies that either maintain that periods of macroeconomic instability, slow growth, or high unemployment correspond to rising levels of self-employment (Blanchflower 2000; Lindh and Ohlsson 1998) or that macroeconomic growth affects variation in entrepreneurship (e.g., Shane 1996). In conclusion, past empirical results often find a positive impact from entrepreneurship, particularly during the most recent decades. However, analyses focusing on individual countries often reveal inconsistent results that do not correspond to recent cross-country panel studies.

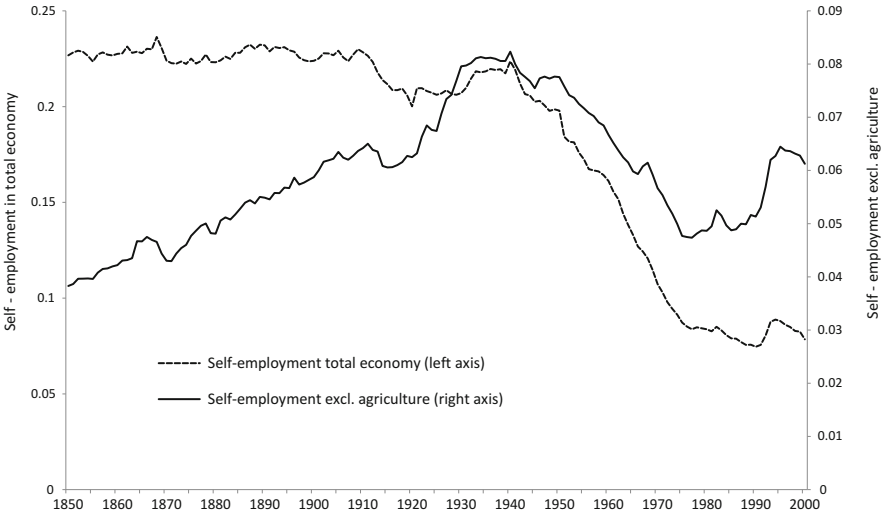
3 The Growth, Decline and Rise of Self-Employment in Sweden, 1850–2000

In the very long term, and mainly due to the constantly decreasing share of the agricultural sector, it is possible to identify a continuous fall in self-employment in a large number of today's developed economies (Wennekers et al. 2010). A sharp decline, followed by a subsequent revival of self-employment, can also be identified for several developed economies from the end of World War II. With some exceptions, self-employment rates fell sharply. This trend was reversed from the 1970/80s and onwards (Blau 1987; Bögenhold and Staber 1991). Data on non-incorporated self-employment in Sweden for the period 1850–2000 (Edvinsson 2005) shows that the development in Sweden fits quite well with the international picture (Fig. 1). The ratio of self-employment (the number of self-employed individuals in relation to the total workforce) in the entire economy fell sharply from the 1940s onwards. This was mainly due the sharp decline in self-employment activity in the agricultural sector (*Self-employment total economy*, Fig. 1). Non-agricultural self-employment (*Self-employment excl. agriculture*, Fig. 1) shows nearly identical patterns, particularly as concerns the most recent decades.

From 1850 up to 1940, self-employment doubled. There was a larger fall during the years preceding as well as during World War I, but a fast increase in the interwar years. Self-employment in the non-agricultural sector grew throughout the entire interwar-period (while self-employment in agriculture fell throughout the entire 1920s). Non-agricultural self-employment peaked in the early 1940s, and fell during World War II. With some variation, it basically continued to diminish during the following three to four decades. This tendency was halted in the latter half of the 1970s, since when self-employment has, on average, grown. In particular, it rose extensively from the 1990s onwards.

Although there are indications of a slight reversal from the mid-1990s, it can be established that at the end of the twentieth century, the rate of self-employment was higher than it had been for nearly 40 years. What can explain this development? Previous research has observed that variations in self-employment appear to be the inverse of the general macroeconomic development (e.g., Blanchflower 2000; Lindh and Ohlsson 1998).[8] Furthermore, previous research has also claimed that major (global) changes in several supply and demand conditions have led to an increase in entrepreneurship in most economies during the most recent decades (Carree and Thurik 2010). The development of self-employment in Sweden may, of course, reflect these changes. However, the aim of this study is to test established

[8] From a visual inspection of Fig. 1 this observation seems partially reasonable. The Swedish postwar-period exhibited a very long stage of high macroeconomic growth, a time during which self-employment fell sharply. The years from the early 1970s were characterized by slower economic growth and crises. The relative take-off in self-employment in the early 1990s also corresponds to the onset of the economic depression. When the economy recovered in the second half of the last decade of the century, self-employment apparently fell again. For a description of the Swedish economy, see Schön (2010).



Source: Edvinsson (2005).

Fig. 1 Self-employment ratio in Sweden, 1850–2000. Self-employment in the total economy (*left axis*) and non-agricultural self-employment (*right axis*). *Source*: Edvinsson (2005)

hypotheses in recent entrepreneurship research that maintain a causal relationship between entrepreneurship and economic growth.

4 Methodology

Our study employs a vector autoregressive (VAR) model to implement Granger causality tests. We take into consideration the possibility of structural breaks as in previous studies (e.g., Carree and Thurik 2010; Parker et al. 2012). The relationship between the two growth rates series GGDP and GSE could vary according to changes in the economic structure over time. Ignoring structural breaks could lead to unstable parameters in characterizing the relationship between GGDP and GSE.

4.1 Structural Breaks

The test is based on the simple regression model:

$$GGDP_t = \alpha + \beta^* GSE_t + u_t \quad (1)$$

In detecting structural breaks, a prior condition is that the time series under investigation should be stationary. We adopt the Augmented Dickey-Fuller (ADF) unit-root test, based on generalized least squares proposed by Elliott

et al. (1996), which offers greater power for non-zero and trended deterministic components for both series of growth rates. After estimating Eq. (1) based on our full sample period (1851–2000), a standard CUSUM test, a diagnostics test for the stability of parameters, is implemented. When there is a sign of significant shifts in parameters in Eq. (1), the multiple-breakpoints approach, developed by Bai and Perron (2003), is employed. The idea is to divide the sample period into several $(m+1)$ corresponding segments. The *rss*, residual sum of squares, can be defined as the sum of individual *rss* (i), the *rss* in the ith segment, accordingly:

$$rss\,(i_1,\ldots,i_{\mathrm{m}+1}) \;=\; \sum\nolimits_{i=1}^{m+1} rss\,(i) \tag{2}$$

The date (year) of breaks can then be identified by[9]

$$(i_1,\ldots,i_{\mathrm{m}}) = \mathrm{argmin}_{(i1,\ldots,i\mathrm{m})} rss\,(i_1,\ldots,i_{\mathrm{m}+1}) \tag{3}$$

4.2 Granger Causality Tests

The present work studies how current GGDP and GSE are correlated with past values of GSE and GGDP, respectively. This is exactly the idea of Granger causality (Granger 1969), which tests whether additional historical information, the lags of a variable, would improve the predictive power of another variable. A stationary variable (Y) is referred to 'Granger cause' another stationary variable, X, if 'historical' data of the former variable (Y) improves the prediction of X that is beyond the information included in the 'historical' data of X. Granger causality is different from the causality notion in any 'true' sense, but the procedure will provide additional information on the relationship. Granger causality can be tested via a VAR model. Our VAR model is formulated on each segment according to the identified structural break(s).

4.3 Granger Causality in the Frequency Domain

The Granger causality discussed above cannot handle causality at different frequencies, for instance causality at the typical business cycle frequency, the long-run causality at a low frequency, or the short-run causality at a high frequency, etc. Granger causality in the frequency domain makes it possible to establish whether predictive power is concentrated at quickly or slowly fluctuating components. Granger (1969), Geweke (1982) and Hosoya (1991) develop a method for Granger causality tests in the frequency domain. Breitung and Candelon (2006)

[9] This dating approach is according to the assumption that the number of breaks, m, is known. Since there exists no prior knowledge of m, we shall first determine the value of m. To determine a reasonable m, we specify different models with different possible m; for instance, we set $m = 0$, 1, 2, …, M. M will be determined based on the associated model that minimizes BIC.

largely simplify the testing procedure and we adopt their methodology in our study. We demonstrate the testing hypotheses based on the bivariate VAR model of GGDP and GSE. According to Breitung and Candelon (2006), the null of no causality of GGDP by GSE can be tested by the linear restrictions

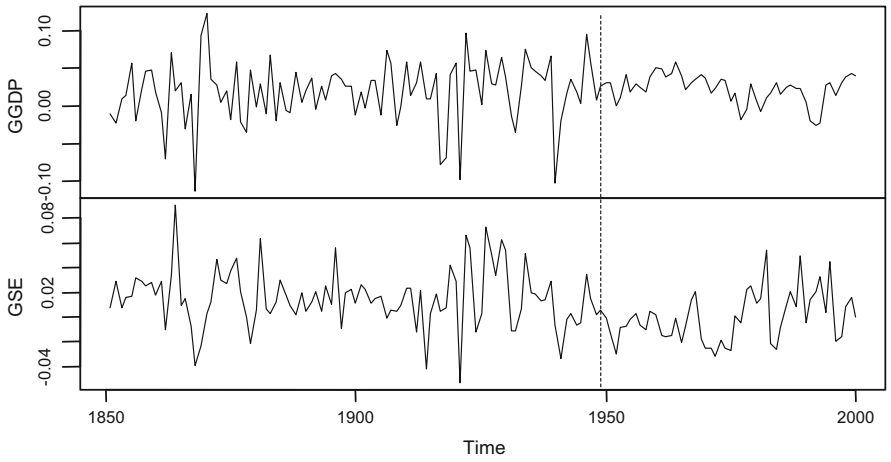
$$\begin{aligned} \gamma_1 \cos(\omega) + \gamma_2 \cos(2\omega) + \cdots + \gamma_k \cos(k\omega) = 0 \\ \gamma_1 \sin(\omega) + \gamma_2 \sin(2\omega) + \cdots + \gamma_k \sin(k\omega) = 0 \end{aligned} \tag{4}$$

where ω is frequency in (0,π). *k* is the number of lags, which can be determined according to AIC or BIC. It should be noted that in order to capture the feature associated with Granger causality in the frequency domain, *k* needs to be at least 3. Similarly, the null of no causality of GSE by GGDP can be tested by the linear restrictions

$$\begin{aligned} \theta_1 \cos(\omega) + \theta_2 \cos(2\omega) + \cdots + \theta_k \cos(k\omega) = 0 \\ \theta_1 \sin(\omega) + \theta_2 \sin(2\omega) + \cdots + \theta_k \sin(k\omega) = 0. \end{aligned} \tag{5}$$

5 The Causal Link: Does Entrepreneurship Affect Economic Growth?

In this section we analyze the causal relationship between self-employment growth (GSE) and GDP growth (GGDP) in Sweden from 1850 to 2000, calculated from the levels of corresponding variables in Edvinsson (2005). The two growth rates series are plotted in Fig. 2.



Note: the vertical dashed line indicates the time point of the break (1948).

Fig. 2 Growth of self-employment (GSE) and GDP (GGDP). *Note*: the *vertical dashed line* indicates the time point of the break (1948)

Table 1 Unit-root test

	N of lags	Tau	p-Value
GSE	2	−4.99654	7.599e-007
GGDP	3	−3.21379	0.00128
SE	9[a]	−2.11255	0.5382
GDP	10[a]	−0.23212	0.9924

The numbers of lags are optimally determined, given the maximum lags of 4 for the growth rates and 12 for the levels, respectively
[a]The time trend is included

5.1 Unit-Root Tests

The results of the unit-root test, the generalized-least-squared ADF, are reported in Table 1. We conclude that both GDP and SE are $I(1)$ processes.

5.2 Structural Breaks and the Relationship Between GSE and GGDP

In order to identify structural breaks, we estimate Eq. (1) for the whole sample period, 1851–2000, by implementing OLS. The result is reported in the first column of Table 2. Both α and β are significant and the positive slope $\beta = 0.3886$ indicates that a 0.39 percentage point increase in GDP growth is associated with a 1 percentage point positive growth rate in self-employment. However, and crucially, the parameters are not stable according to the CUSUM test. Then, we allow that the number of breaks could be 0, 1, 2, 3, 4, and 5. The associated BICs are presented in Fig. 3. Both 'no break' and 'one break' minimize the BIC. Since the current analysis is based on 'no break' and fails to pass the CUSUM test, we accept one break point, $m = 1$. The year of 1948 is identified, and a dashed vertical line indicating this year is added in Fig. 2. As can be observed, the pattern of GGDP clearly changes from 1949, indicating a smoother, less volatile pattern as compared to the period 1851–1948.

By taking this structural break into consideration, the model (1) is extended by including two dummy variables, D1 and D2. The result of the extended model is reported in the last two columns of Table 2. First of all, it can be observed that the extended model now passes the CUSUM test. In addition, this model fits the data more closely indicated by a much higher R-squared (0.07 and 0.16, respectively) and a highly significant F-statistics. But the problem of heteroskedasticity has not been improved. For this reason, robust standard errors are used. Moreover, the intercept in the period 1851–1948 is insignificant, while the slope is highly significant. This indicates a significant and instantaneous correlation between GSE and GGDP.

However, such a significant correlation disappears in the period of 1949–2000: although the intercept turns out to be significant, the slope in that segment is no longer significant. The significance of the changes is tested and reported in Table 3,

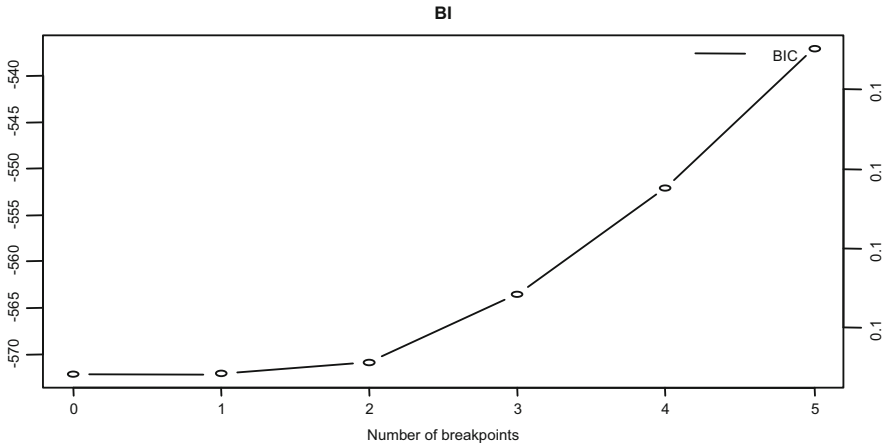
Table 2 Regression results: growth of GDP as dependent variable

	1851–2000	1851–1948	1949–2000
Intercept	0.0161*** (0.0036)[a]	0.0076 (0.0051)[a]	0.2249*** (0.0036)[a]
Growth of SE	0.3886*** (0.1510)[a]	0.7099*** (0.1782)[a]	−0.2060 (0.1321)[a]
R^2	0.07	0.16	
F	6.6193** (0.011)	28.498*** (1.45e-14)	
$X^2_{SC}(4)$	0.3948 (0.812)	1.0793 (0.898)	
X^2_H	9.7428*** (0. 0018)	42.828*** (0.000)	
X^2_{FF}	2.1205 (0.1237)	1.246 (0.291)	
CUSUM	2.5680** (0.0112)	1.03757 (0.3012)	

The standard errors of coefficients are in parentheses. $X^2_{SC}(4)$, X^2_H, and X^2_{FF} indicate the diagnostic tests of Breusch-Godfrey's serial correlation test up to a lag of 4, Breusch-Pagan's heteroskedasticity test and Ramsey's RESET function form test, respectively. P-values are given in parentheses. CUSUM denotes the CUSUM test for the stability of parameters

[a]The robust standard error

** and *** denote significance at 5 % and 1 %, respectively.



Note: the lowest point of the BIC curve corresponds to 1 break.

Fig. 3 BIC and number of breaks. *Note*: the lowest point of the BIC curve corresponds to 1 break

showing that changes in coefficients are all significant according to the *F*-statistics for the null hypothesis of $\lambda_i = \lambda$. This result serves as additional evidence of the identified structural break in GDP growth in 1948. This structural break coincides with a long, stable period of economic growth (Schön 2010), as well as with a new, active (Keynesian) economic policy in Sweden (Jonung 2000; Lundberg 1983). In several instances, the post-war years can be described as a turning point from a fiscal and monetary policy perspective.[10]

[10] The immediate post-war years have been described as an economic-political 'system crisis' that, in principle, ended in 1948 (Lundberg 1983).

Table 3 Stability of parameters across different segments: the case of growth of GDP

	1949–2000	
	Intercept	Slope
1851–1948	5.781** (0.02)	17.050*** (6.1e-05)

p-values are given in parentheses
** and *** denote significance at 5 % and 1 %, respectively.

5.3 Granger Causality Tests for GSE and GGDP

The result of the Granger causality test is reported in Table 4. The first column corresponds to the whole sample (from 1850 to 2000), while the second and third columns report the results in the two segments. Particular attention is given to the CUSUM tests (Table 4 and Fig. 4). For the equation in which the dependent variable is represented by GGDP, there are no problems for all specifications of segments. However, for the equation in which GSE is the dependent variable, the model for the whole sample period cannot pass the CUSUM test. Once more, as previously identified, this would indicate the presence of a structural break in the data. On the other hand, the estimates with a structural break (1851–1948; 1949–2000) can pass the CUSUM tests—consequently, the result of Granger causality tests implemented individually in each segment is reliable. Note that the number of observations in each segment becomes rather small—99 and 52, respectively—and therefore, the bootstrap standard errors are adopted in order to increase the precision.

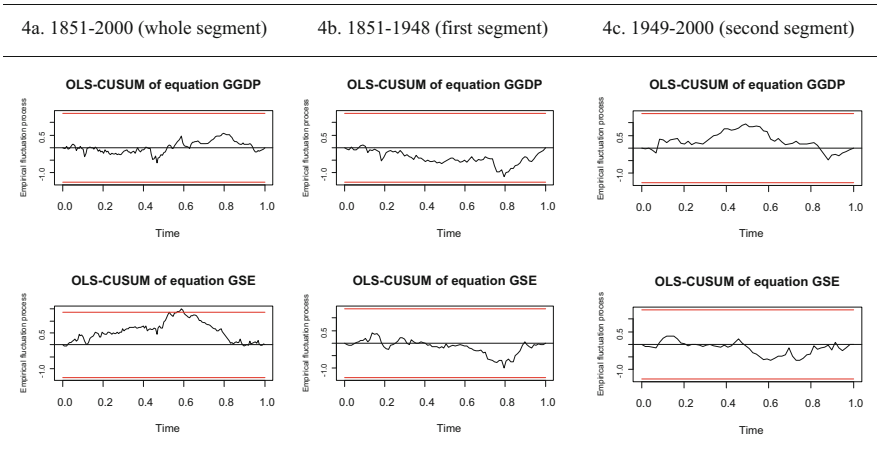
The results are reported in Table 4. Attention is paid to the last two columns representing two segments with the break at 1948, since they are reliable in the sense of no specification errors of unstable parameters. First of all, the null of non-causality can only be rejected by GGDP to GSE in the second segment, 1949–2000. This means that GGDP Granger-causes GSE only after 1949 (i.e. 1949–2000) but not in the 1851–1948 period. Hence, GSE is correlated with historical GGDP in the period of 1949–2000, but not 1851–1948. On the other hand, our results also show that GSE does not (Granger)-cause GGDP in either segment. This indicates no correlation between GSE with historical GGDP in the entire sample period (1851–2000).

Second, an instantaneous correlation between GGDP and GSE can only be identified up until 1948 (i.e., 1851–1948). This instantaneous correlation disappeared after 1949. Intuitively, it can be imagined that both GGDP and GSE are affected by some common economic factors and common shocks. Instantaneous correlation implies that both GGDP and GSE would be affected simultaneously. The correlation therefore provides a picture of the relative magnitudes from common factors and shocks on GGDP and GSE. Consequently, these results are

Table 4 VAR and no causality tests for growth rates

	1851–2000	1851–1948	1949–2000
Granger causality GSE → GGDP	3.1203** (0.029)[a]	1.5002 (0.207)[a]	1.2103 (0.205)[a]
Granger causality GGDP → GSE	3.4169* (0.086)[a]	0.3598 (0.705)[a]	4.356*** (0.006)[a]
Instantaneous	14.1402*** (0.0002)	11.5458*** (0.0007)	1.7888 (0.1811)
CUSUM equ. GGDP	Stable	Stable	Stable
CUSUM equ. GSE	Not stable	Stable	Stable
$X^2_{SC}(4)$	7.9216 (0.4412)	4.0151 (0.8558)	6.8857 (0.549)
k[b]	2		

$X^2_{SC}(4)$ indicates the diagnostic tests of Breusch-Godfrey's serial correlation test up to a lag of 4
[a]Bootstrap standard error
[b]The optimal lag for the whole sample is determined by the AIC
***Significance at 1 %, **at 5 %, and * at 10 %



Note: statistics of the CUSUM tests are plotted with symmetric bands. The statistics being outside of the bands leads to the rejection of the stability of the coefficients. The left-hand panel indicates the whole sample. The middle panel reflects the segment of 1851 to 1948. The right-hand panel shows the segment of 1949 to 2000.

Fig. 4 (**a**)–(**c**). Stability tests for growth in VAR model. *Note*: statistics of the CUSUM tests are plotted with symmetric bands. The statistics being outside of the bands leads to the rejection of the stability of the coefficients. The *left-hand panel* indicates the whole sample. The *middle panel* reflects the segment of 1851–1948. The *right-hand panel* shows the segment of 1949–2000

interpreted as, up until 1948, GGDP and GSE are simultaneously affected by common economic factors, such as economic policy, structural change, etc.

Granger causality characterizes the significance of correlations between the historical values of one variable and another variable. In this case, GGDP (Granger)-causes GSE after 1949; thus GSE correlates with past GGDP. When

using the notion of common factors and shocks in the interpretation of this significant correlation, this would first affect GGDP and take a while to have an impact on GSE. Putting these two correlations together, we can establish the following. In the sample period of 1851–1948, there is an instantaneous correlation, but no Granger causality in either direction. Hence, GDP growth and self-employment growth would simultaneously be affected by common factors. In the sample period of 1949–2000, GGDP (Granger)-causes GSE but not in the other direction. In this period, there is no instantaneous correlation, and GSE is only correlated with historical GGDP.

The above analysis has established a delay for self-employment growth. A Granger causality test in the frequency domain identifies the length of this delay. Even though we know that Granger causality can only be identified for GGDP to GSE in the second segment (as found above), we test two segments and all

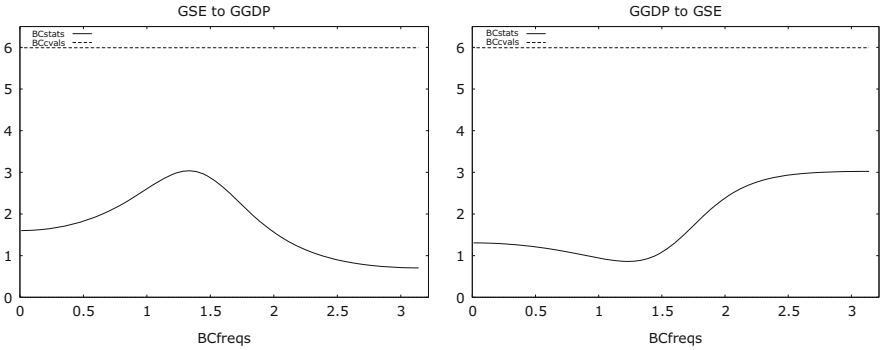


Fig. 5 The segment of 1851–1948: GSE to GGDP (*left panel*), GGDP to GSE (*right panel*). The dashed lines represent 5 % critical value. The curves represent statistics of Breitung and Candelon tests associated with different frequencies ω

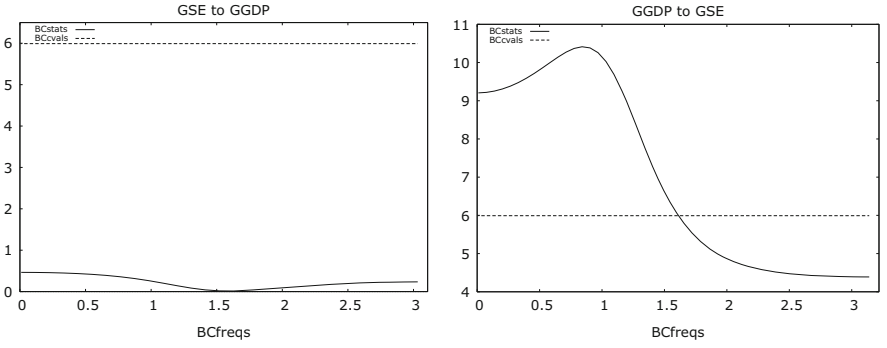


Fig. 6 The segment of 1949–2000: GSE to GGDP (*left panel*), GGDP to GSE (*right panel*). The dashed lines represent a 5 % critical value. The curves represent statistics of Breitung and Candelon tests associated with different frequencies ω

directions; the tests can serve as a confirmation of our previous results. The number of lags, k, used in the tests, are three for both segments. The results are presented in Figs. 5 and 6, and the curves in the figures represent the Wald statistics of testing the null hypotheses specified in Eqs. (4 and 5) with different frequencies ω in (0,π). Figure 5 represents the segment of 1851–1948, and Fig. 6 represents the segment of 1949–2000. The critical value of 5.99 is plotted as dashed lines; if a part of the curve (associated with the frequency ω) is located above the dashed line, the non-Granger causality can be rejected at the corresponding frequency ω.

In the first segment, 1851–1948 (Fig. 5), no parts of the curves are located above the dashed line—i.e., non-Granger causality cannot be rejected at any frequency. This is consistent with the findings in the previous section: GGDP and GSE responded to common shocks simultaneously. In the second segment, 1949–2000 (Fig. 6), however, the results differ. The left-hand panel indicates the non-Granger causality test GSE to GGDP, and it can be observed that no part of the curve is located above the dashed line. Therefore, the hypothesis that GSE does not Granger-cause GGDP cannot be rejected at any possible ω. However, in the right-hand panel of Fig. 6, the Wald curve is situated above the dashed line when ω is less than 1.6, which approximately matches a 4-year period. The null of non-Granger causality can therefore be rejected beyond 4 years, but not for shorter frequencies.

6 Concluding Remarks

In this study, we could identify a positive correlation between self-employment growth and GDP growth in the long term, 1850–2000. However, this correlation appears to have changed after World War II, more specifically in 1948. From this year, no significant correlation between self-employment growth and macroeconomic growth could be discovered. Furthermore, and interestingly, before 1948, we could not establish any *causal* relationship between self-employment growth and GDP growth in either (Granger) direction. In this earlier period, GDP growth and self-employment growth appear to have responded simultaneously to common factors and shocks. Yet, from 1949 and onwards, GDP growth Granger-caused self-employment growth, but not the other way around. We found a delay for self-employment growth: between 1949 and 2000, GDP growth would first react to these common factors, and self-employment growth would respond with a delay. From 1949, variations in self-employment lagged with GDP growth (or with common shocks or factors) in the medium or long term—not the other way around.

Recent theory and research suggest that entrepreneurship has become a driving force for economic growth in advanced economies in the past two to three decades. Thus, entrepreneurship drives and precedes economic growth and this link is found to be empirically verified across a wide spectrum (Thurik and Wennekers 2004). The relationship is not purely straightforward—and it is not considered to be unaffected by time or history, nor by a country's level of development. From both 'historical' models (e.g., Audretsch and Thurik 1997, 2001) and 'stages of economic development'-models (Bosma et al. 2008; Wennekers et al. 2010) it

would have been expected that changes in entrepreneurship in Sweden would display a positive, (Granger) causal relationship with economic growth during approximately the final two decades of the last century (or perhaps even earlier). This causal relationship would be either weaker, missing, or even reversed, for earlier periods. In the present study, no relationship in line with these theories was discovered for Sweden, a country ranked as an advanced, innovation-driven economy (e.g., Acs and Szerb 2009, 2012).

Thus, we have not been able to establish that economic growth reacts to fluctuations in entrepreneurship—rather, since the late 1940s changes in GDP were always ahead of changes in entrepreneurship. Accordingly, no shift or structural break in which changes in entrepreneurship would precede economic growth could be discovered. As a consequence, in this study the case of Sweden does not correspond to recent established models and assumptions. It is interesting to note that the structural break discovered in the present study coincides with earlier empirical observations: the immediate post-war years have been viewed as a turning point and the onset of a long stabilization policy paradigm (Jonung 2000; Lundberg 1983). Given our results, the question could be posed whether Sweden is an exception to the rule. It may of course be so. Nonetheless, research that has used country panels also gives evidence of substantial country heterogeneity. In fact, there are rather few countries that actually do display the hypothesized relationships proposed by recent models. Several countries deviate from the average. Globally (and since the 1970s), increases in entrepreneurship are an early indicator for a recovery from economic recessions. At the national level, entrepreneurship seems to react to economic fluctuations rather than causing them (Koellinger and Thurik 2012; see also Congregado et al. 2012). Our results are in line with these observations. Therefore, Sweden does not seem to be an exception from the rule. Given our results, it could be asked if entrepreneurship has been properly measured. Self-employment may be an inappropriate definition of entrepreneurship. This is probably one of the most problematical and difficult aspects in the entrepreneurship literature: self-employment is perhaps—at best—able to measure some characteristics of entrepreneurship, but it cannot capture all aspects of the phenomenon.

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Investigating the Impact of Small Versus Large Firms on Economic Performance of Countries and Industries

Judit Albiol-Sanchez and André van Stel

Abstract

Following earlier work by Audretsch et al. (2002), we assume that an optimal size-class structure exists, in terms of achieving maximal economic growth rates. Such an optimal structure is likely to exist, as economies need a balance between the core competences of large firms (such as exploitation of economies of scale) and those of smaller firms (such as flexibility and exploration of new ideas). Accordingly, changes in size-class structure (i.e., changes in the relative shares in economic activity accounted for by micro, small, medium-sized and large firms) may affect macro-economic growth. Using a unique database of the EU-27 countries for the period 2002–2008 for five broad sectors of economic activity and four size-classes, we find empirical support which suggests that, on average for these countries over this period, the share of micro and large firms may have been 'above optimum' (particularly in lower income EU countries), whereas the share of medium-sized firms may have been 'below optimum' (particularly in higher income EU countries). This evidence suggests that the transition from a 'managed' to an 'entrepreneurial' economy (Audretsch and Thurik 2001) has not yet been completed in all countries of the EU-27.

Keywords

Small firms • Large firms • Size-classes • Macro-economic performance

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1 Introduction

Building an economy based on knowledge and innovation is a key target of the European 2020 strategy (European Commission 2010a). Typically, entrepreneurship is regarded as an essential component of a knowledge-based economy where people start firms to pursue new but uncertain ideas (Audretsch and Thurik 2001). Although a multi-faceted concept, entrepreneurship is most often understood as the establishment and operation of new and small firms. Since it became apparent that the comparative advantages of the EU in global competition lie in the exploitation of its knowledge base, politicians in many countries have tried to increase the number of new and small firms in their territory. At the end of the twentieth century, researchers started to investigate the changing role of small and new firms in industrial economies (Brock and Evans 1989; Acs and Audretsch 1993). Globalization and an increasing importance of knowledge in the production process caused many developed countries to move from a more 'managed' to a more 'entrepreneurial' economy (Audretsch and Thurik 2000; Thurik et al. 2013). In the former type of economy, large and incumbent firms play a dominant role, exploiting economies of scale in production and R&D in a relatively stable economic environment. In the latter type, small and new firms play an increasingly important role, introducing new products and services in highly insecure economic environments, while quickly adapting to rapidly changing consumer preferences (Audretsch and Thurik 2001).

Following the early stream of research documenting the changing role of small and new firms in industrial economies, a considerable amount of research has now emerged studying the consequences of this change toward smallness for macro-economic performance (Van Stel 2006; Carree and Thurik 2010). In particular, several studies have found a positive link between measures of entrepreneurship (e.g. start-ups, small firm presence, number of self-employed, number of entrepreneurs in young businesses) and measures of macro-economic performance (e.g. productivity, GDP growth), e.g. Audretsch and Keilbach (2004) and Van Stel and Suddle (2008). In line with these findings, economists and policy makers are increasingly becoming aware of the importance of entrepreneurship for achieving higher levels of competitiveness and economic growth. Entrepreneurs introduce innovations into the economy, thereby challenging incumbent firms to perform better as well (Schumpeter 1934). A lack of entrepreneurs is harmful for economic growth, because it implies a lack of competition, and hence a lack of incentives to innovate.

However, although it is clear that a lack of entrepreneurs is harmful for economic growth, in general less attention is paid to the question whether an economy can also have more entrepreneurs than is good for economic prosperity (Blanchflower 2004). For instance, when there are many self-employed or very small firms in an economy, it is likely that a considerable proportion of these small firms operates below the minimum efficient scale, and that many of their business owners could be more productive as employees (Carree et al. 2002). The notion that an economy can also have too many entrepreneurs (self-employed) or small firms is

important, because in many countries policy measures have been installed based on the (often implicit) assumption that higher self-employment or small firm rates always induce macro-economic performance (European Commission 2009, Chap. 3). However, it is possible that such measures have an adverse effect in the sense that individuals without the required entrepreneurial skills are attracted into self-employment (Johnson 2005; Parker 2007; Shane 2009; Storey 2003).

We have seen that economies can have less but also more entrepreneurs than is good for macro-economic performance (Carree et al. 2002). This clearly implies the existence of an *optimal* rate of entrepreneurship. However, to our knowledge, only a few studies have attempted to actually measure what the level of this optimal rate might be, and which factors may determine this level. Carree et al. (2002, 2007) model the equilibrium rate of business ownership (the number of business owners per labor force) as a function of economic development (per capita income), while Van Praag and Van Stel (2013) model the optimal business ownership rate as a function of a country's participation rate in tertiary education. Audretsch et al. (2002) use a completely different measure of entrepreneurship, viz. small firm presence operationalized as the share of small firms in a country's total turnover (i.e., sales). Although they do not explicitly measure the optimal rate of small firm presence, they do show that such an optimal rate exists and moreover, that most countries in their sample of European countries had a level of small firm presence below the optimum in the early 1990s.

The present paper is based on Audretsch et al. (2002) and extends and refines their analysis. In particular, we investigate whether changes in size-class structure affect macro-economic performance of industries and countries in the European Union (EU-27). The underlying assumption is that there exists an optimal size-class structure, where (newer and) smaller firms are strong in flexibility and in *exploration* of innovative ideas (Audretsch 1995; Geroski 1995; Caves 1998), and where larger firms are strong in producing with higher efficiency through scale economies and in *exploitation* of innovative ideas.[1] A well-functioning economy requires a good balance between these core competences of firms of different firm size, but can this perfect balance be quantified? We make use of a unique and rich database prepared in part by Panteia/EIM on behalf of the European Commission (see European Commission 2010b). The database provides information on employment, value added, sales and other variables for all 27 countries of the European Union over the period 2002–2008. The information is also disaggregated by sector and size-class.

We distinguish between 27 EU-countries, five broad sectors of economic activity and four size-classes: micro, small, medium-sized and large. At the country-sector level we first approximate the net growth rate of the share of SMEs as the annual percentage growth of real sales by SMEs minus the annual percentage growth of real sales by large firms. We then approximate the net growth rate of

[1] Of course, not all firms are involved in innovation. Moreover, the extent to which small and large firms explore and exploit innovative ideas will differ by sector.

the share of micro firms as the annual percentage growth of real sales by micro firms (as a size-class) minus the annual percentage growth of real sales by all firms (i.e. the industry total). We similarly define net growth of the share of small, medium and large firms. Note that these variables relate to the *distribution* of economic activity over size-classes but not to the *magnitude* of total economic activity.[2] We then estimate two equations where GNP growth of the sector is explained by changes in size-class structure as estimated by (1) the net growth rate of the share of SMEs and (2) the net growth rates of the four separate size-classes. A positive impact of a change in the share of (for instance) small firms on sector growth would imply that the share of small firms is below optimum as an increase of the share in the economy of small firms apparently stimulates macro-economic performance. Such an outcome would imply that apparently, there is not enough flexibility and exploration of innovative activities (by small firms) present in the economy.

As the importance of small versus large firms for an economy depends on the stage of economic development (Thurik et al. 2013), we also estimate our equation separately for countries within the EU with relatively lower and higher levels of economic development. Our main findings are as follows. We find that increases in the share of real sales by medium-sized firms have a significantly positive influence on sector growth (i.e., growth of value added at the sector level), particularly for higher income EU countries, whereas we find the opposite for micro and large firms, particularly for lower income EU countries. These results suggest that on average, EU countries have too much economic activity by micro and large firms, but not enough economic activity by medium-sized firms. An explanation for the important role of medium-sized firms for macro-economic growth as implied by our analysis, may be that medium-sized firms are flexible enough to adjust quickly to changing economic circumstances, while at the same time they have a large enough scale to compete with large firms, thereby also challenging the latter to perform better. Our results suggest that the transformation from a 'managed' (where large firms are relatively more important) to an 'entrepreneurial' economy (where SMEs are relatively more important) has not yet been completed in all EU countries, at least in 2008, i.e., just prior to the current economic crisis.

2 Models

2.1 Base Model

In this section we present a model, which allows us to test the hypothesis that changes in size-class structure affect macro-economic performance of industries and countries in the European Union (EU-27). We capture changes in industry

[2] For instance, a positive net growth rate of the share of SMEs may go together with positive but also with negative growth of GNP.

structure by changes in the relative importance (share of economic activity) of four firm size-classes (micro, small, medium and large) for five broad sectors of economy.

The model of Audretsch et al. (2002) assumes that a country's growth can be decomposed into two components: (1) growth that would have occurred with an optimal industry structure, and (2) the impact on growth occurring from any actual deviations from that optimal industry structure.[3] Audretsch et al. (2002) provide a mathematical derivation of their estimation equation starting from this assumption. For this derivation we refer to Appendix 1, but here we continue directly with their estimation equation:

$$\Delta GNP_{ct} = \Delta GNP_{ct-1} + \sum_{t=1}^{T} \beta_t D_t + k\Delta SFP_{ct-1} + e_{ct} \tag{1}$$

where ΔGNP_{ct} denotes the rate of economic growth in country c and year t, D_t denote dummy variables for periods $t = 1, \ldots, T$, capturing business cycle effects and ΔSFP represents the change in small firm presence, as approximated by the difference in growth rates of SMEs and large firms in terms of real sales:

$$\Delta SFP_t = \left[\ln\left(\frac{sal_{SME}}{dfl_{SME}{*}PLI}\right)_t - \ln\left(\frac{sal_{SME}}{dfl_{SME}{*}PLI}\right)_{t-1}\right] - \left[\ln\left(\frac{sal_{large}}{dfl_{large}{*}PLI}\right)_t - \ln\left(\frac{sal_{large}}{dfl_{large}{*}PLI}\right)_{t-1}\right] \tag{2}$$

where *sal* indicates nominal sales, *dfl* indicates a size-class specific deflator, and *PLI* represents a price level index correcting for price level differences across countries. A positive value of this variable reflects a change in size-class structure towards a higher share in industry sales of SMEs and a correspondingly lower share of large firms (as SME sales grow faster than large firm sales).

In Eq. (1), the effect of changes in size-class structure on economic growth is reflected by k. A positive estimate for parameter k indicates that a relative shift in economic activity towards SMEs (at the expense of large firms) benefits macro-economic growth. Accordingly, a positive (negative) k implies that the share of economic activity of SMEs is below (above) optimum. A non-significant k would indicate that the share of SMEs is around the optimum, indicating that there is good

[3] It may be argued that the optimal industry structure, in terms of the optimal share of economic activity by small and medium-sized firms (SMEs) in an economy, may have increased over the last four decades or so, due to the emergence and diffusion of new information and communication technologies. This lowered minimum efficient scale and improved the importance of flexibility and the ability to adjust quickly to changing market circumstances, things which small firms are typically good at. However, as explained in Appendix 1, as we are considering only a short period of time in this study (2002–2008), we assume that the optimal share of SME activity remains constant over this short period.

balance between the core competences of large firms (such as exploitation of economies of scale) and those of smaller firms (such as flexibility and exploration of new ideas).

We extend the Audretsch et al. (2002) model in three directions, all of which make the model more flexible. First, instead of estimating the model at country level, we estimate the model at country-sector level. Second, instead of including lagged GNP growth on the right hand side, implicitly fixing its parameter to 1, we allow the impact of lagged growth to be freely estimated. Third, instead of assuming a 1-year lag between the change in industry structure and economic growth, we also add a contemporaneous term, allowing for the possibility that (part of) the impact is immediate. These three extensions result in the following model:

$$\Delta GNP_{cst} = \alpha \Delta GNP_{cst-1} + \sum_{t=1}^{T} \beta_t D_t + k_1 \Delta SFP_{cst} + k_2 \Delta SFP_{cst-1} + e_{cst} \qquad (3)$$

where indicator s reflects sector. The use of both a lag operator and a difference operator in Eq. (3) implies that 2 years of data are lost. Hence, although our database covers the period 2002–2008, our estimation sample covers the period 2004–2008.

2.2 Refinement

In a second exercise we refine the model further by splitting the SME size-class into four separate size-classes: micro, small, medium-sized and large. In this second exercise we approximate the net growth of the share of micro firms as the annual percentage growth of real sales by micro firms (as a size-class) minus the annual percentage growth of real sales by all firms (i.e. the industry total):

$$\begin{aligned} \Delta SFP_{microt} = & \left[\ln \left(\frac{sal_{micro}}{dfl_{micro} * PLI} \right)_t - \ln \left(\frac{sal_{micro}}{dfl_{micro} * PLI} \right)_{t-1} \right] \\ & - \left[\ln \left(\frac{sal_{total}}{dfl_{total} * PLI} \right)_t - \ln \left(\frac{sal_{total}}{dfl_{total} * PLI} \right)_{t-1} \right] \end{aligned} \qquad (4)$$

We similarly define net growth of the share of small, medium-sized and large firms (i.e., real sales growth of the respective size-classes in deviation from the real sales growth for the industry total).

We then have

$$\Delta GNP_{cst} = \alpha \Delta GNP_{cst-1} + \sum_{t=1}^{T} \beta_t D_t + k_1 \Delta SFPmicro_{cst} + k_2 \Delta SFPsmall_{cst} + k_3 \Delta SFPmedium_{cst} + \quad (5)$$

$$k_4 \Delta SFPlarge_{cst} + k_5 \Delta SFPmicro_{cst-1} + k_6 \Delta SFPsmall_{cst-1} + k_7 \Delta SFPmedium_{cst-1} + k_8 \Delta SFPlarge_{cst-1} + e_{cst}$$

A positive impact of a change in the share of (for instance) small firms on sector growth would imply that the share of small firms is below optimum as an increase of the share in the economy of small firms apparently stimulates macro-economic performance. Such an outcome would imply that possibly, there is not enough flexibility and exploration of innovative activities present in the economy (as these are typical qualities of small firms).

3 Database and Descriptive Statistics

We make use of a unique and rich database prepared in part by Panteia on behalf of the European Commission (see European Commission 2010b). The database provides information on employment, value added, sales and other variables for all 27 countries of the European Union. The information is also disaggregated by sector and size-class.[4] This enables us to compute sales and value added growth rates by sector and size-class.

3.1 Definitions of Sectors, Size-Classes and Variables

We will make use of data for the period 2002–2008.[5] We use data for the following sectors[6] and size-classes:

Sectors[7]

- Manufacturing (sector D)
- Construction (F)

[4] The data for a more recent version of the database are publicly available from the following link: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm (under 'Database for the Annual report'). However, crucially, for these more recent data it is not possible to construct deflator series at the level of sector times size-class, which hampers correct approximation of changes in size-class structure.

[5] For more recent years the data required to construct deflator series at the level of sector times size-class are not available.

[6] In other parts of economy (e.g., mining; electricity), interplay between small and large firms is less likely to occur.

[7] Sector classification is based on Nace Revision 1.1.

- Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods (G)
- Hotels and restaurants (H)
- Transport, storage and communication (I)
- Non-financial private sector: the aggregate of these sectors

Size-Classes
- Micro: 1–9 occupied persons
- Small: 10–49 occupied persons
- Medium-sized: 50–249 occupied persons
- SMEs: 1–249 occupied persons (aggregate of micro, small and medium-sized)
- Large: 250 or more occupied persons
- Total: the aggregate of these size-classes

We use the following operationalizations for the model variables introduced in Sect. 2.1 [see Eqs. (1) and (2)]. All variables are available at the sector and size-class level defined above. The main data source of the variables is the above-mentioned database, which was prepared for the Annual Report on SMEs in the EU (see European Commission 2010b).

ΔGNP: growth of real gross national product (also available by sector)
Sal: real sales, in Euros
dfl: deflator
PLI: price level index (purchasing power parities)

In our empirical application we correct nominal sales (*Sal*) for inflation and country differences in purchasing power. Data on purchasing power parities (with EU-27 = 100) are taken from Eurostat for the year 2005 (the middle year of our estimation sample). Deflator series by sector and size-class are constructed using data of additional variables from the Annual Report database, as well as price indices data from Eurostat. For the methodology to construct these deflator series we refer to Van Stel et al. (2014).

3.2 Descriptive Statistics

Table 1 presents some summary statistics for the relative importance of the different size-classes in the 27-EU countries in 2005 (in terms of sales). The importance of firm-size in the economy is measured by each firm-size share: micro, small, medium, SME (as the sum of the last three), and large. The share of micro firms in the economy[8] is defined as the total volume of sales by micro firms in 2005 divided

[8] In this paper, 'the economy' refers to the non-financial private sector, i.e., the aggregate of sectors D, F, G, H and I, as listed in Sect. 3.1.

Table 1 Sales share by firm size-class for the 27 European Union Countries in 2005

Country	Share micro	Share small	Share medium	Share SME	Share large
Austria	0.158	0.226	0.222	0.606	0.394
Belgium	0.204	0.218	0.194	0.616	0.384
Bulgaria	0.221	0.242	0.235	0.698	0.302
Cyprus	0.309	0.276	0.271	0.855	0.145
Czech Republic	0.167	0.185	0.250	0.603	0.397
Denmark	0.180	0.243	0.219	0.641	0.359
Estonia	0.238	0.301	0.282	0.821	0.179
Finland	0.136	0.148	0.178	0.461	0.539
France	0.168	0.202	0.174	0.545	0.455
Germany	0.091	0.158	0.196	0.445	0.555
Greece	0.405	0.200	0.175	0.780	0.220
Hungary	0.184	0.197	0.188	0.569	0.431
Ireland	0.108	0.171	0.256	0.535	0.465
Italy	0.275	0.247	0.197	0.720	0.280
Latvia	0.204	0.282	0.311	0.796	0.204
Lithuania	0.111	0.245	0.266	0.622	0.378
Luxembourg	0.162	0.205	0.187	0.554	0.446
Malta	0.327	0.229	0.161	0.718	0.282
Netherlands	0.145	0.216	0.249	0.610	0.390
Poland	0.239	0.150	0.232	0.621	0.379
Portugal	0.250	0.236	0.232	0.717	0.283
Romania	0.162	0.223	0.231	0.616	0.384
Slovakia	0.131	0.173	0.217	0.522	0.478
Slovenia	0.182	0.190	0.235	0.607	0.393
Spain	0.227	0.247	0.200	0.674	0.326
Sweden	0.161	0.181	0.190	0.533	0.467
United Kingdom	0.124	0.167	0.184	0.475	0.525
Average	0.195	0.213	0.220	0.628	0.372

Source: Self-device from Panteia/EIM database (Database for the Annual Report). See European Commission (2010b)

by total sales in 2005 (in all size-classes). Column 1 reports the share of micro firms in total sales. The lowest value is recorded for Germany, where the share of micro firms accounts only for 9.1 % of total sales, while in Greece around 40 % of the overall sales is accounted for by micro firms. The average sales share accounted for by micro firms in that year is 19.5 %. Column 2 reports the sales share of small firms in the industry. Here, the numbers indicate that the lowest and the highest value are recorded for two neighboring countries, Finland and Estonia, with 14.8 % and 30 % respectively. However, not for medium-sized firms as column 3 shows. Around 16 % of overall industry is accounted for by medium-sized firms in Malta, while more than 30 % is accounted for by medium-sized firms in Latvia. Column 4 reports the aggregate sales share of the micro, small and medium firms (SMEs) in overall industry. Cyprus is the country with the highest presence of SMEs, more than 85 %,

while Germany reports the lowest share of economic activity by Small and Medium Enterprises. Furthermore, on average for the EU-27, total sales are formed for the most part by small and medium-sized firms. In this sense, the industry structure of Germany is dominated by large firms, while Cyprus, belonging to 12-EU newcomer countries, is the country with the lowest share of this firm-size class. Almost all the 27-EU countries report higher sales shares of SMEs than large firms; Finland, Germany and the United Kingdom are the exceptions to this size-class structure. This suggests that (at least some) higher developed economies are dominated by large firms. Moreover, this table represents an interesting snapshot of the industry structure in 2005 where the 27-EU economies are mostly formed by SMEs (62.8 %).

Correlation matrixes between the dependent and independent variables used in the different models can be found in Appendix 4.

4 Results

In order to analyze whether changes in size-class structure affect macroeconomic performance of industries, we estimate Eqs. (3) and (5) using a pooled data set for five broad sectors of economic activity for the EU-27 countries for the period 2004–2008. However, as the importance of small versus large firms for an economy depends on the stage of economic development (Thurik et al. 2013), we also estimate our equations separately for countries with relatively lower and higher levels of economic development (within a EU context).[9]

As the presence of outliers may distort our empirical strategy, the analysis is performed using Ordinary Least Squares robust regression method, which performs an initial screening based on Cook's distance > 1 to eliminate gross outliers before calculating starting values and then performs Huber iterations (Huber 1964) followed by biweight iterations, as suggested by Li (1985). For a detailed description of the method see Hamilton (1991, 1992).[10]

Estimation results for the 27-EU countries over the period 2002–2008 for the five broad sectors of economic activity are presented in Table 2.[11] Our first specification includes the general variable indicating the net growth of the share of Small and Medium-sized Enterprises approximated by the annual percentage growth of real sales by SMEs minus the annual percentage growth of real sales by

[9] Classifications by economic development level are in Appendix 2. For the 'lower' developed countries estimation sample we use the 'relatively lower developed countries' and 'medium developed countries' from Table 3. For the 'higher' developed countries estimation sample we use the 'relatively higher developed countries' and 'medium developed countries' from Table 3. As there is no obvious reason to (exclusively) include the medium developed countries with either the lower developed country sample or the higher developed country sample, we include this middle group in both estimation samples.

[10] Standard errors are calculated using the pseudovalues approach described in Street et al. (1988).

[11] Estimation results for each separate sector are available from the authors upon request.

Table 2 Regression results for Eqs. (3) and (5): relating growth to industry structure[a,b,c]

	Lower developed		Higher developed		General	
	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}
ΔGNP_{cp-1}	0.250***	0.254***	0.233***	0.236***	0.305***	0.297***
	(0.044)	(0.048)	(0.036)	(0.037)	(0.028)	(0.029)
ΔSFP	0.025		0.035**		0.031*	
	(0.026)		(0.017)		(0.017)	
ΔSFP_{cp-1}	−0.046*		−0.037**		−0.051***	
	(0.024)		(0.015)		(0.015)	
ΔSFP_{micro}		−0.061*		0.019**		0.011
		(0.035)		(0.009)		(0.011)
ΔSFP_{small}		−0.045		0.005		−0.015
		(0.061)		(0.042)		(0.038)
ΔSFP_{medium}		0.034		0.094***		0.099***
		(0.052)		(0.027)		(0.028)
ΔSFP_{large}		−0.109***		−0.054**		−0.059**
		(0.039)		(0.025)		(0.025)
$\Delta SFP_{microcp-1}$		−0.091***		−0.013		−0.017
		(0.030)		(0.009)		(0.011)
$\Delta SFP_{smallcp-1}$		0.017		−0.039		0.005
		(0.029)		(0.031)		(0.019)
$\Delta SFP_{mediumcp-1}$		−0.086*		0.084***		0.018
		(0.050)		(0.025)		(0.026)
$\Delta SFP_{large_{cp-1}}$		0.002		0.051**		0.048**
		(0.035)		(0.023)		(0.022)
Constant	0.056***	0.057***	0.025***	0.025***	0.039***	0.039***
	(0.010)	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)
R-squared	0.197	0.240	0.168	0.233	0.251	0.266
Sample size	280	280	336	336	521	521

[a]Regression for 27 European countries over the period 2002–2008
[b]All specifications include year dummies
[c]Standard errors in parentheses
*Significant at 10 %
**Significant at 5 %
***Significant at 1 %

large firms [see Eq. (2)]. Both lagged and unlagged terms are included [see Eq. (3)]. Our second specification then adds the net growth rates of the shares of micro, small, medium and large firms [see Eq. (4)] and also the lagged versions of these variables. The variables included in the second specification allow deeper examination of the effect of changes in size-class structure on macro-economic performance [see Eq. (5)]. Our findings are as follows. For the general sample, i.e., when combining all EU countries in one pooled sample, we find a positive and statistically significant effect (at the 10 % significance level) for our first indicator of changes in size-class structure on sector growth. Hence, recent increases in the share of real sales by SMEs relative to large firms have a significantly positive

influence on sector growth. However, we find a negative and statistically significant effect (at the 1 % significance level) for the lag of our first indicator of changes in size-class structure on sector growth. This last effect is slightly bigger.

The oscillating pattern of negative and positive coefficients for lagged and unlagged indicators may point at different types of effects over time. For instance, when the relative share of small firms increases due to, for instance, a big number of new-firm start-ups in a certain year, there may be an immediate positive impact on economic growth through the new economic activity of these start-ups. However, after some time, these new firms might displace some of the previously existing firms, consistent with a lagged negative impact (Fritsch and Mueller 2004). Therefore, in order to evaluate the impact of a change in size-class structure, both the lagged and unlagged impacts should be considered.

Looking at the second specification, we find that recent increases in the share of real sales by medium-sized firms have a significantly positive influence (at the 1 % significance level) on sector growth (i.e., growth of value added at the sector level), whereas the lagged impact of medium-sized firms is non-significant. Hence, combining the lagged and unlagged effects, the net-effect of increases of the share of medium-sized firms on sector growth is positive. This may be because medium-sized firms combine a certain level of scale with a certain level of flexibility, allowing them to be very competitive (Van Stel et al. 2014). As regards large firms, we find a negative unlagged effect and a positive lagged effect, which more or less cancel each other out. Results for micro and small firms are not significant. Overall, these results suggest that on average, EU countries do not have enough economic activity by medium-sized firms.

By and large, results for the higher developed countries are in line with these findings. We find a positive and statistically significant effect (at the 5 % significance level) of recent increases in the share of real sales by SMEs on sector growth. We further find a negative and statistically significant effect (at the 5 % significance level) of lagged increases in the share of SMEs on economic growth. Looking at results per size-class, we again find a positive influence of medium-sized firms, and for large firms a net-effect over time of approximately zero. We also find a small positive impact for micro firms.

When estimating for lower developed countries within the European Union, we find that increases in the share of real sales by large-sized firms have a significantly negative effect (at the 1 % significance levels) on sector growth. We also find negative effects for micro firms and medium-sized firms, albeit for the latter only at the 10 % significance level. This pattern might indicate that in (former) transition countries, there is still a category of larger firms not operating efficiently. On the other side of the spectrum, there seem to be many micro firms, which may also not be as productive as would be desirable. Possibly, entrepreneurs in some of these firms could be more productive as an employee in a somewhat bigger firm (e.g. in the small-scaled size-class).

We conclude, based on the empirical findings, that on average for the (particularly higher income) EU countries, medium-sized firm presence is below optimum during the period 2002–2008. One has to be careful when interpreting the

estimation results for different countries. The estimated positive sign found for medium-sized firms must be seen as an average value. So, there may be countries in the sample where the share of medium-sized firms (such as Ireland) is relatively high and consequently, medium-sized firm share might exceed optimum, despite the positive regression coefficient. On the other hand, for countries with a low share (such as France), medium-sized firm presence may be expected to be below the optimum, given the positive coefficient.

4.1 Robustness Test

Since we include not only lags of our independent variables but also contemporaneous variables, it is conceivable that there is reversed causality, i.e. that high GNP growth may benefit small firms more than large firms (or vice versa). To correct for this possibility, we estimate a version of the model where the variables reflecting the change in size-class structure are 'cleared' for business cycle (reversed causality) effects. We apply the following procedure, similar to Audretsch et al. (2002, footnote 12).

We first estimate the following equation using the same sample as in Eq. (3) but with one extra year (period 2003–2008):

$$\Delta SFP_{cst} = \pi + \mu \Delta GNP_{cst} + \varepsilon_{cst} \tag{6}$$

The estimated residual of this equation, $\widehat{\varepsilon}_{cst}$, can be seen as the variable ΔSFP_{cst}, corrected for business cycle effects.

Related to Eq. (5), we similarly estimate the net growth of the share of micro, small, medium-sized and large firms:

$$\Delta SFP_{micro\,cst} = \pi + \mu \Delta GNP_{cst} + \varepsilon_{cst} \tag{7}$$

$$\Delta SFP_{small\,cst} = \pi + \mu \Delta GNP_{cst} + \varepsilon_{cst} \tag{8}$$

$$\Delta SFP_{medium\,cst} = \pi + \mu \Delta GNP_{cst} + \varepsilon_{cst} \tag{9}$$

$$\Delta SFP_{large_{cst}} = \pi + \mu \Delta GNP_{cst} + \varepsilon_{cst} \tag{10}$$

where the estimated residuals of these equations, $\widehat{\varepsilon}_{micro\,cst}$, $\widehat{\varepsilon}_{small\,cst}$, $\widehat{\varepsilon}_{medium\,cst}$ and $\widehat{\varepsilon}_{large_{cst}}$, are the variables $\Delta SFP_{micro\,cst}$, $\Delta SFP_{small\,cst}$, $\Delta SFP_{medium\,cst}$ and $\Delta SFP_{large_{cst}}$ respectively, corrected for business cycle effects.

Second, we estimate Eqs. (3) and (5), with ΔSFP_{cst}, $\Delta SFP_{micro\,cst}$, $\Delta SFP_{small\,cst}$, $\Delta SFP_{medium\,cst}$ and $\Delta SFP_{large_{cst}}$ replaced by $\widehat{\varepsilon}_{cst}$, $\widehat{\varepsilon}_{micro\,cst}$, $\widehat{\varepsilon}_{small\,cst}$, $\widehat{\varepsilon}_{medium\,cst}$ and $\widehat{\varepsilon}_{large_{cst}}$, respectively, for the period 2004–2008. These ΔSFP variables are then "cleared" for possible reversed causality effects.

Results are reported in Appendix 3. After correcting for reversed causality, the results remain similar to those in Table 2. Hence, we conclude that omission of the option of reversed causality hardly influences the size and sign of the effects as

presented in Table 2. Nevertheless, one notable difference is that in Table 4, the effect for small firms for higher income countries is negative. As the effect for medium-sized firms is positive, this suggests that sector growth could be enhanced, if more small firms would grow further to become a medium-sized firm.

5 Conclusions

It is deeply embedded in the current European policy approach that the creativity and independence of the self-employed contribute to higher levels of economic activity (Carree et al. 2002). Moreover, as Audretsch et al. (2002) pointed out, an extensive literature has linked the structure of industries to performance. However, little is known about whether changes in size-class structure affect macro-economic performance of industries and countries in the European Union (EU-27).

Our empirical analysis shows that there may be too much economic activity by micro and large firms, particularly for the relatively lower developed countries, including the EU-12 newcomer countries. On the other hand, we also find that there is not enough economic activity by medium-sized firms for member countries of the European Union in the period 2002–2008.

An explanation for the important role of medium-sized firms for macro-economic growth, as implied by our analysis, may be that medium-sized firms are flexible enough to adjust quickly to changing economic circumstances, while at the same time they have a large enough scale to compete with large firms, thereby also challenging the latter to perform better. Our results suggest that the transformation from a 'managed' (where large firms are relatively more important) to an 'entrepreneurial' economy (where SMEs are relatively more important) has not yet been completed in all EU countries, at least not in 2008, i.e., just prior to the current economic crisis. This imbalance may have consequences for economic growth.

Future research may focus on estimating the model at more detailed levels of sectoral aggregation, and on extending the model with a distinction between different types of economic activity within a sector, e.g. R&D versus production.

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Appendix 1: The Audretsch et al. (2002) Model

In this appendix we show the derivation of the Audretsch et al. (2002) model. The derivation is taken directly from their article (Audretsch et al. 2002, 88–90):

"We test the hypothesis that the extent of the gap between the actual industry structure and the optimal industry structure influences subsequent growth. We start with the assumption that a country's growth can be decomposed into two components: (i) growth that would have occurred with an optimal industry

structure, and (ii) the impact on growth occurring from any actual deviations from that optimal industry structure. This can be represented by

$$\Delta GNP_{cp} = \Delta GNP^{*}_{cp} - \gamma \left| SFP_{cp-1} - SFP^{*}_{c} \right|, \tag{11}$$

where the dependent variable is the actual rate of economic growth. ΔGNP^{*}_{cp} is the rate of economic growth in country c in the case where the actual industry structure, summarized by small firm presence (SFP_{cp}), is at the optimal level at the start of the period p. For ease of exposition we assume that the optimal industry structure in a country remains constant for the total period under investigation. This is not vital to our analysis. Since we are considering only short-term periods, this may be a reasonable assumption.

Industry structure is multidimensional and spans a broad array of characteristics that defy measurement by a single statistic. However, as explained elsewhere (Audretsch and Thurik 2000, 2001), the most salient characteristic driving the shift in industry structure from the managed to the entrepreneurial economy is that the relative role of small and entrepreneurial firms has increased. Thus, we capture changes in industry structures by changes in the relative importance of small firms.

In Eq. (11) the parameter γ is positive. Deviations of the actual industry structure from the optimal industry structure negatively affect economic growth, both when the industry structure consists of too few or too many small firms. In either case there is a deviation from the optimal industry structure and number of small firms. Taking the first difference of Eq. (11) we obtain

$$\begin{aligned} \Delta GNP_{cp} = {} & \Delta GNP_{cp-1} + \Delta\Delta GNP^{*}_{cp} \\ & - \gamma \left(\left| SFP_{cp-1} - SFP^{*}_{c} \right| - \left| SFP_{cp-2} - SFP^{*}_{c} \right| \right). \end{aligned} \tag{12}$$

In case both SFP_{cp-1} and SFP_{cp-2} are above the optimal small-firm share, the expression between brackets reduces to ΔSFP_{cp-1}. Indeed, in case the small-firm share is too high, adding small firms to the industry structure reduces economic growth. In case both SFP_{cp-1} and SFP_{cp-2} are below the optimal small-firm share, the expression between brackets reduces to $-\Delta SFP_{cp-1}$. An increase in the small firm share when this presence is below optimal enhances economic performance. Therefore, the sign of the parameter of ΔSFP_{cp-1} reflects whether the small firm presence is below or above the optimal levels for the countries under consideration. In case the parameter is negative, the industry structure consists of too many small firms. In case the parameter is positive, the reverse holds and the industry structure consists of too few small firms.

We will denote the parameter of ΔSFP_{cp-1} as κ. Note that this is not the same parameter as γ, since the sign of κ is dependent on whether the actual small-firm share is above or below the optimal one. So, κ can be both positive and negative whereas γ is necessarily positive.

We make some further assumptions to transform Eq. (12) into an equation that can be estimated using the data at hand. First, we approximate ΔSFP_{cp-1} by $\Delta SF_{cp-1} - \Delta LF_{cp-1}$, the difference between the growth of small firms and large firms in terms of value-of-shipments. Second, we assume that ΔGNP^*_{cp} is idiosyncratic with respect to time and country. Therefore country dummies and time dummies (the last to correct for European wide business cycle effects) are included. Thus, $\Delta\Delta GNP^*_{cp}$ is approximated by time dummies only because the country dummies drop out when taking first differences. Third, we add an error term e_{cp}. Summarizing we have

$$\Delta GNP_{cp} = \Delta GNP_{cp-1} + \sum_{p=1}^{P} \beta_p D_p + \kappa\left(\Delta SF_{cp-1} - \Delta LF_{cp-1}\right) + e_{cp}, \qquad (13)$$

where D_p denote dummy variables for periods $p = 1, \ldots, P$. Factors specific to each time period are reflected by β_p. A high value of this parameter indicates an unexplained increase in the extent of economic growth. In case of a low β_p the reverse holds. The contribution of the shift in the size class distribution of firms to the percentage growth of GNP is represented by κ."

Note that in the present paper we also have data at sector level. Accordingly, we assume that ΔGNP^*_{cp} is idiosyncratic with respect to time, country *and* sector. However, similar to the country dummies, sectoral dummies drop out when taking first differences of Eq. (11), hence $\Delta\Delta GNP^*_{cp}$ is approximated by time dummies only.

Appendix 2: Classification by Economic Development Level

In this appendix we provide a classification of countries based on their GNI per capita in 2005 (Table 3).

Table 3 EU-27 countries, by economic development level, 2005

Relatively lower developed countries	*Gross national income (GNI) per capita in purchasing power parities (current international $), 2005*
Romania	9280
Bulgaria	9840
Latvia	12,880
Poland	13,470
Lithuania	14,050
Slovak Republic	15,720
Estonia	15,920
Hungary	16,060
Medium developed countries	*GNI per capita*
Malta	20,070
Czech Republic	20,370
Portugal	21,050
Slovenia	23,280
Cyprus	23,400
Greece	23,990
Relatively higher developed countries	*GNI per capita*
Spain	27,000
Italy	28,290
France	29,910
Finland	30,850
Germany	31,470
Belgium	32,400
Sweden	32,940
Austria	33,300
Ireland	33,450
United Kingdom	33,490
Denmark	33,660
Netherlands	35,270
Luxembourg	58,640

Source: World Bank, World Development Indicators

Appendix 3: Robustness Test: Correcting for (the Possibility of) Reversed Causality

Table 4 presents the results of the robustness test described in Sect. 4.1. Independent variables are cleared from (contemporaneous) business cycle influences.

Table 4 Regression results Eqs. (3) and (5), correcting for reversed causality[a,b,c]

	Lower developed		Higher developed		General	
	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}	ΔGNP_{cp}
ΔGNP_{cp-1}	0.285***	0.275***	0.217***	0.214***	0.311***	0.327***
	(0.049)	(0.049)	(0.043)	(0.043)	(0.029)	(0.032)
ΔSFP	0.046*		0.048**		0.047***	
	(0.026)		(0.019)		(0.017)	
ΔSFP_{cp-1}	−0.044*		−0.040**		−0.049***	
	(0.025)		(0.017)		(0.016)	
ΔSFP_{micro}		−0.061*		0.020**		0.010
		(0.035)		(0.009)		(0.012)
ΔSFP_{small}		0.010		0.027		0.007
		(0.061)		(0.044)		(0.039)
ΔSFP_{medium}		−0.005		0.087***		0.068**
		(0.052)		(0.030)		(0.029)
ΔSFP_{large}		−0.106***		−0.068**		−0.071***
		(0.039)		(0.028)		(0.025)
$\Delta SFP_{micro\,cp-1}$		−0.096***		−0.016*		−0.019*
		(0.031)		(0.009)		(0.011)
$\Delta SFP_{small\,cp-1}$		−0.005		−0.080**		−0.028
		(0.055)		(0.038)		(0.035)
$\Delta SFP_{medium\,cp-1}$		−0.090*		0.094***		0.020
		(0.050)		(0.025)		(0.026)
$\Delta SFP_{large\,cp-1}$		0.001		0.051*		0.039
		(0.038)		(0.026)		(0.024)
Constant	0.055***	0.059***	0.024***	0.024***	0.038***	0.039***
	(0.010)	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)
R-squared	0.203	0.243	0.152	0.212	0.254	0.262
Sample size	279	279	332	332	520	518

[a]Regression for 27 European countries over the period 2002–2008
[b]All specifications include year dummies
[c]Standard errors in parentheses
*Significant at 10 %
**Significant at 5 %
***Significant at 1 %

Appendix 4: Correlation Matrixes by Economic Development Level

In this appendix we provide the correlation matrixes by level of economic development (Tables 5, 6, 7). The strong significant and negative correlation between the net growth of the share of large firms and the net growth of the share of SMEs is due to the definitions of the variables (see Sect. 2.1). Notice, however, that we include the net growth of the share of Small and Medium-sized Enterprises approximated

Table 5 Correlation matrix for lower developed countries

	ΔGNP_{cp}	ΔGNP_{cp-1}	ΔSFP	ΔSFP_{cp-1}	$\Delta SFP_{micro\,cp-1}$	$\Delta SFP_{small\,cp-1}$
ΔGNP_{cp}	1					
ΔGNP_{cp-1}	0.3125*	1				
ΔSFP	−0.0338	−0.0608	1			
ΔSFP_{cp-1}	−0.0103	0.0748	−0.0848	1		
$\Delta SFP_{micro\,cp-1}$	−0.0644	−0.0337	−0.0413	0.5218*	1	
$\Delta SFP_{small\,cp-1}$	−0.0708	−0.3773*	−0.0722	−0.0488	−0.1020	1
$\Delta SFP_{medium\,cp-1}$	−0.0797	0.0393	0.0142	−0.2886*	−0.5669*	0.1756*
$\Delta SFP_{large\,cp-1}$	−0.0048	−0.0545	0.0960	−0.9820*	−0.4577*	0.0139
ΔSFP_{micro}	−0.0163	0.0170	0.5617*	−0.0227	−0.0763	−0.0434
ΔSFP_{small}	−0.0782	−0.0845	0.2616*	0.1256*	0.0808	−0.1079
ΔSFP_{medium}	0.1099	0.0157	−0.2834*	−0.0348	0.0400	0.0510
ΔSFP_{large}	0.0365	0.0705	−0.9841*	0.0927	0.0416	0.0624
	$\Delta SFP_{medium\,cp-1}$	$\Delta SFP_{large\,cp-1}$	ΔSFP_{micro}	ΔSFP_{small}	ΔSFP_{medium}	ΔSFP_{large}
$\Delta SFP_{medium\,cp-1}$	1					
$\Delta SFP_{large\,cp-1}$	0.3212*	1				
ΔSFP_{micro}	0.0467	0.0269	1			
ΔSFP_{small}	−0.0550	−0.1244*	−0.1225*	1		
ΔSFP_{medium}	−0.0950	0.0317	−0.5915*	0.1217*	1	
ΔSFP_{large}	−0.0126	−0.1036	−0.4980*	−0.2365*	0.3239*	1

Source: Self-device from Panteia/EIM database (Database for the Annual Report). See European Commission (2010b)
*Significant at 5 %

Table 6 Correlation matrix for higher developed countries

	ΔGNP_{cp}	ΔGNP_{cp-1}	ΔSFP	ΔSFP_{cp-1}	$\Delta SFP_{micro\,cp-1}$	$\Delta SFP_{small\,cp-1}$
ΔGNP_{cp}	1					
ΔGNP_{cp-1}	−0.1517*	1				
ΔSFP	0.1221*	−0.4419*	1			
ΔSFP_{cp-1}	−0.0027	0.1396*	−0.1637*	1		
$\Delta SFP_{micro\,cp-1}$	−0.0577	−0.0046	0.0506	0.4096*	1	
$\Delta SFP_{small\,cp-1}$	−0.0089	0.2636*	−0.2177*	0.3800*	−0.2428*	1
$\Delta SFP_{medium\,cp-1}$	0.1119*	0.1234*	−0.1265*	0.1984*	−0.2017*	0.4561*
$\Delta SFP_{large\,cp-1}$	0.0022	−0.0844	0.1354*	−0.9057*	−0.1814*	−0.2379*
ΔSFP_{micro}	−0.0040	−0.1080*	0.4039*	−0.0170	0.0173	−0.0914
ΔSFP_{small}	0.2736*	−0.4572*	0.3999*	0.0005	0.1626*	−0.1735*
ΔSFP_{medium}	0.1130*	−0.2592*	0.2053*	−0.1333*	0.2092*	−0.3034*
ΔSFP_{large}	−0.0587	0.3200*	−0.9025*	0.1613*	0.0445	0.0730
	$\Delta SFP_{medium\,cp-1}$	$\Delta SFP_{large\,cp-1}$	ΔSFP_{micro}	ΔSFP_{small}	ΔSFP_{medium}	ΔSFP_{large}
$\Delta SFP_{medium\,cp-1}$	1					
$\Delta SFP_{large\,cp-1}$	−0.0158	1				
ΔSFP_{micro}	−0.1022	−0.0081	1			
ΔSFP_{small}	−0.0193	−0.0198	−0.2465*	1		
ΔSFP_{medium}	−0.2579*	0.0998	−0.2014*	0.5119*	1	
ΔSFP_{large}	0.0496	−0.1580*	−0.1716*	−0.2493*	−0.0085	1

Source: Self-device from Panteia/EIM database (Database for the Annual Report). See European Commission (2010b)
*Significant at 5 %

Table 7 Correlation matrix for the general sample

	ΔGNP_{cp}	ΔGNP_{cp-1}	ΔSFP	ΔSFP_{cp-1}	$\Delta SFP_{micro\,cp-1}$	$\Delta SFP_{small\,cp-1}$
ΔGNP_{cp}	1					
ΔGNP_{cp-1}	0.1643*	1				
ΔSFP	0.0563	−0.2292*	1			
ΔSFP_{cp-1}	0.0075	0.1286*	−0.0962*	1		
$\Delta SFP_{micro\,cp-1}$	−0.0442	−0.0060	0.0268	0.4273*	1	
$\Delta SFP_{small\,cp-1}$	−0.0433	−0.1642*	−0.1371*	0.0887*	−0.1477*	1
$\Delta SFP_{medium\,cp-1}$	0.0463	0.0576	−0.0650	−0.0078	−0.3223*	0.2722*
$\Delta SFP_{large\,cp-1}$	−0.0047	−0.0830	0.0796	−0.9383*	−0.2639*	−0.0548
ΔSFP_{micro}	−0.0018	−0.0565	0.4376*	−0.0058	−0.0062	−0.0582
ΔSFP_{small}	0.1423*	−0.2362*	0.3575*	0.0581	0.1413*	−0.1428*
ΔSFP_{medium}	0.0887*	−0.1089*	0.0001	−0.0928*	0.1630*	−0.0852
ΔSFP_{large}	−0.0138	0.1613*	−0.9345*	0.0928*	0.0356	0.0781
	$\Delta SFP_{medium\,cp-1}$	$\Delta SFP_{large\,cp-1}$	ΔSFP_{micro}	ΔSFP_{small}	ΔSFP_{medium}	ΔSFP_{large}
$\Delta SFP_{medium\,cp-1}$	1					
$\Delta SFP_{large\,cp-1}$	0.1400*	1				
ΔSFP_{micro}	−0.0612	−0.0102	1			
ΔSFP_{small}	−0.0094	−0.0666	−0.2128*	1		
ΔSFP_{medium}	−0.1927*	0.0692	−0.3231*	0.3476*	1	
ΔSFP_{large}	0.0162	−0.0910*	−0.2662*	−0.2566*	0.1467*	1

Source: Self-device from Panteia/EIM database (Database for the Annual Report). See European Commission (2010b)
*Significant at 5 %

by the annual percentage growth of real sales by SMEs minus the annual percentage growth of real sales by large firms and the net growth rates of the shares of micro, small, medium-sized and large firms in two different specifications.

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Competitive Strategies, Perceived Competition and Firm Performance of Micro Firms: The Case of Trento

Svetlana Kovaleva and Nardo de Vries

Abstract

We explore what strategies incumbent micro firms adopt when they are faced with different levels of competition, using longitudinal data from 2134 micro firms in Trento, Italy. We measure their preference for a cost leadership or differentiation strategy compared to the default of non-coherent strategic behavior. Our results confirm that a perceived threat of competition pushes firms to take strategic action, while a market level measure of competition has no influence on a firm's strategic behavior. A differentiation strategy is preferred by younger entrepreneurs with higher levels of education and previous entrepreneurial experience, while at the same time previous entrepreneurial experience is negatively associated with a cost leadership strategy. Thus, considering personal characteristics and perceptions can help improve our understanding of how competitive strategies are formed. In line with previous studies, we could not confirm a short-term effect of following a certain competitive strategy on firm performance.

Keywords

Perceived competition • Competitive strategy • Firm performance • Micro firms

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1 Introduction

Competition plays a fundamental role in economics since it has a strong effect on firm behavior and firm performance. Conventional economic models predict that the structural characteristics of an industry (competitive environment) determine market conduct (competitive strategy) resulting in a specific performance (Bain 1959, 1968). However, the relationship between competition and firm performance is not always straightforward. Empirical results indicate both a positive and a negative influence. A positive effect of competition on firm performance has been documented by Nickell (1996), showing a strong impact on productivity growth. Furthermore, Januszewski et al. (2002) have found that firms displaying higher productivity growth operate in markets with an intensive level of competition. On the other hand, negative effects are also found in the literature, especially for high productivity growth firms, where competition has a hampering effect on growth (Kacker 2009).

A possible explanation for this ambiguous relationship might be rooted in differences in firm characteristics and in individual firm behavior (Kemp and Hanemaaijer 2004). Competition might induce different behavior and action preferences, due to variations in the way that firms are organized and because of heterogeneity in management perceptions (Caves and Porter 1977; Porter 1980). Small firms, for instance, are not always equipped to respond in the same manner to competition as larger companies would, mainly as a result of their level of financial and human capital (Pelham 1999). Furthermore, management is not always fully informed and equipped to react in an economic rational way (Simon 1955). This raises the question whether theoretical and empirical models and approaches specifically developed for larger business units are also applicable to smaller firms.

Therefore it is relevant to deepen our understanding of competitive and strategic processes among smaller business units. Microenterprises (firms with less than ten employees) play an important role in the European economy since they account for 92.4 % of all European businesses and engage 29.9 % of all employees (Eurostat 2013).[1] Apart from their prevalence, microenterprises are also typical in terms of their operations and resources at their disposal. Mettler and Williams (2011) claim that the technologies of the twenty-first century have created opportunities for microenterprises to operate in a more efficient manner, avoiding the problems faced by large firms such as bureaucracy or overstaffing. This would imply that

[1] Methodical note: The figures presented in this paper are based on Eurostat's structural business statistics (SBS) that provide data on the structure, conduct and performance of businesses across the European Union (EU) operating in industry, construction, trade and services. See Eurostat - Statistics Explained: Business economy - size class analysis (2013 ed.). Retrieved from December, 2, 2014 Statistics http://epp.eurostat.ec.europa.eu/statistics_explained/

the role of microenterprises should be reconsidered (Munoz 2010). Despite the (increasing) importance of micro firms, not much attention has been paid in the entrepreneurship literature to this category of businesses. There is a lack of studies investigating the behavior of micro firms in the context of competition, accompanied by a lack of relevant data on this category. Research on how competition is perceived, how competitive strategies are developed and how these are translated into firm performance by micro firms can help improve the explanatory power and generalizability of conventional economic theories.

The aim of our study is to explore what generic strategies—i.e. cost leadership and differentiation (Porter 1980)—micro firms adopt when they are faced with different levels of competition. We compare both strategies with the default of non-coherent strategic behavior. Similar to the theoretical framework of Block et al. (2015) we investigate what firm and personal level characteristics affect the preference for a specific competitive strategy. Finally, we test whether this preference leads to better firm performance measured by labor productivity increases.

This paper makes several contributions. *First*, our study helps to understand how micro firms react to the threat of competition. To the best of our knowledge this is the first study that specifically investigates these processes at the level of micro firms. This adds to existing theories that are predominantly based on samples containing only large firms. We employ a unique longitudinal data set containing 2134 Italian micro enterprises, enabling us to incorporate temporal effects in the analyses. *Second*, we examine what firm and personal characteristics determine the preference for a certain competitive strategy. Consistent with the upper echelon perspective, our results show that personal characteristics and experience of the firm owners (top management in micro enterprises) play a significant role in developing a specific strategic orientation of the firm. *Finally*, we contribute to the literature by providing empirical evidence that following generic strategies does not immediately, or at least in the short-term, affect firm performance in a micro firm context.

2 Theory and Hypotheses

2.1 Perception of Competition

By and large the economic literature on competition and firm behavior provides two perspectives: the economic (exogenous) and the behavioral (endogenous) perspective (Johnson and Russo 1997). The economic perspective addresses competition at the aggregated industry and market level and has been applied extensively in the industrial organization (IO) literature. It assumes homogeneity in the perception of competition for all (comparable) firms in an industry as a consequence of converging forces that create shared mental models of reality (Porac and Thomas 1990).[2]

[2] As a result of evolutionary (selection effects due to competition) and adaptive learning (feedback on certain decisions). See Johnson and Russo (1997) for a detailed discussion.

Early applications of this approach argue that the structural characteristics of an industry (the number and size distribution of firms in an industry) are strong determinants for market conduct—i.e. the strategic behavior of firms necessary to interact with other firms—which in turn yields a specific performance (Bain 1959, 1968). This structure–conduct–performance (SCP) paradigm was a dominant theory until the early 1980s (Slade 2004). Later theoretical developments, e.g. the strategic groups notion (Hunt 1972), take into account the performance variations within industries by observing clustered groups of similar firms, hence moving closer to the firm level of analysis (Caves and Porter 1977; Porter 1980; Porac and Thomas 1990; Scherer and Ross 1990; Leask and Parnell 2005). The main critique of the economic perspective is that it is based on exogenous conduct and models of optimal decision-making of economic agents (Slade 2004). By simply approaching competition at the market level the economic approach has traditionally ignored the subjective, non-rational way entrepreneurs perceive competition (Johnson and Russo 1997; Urbany and Montgomery 1998).

In contrast, the behavioral perspective is mainly focused on the decision-making process of subjects. This firm level approach considers the perception of competition as endogenous, based on the cognitive logic of decision makers (Kemp and Hanemaaijer 2004). The behavioral view challenges the conventional economic assumptions of optimal decision-making and equilibrium and urges to consider cognitive limitations of economic agents in economic choice models (Simon 1955). On the individual level competitive information can be processed in three sequential steps, each of which is exposed to subjectivity: observing information, interpretation of obtained information and the reaction according to this perception (Kiesler and Sproull 1982; Daft and Weick 1984). Decision makers observe and comprehend the complexity of the competitive environment by forming mental models—i.e. subjective, simplified images of reality—(Porac and Thomas 1990). These models also help to interpret the environment, for instance by positioning the own business and by categorizing the most important competitors (Porac and Thomas 1994). Sufficient information is required that can be obtained by (strategic) scanning of the environment and can differ from individual to individual (Aguilar 1967; Choo 1998). Personal factors, such as personal attitudes, values, experiences, personalities and views can lead to varying ways that competitive information is processed (Hunt 1972; Hambrick and Mason 1984). Therefore, individual factors can influence the interpretation of the environment and hence a firm's perception of competition. This holds in particular for micro firms, where decisions are predominantly made by (a small group of) firm owners and resources for competitive scanning are limited. Based on these findings, we expect more explanatory power of the behavioral perspective in comparison to the economic one, within the context of micro firms. Due to their smaller scale, less complex organizational structures and limited resources, we derive the following hypothesis for micro firms:

Hypothesis 1: Individual perceptions of competition are more important than market level competition for determining competitive strategic behavior of micro firms.

2.2 Shaping Generic Competitive Strategies

Porter has identified two basic (generic) strategies adopted by firms "in order to create a defendable position against the five competitive forces" (Porter 1980, p. 29): *overall cost leadership* versus *differentiation*. Cost leadership is targeted towards price sensitive consumers and is achieved by having minimal costs of R&D, advertising, service, and sales management. Achieving a level of comparative costs lower than those of competitors, results in higher average profitability even in the presence of strong competitive pressure. A differentiation strategy implies the pursuit of a certain distinctiveness of the goods and services offered with respect to other competitors (Porter 1980). Distinctiveness can be achieved in numerous ways, for instance via uniqueness of the: product design, technology used, customer services, and/or dealer network. It is reasonable to adopt this strategy in the presence of a need for specific products, specific firm resources for satisfying consumers' needs, or in the absence of price sensitivity by customers. Main challenges inherent in adopting a differentiation strategy are high costs of investments e.g. in R&D and/or in product design.

The role of firm owners in shaping their firms' strategic choices was conceptualized by Hambrick and Mason (1984) in the upper echelon theory. It states that organizational outcomes, i.e. strategic choices and performance levels are often predicted by personal background characteristics of the top management team (Hambrick and Mason 1984). Personal background characteristics and the human capital stock of founders/owners tend to have a strong influence on the preferences for specific strategies adopted in (small) firms and subsequently on their performance. As firm owners are key in developing and directing small firms' strategic orientation (Poon 2006; Rauch and Frese 2007; Rauch et al. 2009), considering personal characteristics can help improve our understanding of how competitive strategies are formed and how these choices are translated into firm performance.

Extant literature has indeed confirmed the importance of personal networks and social context of founders/owners in developing competitive strategies of firms (Ostgaard and Birley 1994; Burton and Beckman 2007; Block et al. 2015). The availability of resources puts constraints on what competitive strategy can be obtained (Barney 1991). For example, cost leadership requires an efficient production cost structure, whereas more high-quality creative or scientific resources are necessary for (innovative) differentiation (Block et al. 2015). It can be argued that this resource-matching constraint holds specifically for micro firms as—due to their scale—necessary resources are under their control to a lesser extent. Nevertheless, human capital endowments of the firm owner are a sustainable resource in micro firms, thus forming an influential factor in shaping competitive strategies adopted by micro enterprises.

Compared to cost leadership, differentiation requires substantially more and costly resources because it allows firms to obtain a sustained competitive advantage. For example, the explicit and tacit knowledge accumulated by the firm is hardly imitable by its competitors, at least in the short term. Human capital

endowments, formed by entrepreneurial experience and (higher) educational attainment, are also more often attributed to a differentiation strategy (Riley 2011; Block et al. 2015). Based on these findings we argue that personal characteristics and perceptions, as well as the human capital endowment (i.e. education and experience) of firm owners, are important for shaping micro firms' strategies.

Hypothesis 2a: Individual perception of competition is positively associated with a strategic orientation of micro firms.

Hypothesis 2b: A high level of educational attainment is positively associated with a preference for a differentiation strategy and negatively associated with a preference for cost leadership.

Hypothesis 2c: Entrepreneurial experience is positively associated with a preference for a differentiation strategy and negatively associated with a preference for cost leadership.

2.3 Linking Strategy to Firm Performance

Within the traditional IO literature it is argued that firms with a clear and consistent strategy will outperform firms without such strategies (Porter 1991). As stated before, the resource-based view complements this strategic paradigm by posing that a chosen generic strategy needs to be congruent with available resources in the firm in order to achieve a successful competitive position (Barney 1991). This framework is considered to be applicable for both large and small firms (Porter 1980). However, smaller firms tend to compete more often in niche markets (Porter 1980) and therefore are more inclined to adopt innovative, differentiating strategies (Van Praag and Versloot 2007). Moreover, achieving cost leadership is arguably harder for firms with fewer scale advantages (Pelham 1999; Gibcus and Kemp 2003). For smaller firms differentiation may thus be regarded as the most promising path to firm growth (Covin 1991). However, the empirical evidence is still inconclusive (Leitner and Güldenberg 2010). Several studies report no different impact of a specific strategy on performance (d'Amboise 1993; Kemp and Verhoeven 2002; Gibcus and Kemp 2003), some report a greater impact of differentiation (Pelham 1999), while some argue that cost leadership has higher returns on assets (Dess and Davis 1984). These mixed results might be a result of context dependency. Most of the aforementioned studies focus on the manufacturing sector, where Block et al. (2015) make an argument that in some sectors cost-efficiency strategies are more easily implemented than suggested in previous studies. In particular, for small, service-oriented firms the resources for implementing generic strategies are more intangible and less costly than in manufacturing. Based on this, and the fact that there is an overrepresentation of service activities among micro enterprises (Mettler and Williams 2011), it is conceivable that this group of firms can relatively easily adopt a generic strategy leading to superior and sustainable firm performance. For example, differentiation can be achieved by attributing special talent, education, or human capital that can reap significant returns (Block

et al. 2015), while cost-efficiency can be realized by simply accepting lower wages for the labor that is offered (Williams 2008). Following Leitner and Güldenberg's (2010) conclusion for SMEs, we postulate that micro firms following a cost-efficiency or differentiation strategy will eventually outperform those with no coherent strategy. Provided that the strategy is aligned with available resources, we assume both generic strategies to be beneficial and sustainable, so we expect both types to induce an equally good performance (Leitner and Güldenberg 2010). Hence, we formulate the following hypotheses:

Hypothesis 3a: Micro firms following a cost leadership or differentiation strategy perform better than firms without coherent competitive strategy.

Hypothesis 3b: Micro firms following a cost leadership or differentiation strategy perform equally well.

3 Data and Measures

We use a unique longitudinal data set, comprising incumbent micro enterprises (firms with less than ten employees and older than 5 years) operating in the province of Trento.[3] Our sample consists of three waves collected in 2010, 2011, and 2013 respectively. The first wave refers to the situation on December 31, 2009 and includes 2134 firms, the second—on December 31, 2010 and includes 1895 firms and the third one—on December 31, 2012, which includes 1544 firms. The data set contains information about general characteristics, organizational structure, the financial situation, as well as strategic dynamics and individual characteristics of firm owners. The average firm age in our sample is 19.2 years with a minimum of 6 and a maximum of 181 years. The context of incumbent micro firms is more suitable for our research question than start-ups, as we try to assess the effect of generic strategy preference on labor productivity growth and thus require a longer time frame and reliable performance data.

In addition, data on the value added and the number of employees in 2011 and 2010 were obtained from the regional Tax Agency[4] and Statistical Register of Active Enterprises (ASIA) respectively.[5] Table 1 reports the descriptive statistics of the main firm and personal characteristics.

[3] The data have been collected by the Statistical Office of Trento, Italy. The data come from the 'general entrepreneurs' questionnaire' survey, which was conducted with the owners of micro enterprises.

[4] The name of the Tax Agency in Italian is "Agenzia delle Entrate".

[5] The data on the value added and the number of employees in 2010 and 2011 have been collected only for those firms that were included in the third wave (the total number of observations for firm performance is 1544).

3.1 Variables and Measurement

3.1.1 Dependent Variables

We operationalize generic strategies by combining revealed information from two different questions in the 2009 wave. A cost leadership strategy was measured by asking firms owners "how important it is to have costs lower than those of competitors". If it was considered to be *very important*, then micro firms were attributed a cost leadership strategy. A differentiation strategy was measured by asking whether or not the firm had invested in 2009 in R&D, marketing and advertising, and/or training. By our definition micro firms adopt a differentiation strategy if they invested in at least one of these three categories. Measuring a differentiation strategy by the abovementioned investment categories is explained by the fact that all three of them are caused by competitive forces. Indeed, investment in R&D is innovation driven, while investment in training and investment in marketing and advertising are human capital and positioning driven respectively. We exclude from our analysis firm investment in machinery and investment in land and buildings because they are not appropriate for our approach: micro firm investment in land and buildings is related more closely to the long-term orientation and is not competition driven, while investment in machinery requires additional information on the amount of investment and its nature in order to consider it as a differentiation strategy.

Very few firms meet both the cost leadership or differentiation criterion and were thus omitted from our analysis.[6] If firms did not meet either criterion they were categorized as firms with non-coherent strategic behavior. Table 2 presents the descriptive statistics for micro firms' generic strategies.

Firm performance is measured by labor productivity growth, which is operationalized by the difference in value added per employee (delta logs).[7] Block et al. (2015) argue that some types of strategies can be more beneficial for long-term performance than others. Following this line of reasoning, it is possible to expect that the effect of following a differentiation strategy needs to take longer to occur. For this reason we used firm performance in 2010 and 2011 as outcome variables. Table 3 shows the summary statistics of our labor productivity growth variable.

3.1.2 Key Independent Variables

Since this study aims to identify what generic strategies micro firms adopt when they are faced with different levels of competition, one of the key independent

[6] Due to the lack of statistical power and also for the purpose of clarity they were omitted.

[7] The data on labor productivity growth have missing observations for the 1544 merged observations from the third wave: 23.5 % that has missing values for labor productivity growth in 2010 and 24.3 %—in 2011.

variables in our study is a self-reported measure of the intensity of competition. The subjective measure of competition is obtained by asking firm owners about the intensity of competition in 2009 and their responses were allocated to the three-point scale including "strong", "weak", and "no competition". Table 4 shows that 77.5 % of the firm owners perceived the competition to be strong. To assess the market level competition we used a proxy variable that measures the intensity of competition in the industry—i.e. the market level turbulence[8] referring to the year 2009. As market level turbulence is measured at the sector level, we exclude sector dummies from the regressions in order to avoid multicollinearity.

3.1.3 Control Variables

Based on the previous empirical and theoretical studies aimed at investigating main determinants of the strategy choice (for example, Block et al. 2015), we added a number of firm and entrepreneur level control variables. As firm level control variables, the following firm characteristics were used in the model: firm age in years, firm size in number of employees, being a family firm or not, and having a business partner or not. Since the number of firms with more than four employees (5 %) is very small, firms have only been distinguished by solo employees and employee firms. As for firm owner level, the following control variables were included in the model: entrepreneur's gender, age in years, and entrepreneur's level of education. We also included information about previous labor market position and entrepreneurial experience, as well as general experience in the sector (years in the sector). In addition, we included start-up motivations in the model that are divided into three groups: entrepreneurial spirit, continuing a family tradition, and substituting a wage job.

3.1.4 Econometric Approach

Our empirical design is twofold. We first estimated a multinomial logistic regression model in order to test how perceived competition and firm characteristics are associated with micro firm strategies in 2009. Second, to check whether the preference for a certain strategy leads to better performance, we estimated a dynamic relation via an OLS regression with lagged independent variables.

[8] Because of the data limitations, the most common tools to measure market concentration like Herfindahl-Hirschman Index or the concentration ratios were not available for our analysis. For this reason the market volatility indicator introduced by Dunne and Roberts (1991) and suggested by Mata (1991, 1992) as a possible way to measure industry competition was applied in this paper. The volatility indicator is defined as $VOL = ENT+EX - |NETENT|$, where ENT and EX are gross entry and exit respectively and $NETENT = N_t - N_{t-1}$, where N_t is the number of plants operating in the industry in period t and N_{t-1} is the number of plants operating in time-period $t-1$.

4 Multivariate Regression Results

Table 5 shows how a perceived threat of competition affects firm preferences for competitive strategies.

The results presented in Table 5 suggest that when micro enterprises perceive competition as strong, they prefer to respond to the threat of competition by adopting either differentiation or cost leadership strategies. These results support our hypothesis 2a. Nonetheless, when competition is perceived to be weak, micro firms prefer to follow only a differentiation strategy. This is in line with previous findings suggesting that small firms are often precluded from adopting a cost leadership strategy because of their resource limitations and constraints to the benefits of economy of scale. We did not find a significant effect of market level turbulence on strategic preferences of micro firms. Higher turbulence in the sector does not induce strategic behavior. This finding suggests that, in a micro firm context, strategic conduct is more closely associated with individual characteristics and perception than with structural features, thus supporting our hypothesis 1.

Several individual characteristics play an important role in determining the choice of micro firms' strategies. For instance, it is more likely that the firm follows a differentiation strategy when younger entrepreneur manages the firm. As for a cost leadership strategy, being managed by male owners is also a good predictor of adopting this kind of strategy. Finally, human capital measured by formal education and entrepreneurial experience has a strong effect on micro firms' strategy preferences. Highly educated entrepreneurs prefer to adopt a differentiation strategy compared to those with a low level of education. Previous entrepreneurial experience is positively associated with a preference for adopting a differentiation strategy but negatively with revealed cost leadership. Hence, we find partial support for our hypothesis 2b and full support for 2c. There is no statistically significant effect of an entrepreneur's previous labor market position in paid employment on strategy preferences. With regards to firm characteristics, we find clear evidence that the probability to adopt the differentiation strategy is higher for micro enterprises with employees than for solo-employees.

The next question that has been addressed in this study is how preferred generic strategies of micro firms are associated with their performance. Table 6 shows the OLS estimates of micro firms' strategies on labor productivity growth in 2010 and 2011 respectively. Within the time frame we did not find a significant relationship between the choice of competitive strategy and labor productivity growth either in 2010 or in 2011. Therefore, we did not find support for our hypothesis 3a, but the results support hypothesis 3b.

5 Conclusion and Discussion

Despite their population size and (increasing) economic importance (Mettler and Williams 2011) little is known about micro firms' perception of competition, competitive behavior and firm performance. Micro firm behavior for instance,

might not be fully explained by conventional economic models, due to this group's limited resources and distinct organizational structures. Our study addressed this gap by investigating what generic strategies micro firms adopt when they are faced with different levels of competition and by testing whether a certain strategy yields better firm performance. Our empirical results suggest that a perceived threat of competition pushes micro firms to take actions.

5.1 Theoretical Contributions

Our study finds that individual level perception is significantly positively associated with both cost leadership and differentiation strategies, while a market level measure of competition has no influence on a firm's strategic behavior. This supports hypothesis 1 and implies that a behavioral perspective may be more suitable for explaining micro firm behavior than a conventional economic perspective (Hambrick and Mason 1984; Porac and Thomas 1990; Kemp and Hanemaaijer 2004).

Prior research indicated that individual characteristics and perceptions are important in shaping generic strategies within small firms (Hambrick and Mason 1984). Our findings contribute to this literature by showing that available resources explain preferences for strategic behavior. In particular, the preference for a differentiation strategy is determined by human capital and the age of the entrepreneur, so that this kind of behavior is more likely to be portrayed by younger entrepreneurs with a higher level of education and previous entrepreneurial experience. At the same time, the existence of previous entrepreneurial experience is negatively associated with the preference for a cost leadership strategy. By finding support for hypotheses 2a and 2c and partial support for hypothesis 2b, we contribute to the literature that states that considering personal characteristics can help to improve our understanding of how competitive strategies are formed (Poon 2006; Rauch and Frese 2007; Rauch et al. 2009; Block et al. 2015).

Concerning the relationship between firm size and the preference for a generic strategy the extant literature is inconclusive. Studies suggesting that small firms more often tend to adopt a differentiation strategy and that cost-efficiency strategies are too costly due to limited available resources, might be biased by their focus on a manufacturing context (e.g. Pelham 1999). In contrast, other studies make an argument that in some (more service-oriented) sectors, implementing generic strategies is less resource-constrained than in manufacturing (Block et al. 2015). The present study contributes to this discussion by showing that both strategies can be adopted in a micro firm context, though this depends on their perception of competition. Micro firms that perceive competition as strong tend to follow both strategies, those companies that perceive competition as weak prefer to adopt only a differentiation strategy.

Leitner and Güldenberg's (2010) conclusion that the evidence of the (long-term) effect of competitive strategies on small firms' performance is inconclusive is shared in many other studies (D'Amboise 1993; Teach and Schwartz 2000; Spanos

and Lioukas 2001; Kemp and Verhoeven 2002; and Gibcus and Kemp 2003). Our results are in line with these findings. We did not find any statistically significant effect of a preference for a certain competitive strategy on firm performance even though micro firms with various firm and individual characteristics have different preferences for a competitive strategy.

An additional finding that opens up an interesting discussion on the role of human capital endowments and learning capabilities in micro firms is the fact that in our study previous experience has no significant effect on strategy and success. Studies that examined start-ups have shown that being previously unemployed versus leaving a salaried position has different effects on firm choice of strategies and firm survival (Bhattacharjee et al. 2010; Bonnet and Le Pape 2010; Fossen and Büttner 2013). We do not find a similar effect for incumbent micro firms, which might be an indication of shifts in the relative importance of various forms of human capital for determining strategy and success. It might be the case that for surviving micro firms the importance of previous work experience diminishes over time and can be substituted by, for instance, experience built up in the business. Such a learning experience touches upon 'active learning' (Ericson and Pakes 1995), but this needs to be examined more thoroughly in future research.

5.2 Limitations and Future Research

Even though we use a high quality data set with features that allow us to specifically address the problem for micro firms, it still has some limitations. First, our data only allowed for a relatively short-term assessment of how generic strategies affect firm performance. In line with the conclusions of Leitner and Güldenberg (2010) a longer time frame, preferably 10 years or more, is necessary to properly assess the long term effects of a consistent generic strategy. Such a time frame can also help to uncover performance differences between various generic strategies. For micro firms it can be argued that in the long run differentiation may achieve higher returns than cost-efficiency, as there are limitations to the amount and period of labor cost reduction they can achieve. Second, our data lacks the possibility to properly investigate firm performance of companies that implement a combination of both generic strategies. As other studies point at the potential of this ambidextrous approach (Burke et al. 2010; Leitner and Güldenberg 2010), future research could address this gap by adapting the theory of blue and red ocean strategies to the context of micro firms (Kim and Mauborgne 2005). From that perspective it is emphasized that competing in red oceans implies following either a cost leadership or a differentiation strategy, while creating blue oceans requires the combination of both generic strategies.

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Appendix

Table 1 Main firm and firm owner characteristics

Variables (in 2009)	Freq.	Percent.
Sectors		
Wholesale and retail trade	538	25
Construction	515	24
Services	645	30
Manufacturing	177	8
Metallurgy	133	7
Transport	126	6
Firm size in 2009		
0 employees	1433	67
1 employee	274	13
2 employees	153	7
3–5 employees	226	11
6–12 employees	48	2
Family firm	1155	54
Female	386	18
Having a business partner	574	27
Higher educational level	1015	48
Entrepreneurial experience	610	29
Previously employed	1693	79
Total number of observations	2134	100

Table 2 Preferred firm strategies

	Freq.	Percent.
Zero action	1236	57.92
Combined	89	4.17
Cost leadership	243	11.39
Differentiation	566	26.52
Total	2134	100.00

Table 3 In-/decreases in labor productivity in 2011 and in 2010 (in logarithms)

	Obs	Mean	Std. Dev.	Min	Max
2011	1229	0.02	0.56	−444.05	3915.89
2010	1237	0.01	0.61	−9859.01	489.14

Table 4 Descriptive statistics: perceived intensity of competition

. . .competition	Freq.	Percent.
No	185	8.67
Weak	295	13.82
Strong	1654	77.51
Total	2134	100.00

Table 5 Determinants of preferred competitive strategy

1	Non-strategic behavior (reference category; n = 1236)			
2	Cost leadership strategy (n = 243)			
3	Differentiation strategy (n = 566)			
Variables (in 2009)	1 (*ref.*)	2		3	
No competition	–	*ref.*		*ref.*	
Strong competition	–	0.775***	(2.606)	1.161***	(4.282)
Weak competition	–	0.218	(0.605)	1.000***	(3.349)
Market level turbulence *(#firms/year)*	–	0.000	(0.911)	0.000	(0.832)
Firm level char.					
Firm age	–	−0.005	(−0.643)	0.005	(0.924)
Family firm	–	0.003	(0.018)	−0.075	(−0.601)
Having employees	–	0.052	(0.314)	0.992***	(8.606)
Business partner	–	0.116	(0.619)	0.018	(0.130)
Personal char.					
Female	–	0.570**	(2.551)	−0.172	(−1.263)
Owner's age	–	−0.006	(−0.548)	−0.044***	(−5.258)
High level of education	–	−0.186	(−1.203)	0.547***	(4.812)
Motive: Entrepreneurial spirit	–	*ref.*		*ref.*	
Motive: Continuing family tradition	–	0.199	(0.886)	0.013	(0.075)
Motive: Substituting a wage job	–	0.129	(0.715)	−0.065	(−0.498)
Entrepreneurial experience	–	−0.490***	(−2.691)	0.245**	(1.982)
Previously employed	–	0.054	(0.283)	0.149	(1.084)
Years in the sector	–	0.006	(0.646)	0.010	(1.258)
Constant	–	−2.634***	(−4.478)	−0.742	(−1.634)
Observations		2034			
df		30			
Log likelihood		−1728.4384			
Pseudo R2		0.0686			

Note: The dependent variable is the preferred strategy in 2009. The estimation model is Mlogit, z-statistics in parentheses. Sector dummies are omitted to avoid multicollinearity with market level turbulence (measured at the sector level). All control variables refer to the year 2009
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6 Micro firms' strategies and firm performance in 2010, 2011

Variables (in 2009)	Model 1 Firm performance in 2010		Model 2 Firm performance in 2011	
Non-strategic behavior	*ref.*		*ref.*	
Cost leadership	0.027	(0.480)	−0.067	(−1.047)
Differentiation	−0.029	(−0.719)	−0.009	(−0.252)
Market level turbulence *(#firms/year)*	−0.000	(−0.145)	−0.000	(−0.329)
Firm level char.				
Firm age	−0.003**	(−2.027)	0.002	(1.519)
Family firm	0.022	(0.592)	0.043	(1.249)
Having employees	−0.004	(−0.093)	0.187***	(5.198)
Business partner	−0.032	(−0.873)	−0.006	(−0.150)
Personal char.				
Female	0.039	(0.680)	−0.035	(−0.877)
Owner's age	−0.000	(−0.010)	−0.004**	(−2.480)
High level of education	0.009	(0.264)	−0.050	(−1.535)
Motive: Entrepreneurial spirit	*ref.*		*ref.*	
Motive: Continuing family tradition	0.000	(0.000)	−0.039	(−0.792)
Motive: Substituting a wage job	−0.028	(−0.620)	0.013	(0.318)
Entrepreneurial experience	0.000	(0.005)	−0.062	(−1.580)
Previously employed	0.087	(1.407)	0.054	(1.126)
Constant	−0.023	(−0.133)	0.150	(1.516)
Observations	1181		1169	
R-squared	0.009		0.046	

Note: The dependent variable is firm performance in 2010 and 2011; measured by labour productivity in-/decreases in 2010 and 2011 respectively (in logarithms). Labour productivity growth is operationalized by value added per employee. The estimation model is OLS and robust t-statistics are presented in parentheses. Sector dummies are omitted to avoid multicollinearity with market level turbulence (measured at the sector level). All control variables refer to the year 2009

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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The Route to High Growth: Patterns of Financial and Operational Decisions for New Firms in France

Jean Bonnet, Nicolas Le Pape, and Teresa Nelson

Abstract

Using a longitudinal dataset on a set of firms established, continuing, and closing over the period of 2002–2007 in France, we explore how a young firm's financial policy and product market strategy may affect its growth path, as measured by employment growth. Financial decisions affect operational decisions. The aggressiveness of the firm is a means to obtain additional liquidities through higher sales levels, which then alleviates financial constraints allowing for additional operational spending. The "risk shifting" due to limited liability may also lead an entrepreneur to behave in a more aggressive manner and to promote a growth strategy. Our findings show that a small subset of new firms in France, exhibiting particular operational and financial patterns, has been at the origin of roughly 50 % of jobs created by the cohort within a 6 year period. We also find that certain entrepreneurial behaviors on the part of the founder/s are favorable for survivor firms to belong to the class of high-growth firms existing at the end of the observation.

Keywords

New Firm • Growth • Debt • Strategy • Entrepreurship

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1 Introduction

Young, entrepreneurial firms have been one of the engines of economic growth in France for over a decade, serving as an integral part of the national transition process from an industrial-based to an entrepreneurial-based economy (Bonnet et al. 2010). They generate a disproportionate amount of new technologies and patents and a large proportion of new employment (Henrekson and Johansson 2010; Falkenhall and Junkka 2009). In the case of France, high growth new firms contribute to the reduction of unemployment in Île-de-France, the region including Paris that is also the most important technological region of France representing one third of the national GDP (Abdesselam et al. 2014; Aubry et al. 2015).

The growth of a young firm, as well as its failure and closing, can be tied to both financial factors (access to external sources of financing, cost of capital, bank loan repayment schedules. . .) and operational factors (opportunities perceived, willingness to grow, product market competition, marketing approach, hiring policies, the cost of production. . .). The actual market and financial policies implemented by the entrepreneur matter for the growth path, including the possibility of moving to a high growth position. We investigate these issues in this research using a national longitudinal census survey dataset on new firms in France, 2002–2007 (SINE Survey: Système d'informations sur les nouvelles entreprises).

Research has shown that success in running small businesses, including survival of the new firm, may be influenced by financing liquidity constraints (Evans and Jovanovic 1989) even if greater human capital diminishes credit constraints (Bates 1990; Holtz-Eakin et al. 1994; Cressy 1996). The hypothesis of low credit rationing for example (Freimer and Gordon 1965), recommends that in cases where the firm is denied the full credit it requests, higher costs of credit and sub-optimal operating decisions may result. Firms' difficulties in accessing external financing may also result in a deterioration of the growth trajectory of the firm (Whited 2006).

Financial decisions affect operational decisions. This is especially true when the financial structure is used as a strategic variable in product market competition (Franck and Le Pape 2008). In industrial organization the seminal papers of Brander and Lewis (1986, 1988) underscore the linkage between the mode of financing (the debt/equity split) and the aggressiveness of a firm towards its competitors, i.e., the firm's degree of commitment to compete for market share. From this perspective, the aggressiveness of the firm in such cases is a means to obtain additional liquidities through higher sales levels, which then alleviates financial constraints allowing for additional operational spending. Furthermore, having a levered capital structure may motivate a firm to be a more aggressive competitor in the product market because the entrepreneur does not carry the full cost of bankruptcy (John et al. 2005). More precisely, when the entrepreneur is protected by limited liability and when the firm's operating profit falls short of the debt obligation (the definition of bankruptcy), the entrepreneur receives a zero payoff (and loses the limited initial amount), while debt holders become the residual claimants. In this way, the entrepreneur is partially protected from losses but remains a residual claimant to high earnings. This "risk shifting" may lead an

entrepreneur to behave in a more aggressive manner and to promote a growth strategy. In this paper we test these ideas and we develop complementary work in an area little explored: how a young firm's financial policy and product market strategy may affect its growth path.

Our findings show that a small subset of new firms in France exhibiting particular operational and financial patterns has been at the origin of roughly 50 % of jobs created 6 years later. We also find that entrepreneurial behavior on the part of the founder/s is favorable for survivor firms to belong to the class of high growth firms existing at the end of the observation.

The paper is organized as follows. In Sect. 2 we present the database and the key variable measures: aggressiveness, intensity of resorting to debt, and the building of the classes of growth. Section 3 is devoted to methods and results. Section 4 includes a discussion of findings and concluding thoughts.

2 Database and Key Variable Measures: Growth, Aggressiveness and Intensity of Resorting to Debt

2.1 Database and Selected Sample

Data is drawn from a 2002 survey (SINE 2002-1) conducted by the French National Institute of Statistical and Economic Studies (INSEE), which includes French firms set up or taken over during the first half of that year. Businesses are required by law to complete the surveys and therefore the sample should be considered extremely robust. A follow-up survey, carried out in 2005 (SINE 2002-2), delivers information about the status of the same firms 4 years later (closed down or still active). We will integrate market policies and financial policies during these stage 2 years (2004–2005) in our discussion. Finally, with the last survey of the cohort (SINE 2007-3), we will consider the survival of the firms according to their strategies, and for the firms still alive, the growth of the firms at the final date of observation in 2007.

In order to have a homogenized population of new firms representing entrepreneurship in France, we consider independent ex nihilo start-ups in 2002–2007 (subsidiaries and takeovers are excluded), in French regions (overseas departments are excluded) under the limited liability status.[1] In France this status reflects a more business-oriented enterprise. This is demonstrated by 6-year growth rates exhibited in Table 1. Theoretically, firms evolving under limited liability are assumed to be more prone to exit because of lower exit costs and they are linked to higher survivor firm growth rates due to their propensity to engage in higher risk projects (Harhoff et al. 1998). However, in our sample we find survival rates for limited liability firms

[1] We confirmed that the limited liability status has a strong explanation for the total variance of the different classes of growth (cf. infra). Thus, retaining only the limited liability status ensures a more homogenized population as regards growth.

Table 1 Job creation and classes of growth for firms with initial owner investment, and without

		Firms that have not invested during 2004–2005		Firms that have invested during 2004–2005					
	Ceased[a]	Alive	Ceased[b]	Ceased[b]	HG	AG	AD	HD	Sum/Average
Number of firms	7323	3662	1096	2136	2727	6170	364	1145	**24,623**
Proportion	*29.7 %*	*14.9 %*	*4.5 %*	*8.7 %*	*11.1 %*	*25.1 %*	*1.5 %*	*4.7 %*	100.2 %[c]
Employees[d]	17,214	7310	2187	4935	4970	12,238	1997	3958	**54,809**
Proportion	*31.4 %*	*13.3 %*	*4.0 %*	*9.0 %*	*9.1 %*	*22.3 %*	*3.6 %*	*7.2 %*	99.9 %[f]
Employees[e]	–	9806	2858	6223	17,099	15,768	1761	2839	**56,354**
Proportion	–	*17.4 %*	*5.1 %*	*11.0 %*	*30.3 %*	*28.0 %*	*3.1 %*	*5.0 %*	99.9 %[f]
Employees[f]	–	10,564	–	–	24,568	16,203	1483	1322	**54,140**
Proportion	–	*19.5 %*	–	–	***45.4 %***	*29.9 %*	*2.7 %*	*2.4 %*	99.9 %[f]
Average initial size of firm employment	2.8	2.0	2.0	2.3	1.8	2.0	5.5	3.5	
Average size at the second survey	–	2.7	2.6	2.6	6.3	2.6	4.8	2.5	
Average size at the third survey	–	2.9	–	–	9.0	2.6	4.1	1.2	

[a]Before the second survey
[b]Between the second and the third survey
[c]100 % not achieved due to rounding
[d]When setting up
[e]At the second survey
[f]At the third survey

to be slightly superior, on average (57.1 % versus 55.1 %). Cressy explains this result by the fact that legal status may serve as proxy for or signal aspects of firm quality. "A limited liability company is, in the view of bankers and others, a more sophisticated business than a Sole Trader or Partnership. Its owners are more likely to have a strategy for success and can deal with the additional tax complexities and administrative issues it involves. Hence it signals both greater human capital and business acumen and predicts a higher survival rate" (Cressy and Bonnet 2012). Once the deletions described above are carried out, the sample stands at 24,623 firms (see Table 1).

Between survey 1 (2002) and survey 2 (2005), 7323 firms (or 29.7 % of the total start) ceased to exist. These firms were dropped from the analysis, leaving a sample of 17,300 firms. Because we rely on firms that have invested during 2004–2005[2] and that are still surviving in 2007, we removed 4758 firms that have not invested (3662 + 1096) and 2136 firms that have invested but had disappeared between 2005 and 2007. This reduced the sample to 10,406 firms that had invested and were still surviving in 2007 including 2727 High Growth firms -HG- (they represent 11.08 % of the selected sample at the date of creation), 6170 Average Growth firms -AG- (25.1 % of the selected sample at the date of creation), 364 Average Decrease firms -AD- (1.48 % of the selected sample at the date of creation), and 1145 High Decrease firms -HD- (4.65 % of the selected sample at the date of creation).

2.2 Definition of Growth

A commonly used variable to measure firm growth is change in the labor force (Brüderl and Preisendörfer 2000; Birch 1987; Autio et al. 2000; GEM 2005). Growth in employment delivers economic and more general social value as jobs are created leading to additional economic spending and household and community vitality. Taking advantage of the variables provided by the SINE database, we consider this variable as the total salaried and non-salaried employment of the firm to include the:

- Non-salaried manager (business manager or co-business manager with majority ownership),
- Co-worker spouse and/or family members giving assistance (full time or part-time),
- Salaried manager, not already designated above,
- Permanent salaried employment contract and fixed-term salaried employment contract, not already designated above,

[2] We select firms that have invested to follow the theoretical models.

- Other salaried people including a trainee with a contract, apprentices, contracts of qualification, and contracts of employment initiatives, not already designated above.

To consider changes in the rate of growth of employment over the study period, we first create two categories defined by whether the firm employment grew or declined from launch over the study period. Then, we split each of these categories into two further groups in terms of the rate of growth (or decrease) over the period. This results in four study categories:

- **High Growth (HG)** = 100 % growth and more
- **Average Growth (AG)** = zero to 100 % growth
- **Average Decrease (AD)** = less than zero to 50 % decline
- **High Decrease (HD)** = 50 % and more decline

Table 1 shows that for all firms launching with the first survey, 4.7 % of limited liability firms persisting through the full study period showed a decrease in employment of over 50 % (HD), 1.5 % a decrease to 50 % (AD). On the growth side, 25.1 % of firms showed an increase to 100 % (AG) and 11.1 % showed an increase over 100 % (HG). Please see Annex 1 for more information on the building of classes of growth.

A final variable, firm survival, is a necessary pre-condition to studying firm growth. By the end date of the 5-year study, 42.9 % of the firms that launched had ceased to exist (Table 1). For this study, non-survival was determined by the cessation of activity—voluntary or involuntary.

2.3 Classes of Entrepreneurial Behavior as a Proxy of Product Market Strategy

A variable is constructed to express the strength of the firm's entrepreneurial behavior in its market based on five questions of the follow-up survey carried out in 2005 (SINE 2002-2). These questions are related to the market policy implemented by the new firm during the years 2004–2005. The items measure efforts for increasing the activity, advertising, prospecting of clients, price increases and development of sub-contracting work given to other firms,[3] all of which serve as growth indicators. An entrepreneurial behavior (EB) score represents the summation of the values of the index that indicate growth behavior from a high of 5 to a low of 0 (Table 2).

Then six dummy variables are built representing each total score 5-0:

[3] Except for classical duties that may be subcontracted like accounting, business administration, transport etc.

Table 2 The construction of an entrepreneurial behavior (EB) score index

Questions	Modalities of reply	Entrepreneurial behavior index
What has been your behavior over the last 2 years?	Increasing the activity	1
	Maintaining the activity at its level	0
	Attempting to safeguard the activity	0
Have you made advertising efforts over the last 2 years?	Yes	1
	No	0
Have you made efforts to prospect new clients over the last 2 years?	Yes	1
	No	0
Have you decreased prices over the last 2 years?	Yes	1
	No	0
Have you regularly given subcontracting work (to other firms) over the last 2 years?	Yes	1
	No	0

- EB5: very high level of market entrepreneurial behavior
- EB4: high level
- EB3: medium level
- EB2: weak level
- EB1: very weak level
- EB0: lack of market entrepreneurial behavior

We also gather the EB scores 3–5 to distinguish market aggressive firms against EB scores 0–2 representing market non-aggressive firms.

2.4 Classes of Intensity of Resorting to Debt as a Proxy of the Financial Decisions

The SINE database does not provide firm quantitative financial data, so in contrast to previous studies that are based on accounting data (Honjo 2000; Prantl and Almus 2002), we build a qualitative financial variable, "intensity of resorting to debt". This variable is assumed to represent the financial policy of the firm during the first years of life, i.e., the entrepreneur's willingness and ability to go into debt. The variable is built from the SINE 2002-2 survey responses reflecting entrepreneur activity in the years 2004–2005.

The policy of indebtedness is estimated in a qualitative way. The mode of management of the cash requirement and the main financing mode of investments over the 2 years are combined to measure the propensity to indebtedness of the firm. In terms of the management of the cash requirement, we synthesize the information into three main financing modes as follows:

- **"Equity Capital Mode" (D1),** includes entrepreneurs/firms that exclusively finance the firm with one or several types of equity capital
- **"Mixed Debt and Equity Mode" (D2 and D3)** represents joint debt and equity mode of financing
- "**Debt Mode" (D4)** category represents the entrepreneur who exclusively resorts to one or several types of borrowing

This variable then represents the propensity of resorting to debt in managing cash requirements and in financing investments. The priority has been given to the financing mode of investment in the construction of this variable. We consider that for firms financing their investments only through equity capital, the management of the cash requirement is not important. We then distinguish four main classes of intensity of resorting to debt.

- **D_1: minimal intensity of resorting to debt:** The firm never resorts to debt or the firm resorts to debt only for its cash requirement
- **D_2: medium intensity of resorting to debt:** The firm finances its investments through both equity capital and debt
- **D_3: high intensity of resorting to debt:** The firm always resorts to debt to finance its investments
- **D_4: maximal intensity of resorting to debt**: The firm always resorts to debt to finance its investments and its cash requirement

We then proceed to investigate in which ways the debt/entrepreneurial behavior combinations alter the firm's growth outcomes (Chart. 1).

2.5 Descriptive Analysis

Among firms that survived to the end of the observation, we see that firms which belong to the HG category are, on average, more aggressive than the other classes. Also, the share of market aggressive firms is higher for the medium intensity of

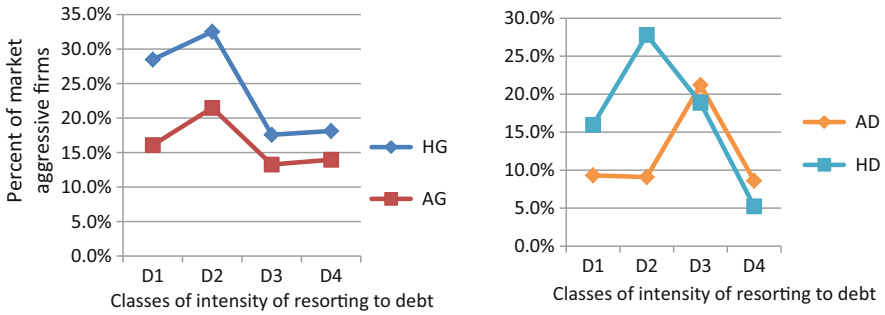

Chart. 1 Percent of market aggressive firms according to the categories of growth for each class of intensity of resorting to debt

resorting to debt, except for the AD category. The AG category has the same pattern as the HG category, but with some lesser degree of entrepreneurial behavior. AD and HD categories display a very low entrepreneurial behavior for the maximal intensity of resorting to debt.

3 Method and Results

We use a multinomial logic analysis for firms that survive to 2007. We use an unordered model (proc Catmod in SAS) because the test upon the same effects of the explanatory variables regardless of the dichotomization of the dependent variable does not hold (Table 3). We also retain a set of control variables.

Numbers represent the exponential of the coefficients of the regression. They can be interpreted as odds of appearance of the modality regarding the population considered and taking into account the reference class. We present only the comparison between the class of HG (high growth) firms with the others.

If we consider the intensity of resorting to debt, we can see that this variable is important in splitting the categories of HD (high decrease) and HG (high growth) firms, with HD firms more prone to go into debt. This is the same result for maximal

Table 3 Financial policy, entrepreneurial behavior and firm growth

Model 1[a]	Modalities	Comparison classes of growth		
		AG/HG	AD/HG	HD/HG
Intensity of resorting to debt	D4	1.38***	1.140	1.32**
	D3	1.072	0.873	1.45***
	D2	**Réf. class**	**Réf. class**	**Réf. class**
	D1	1.99***	2.05***	2.36***

Model 2	Modalities	Comparison classes of growth		
		AG/HG	AD/HG	HD/HG
Entrepreneurial behavior: Five classes	EB5	1.01	0.49	ns
	EB4	0.39***	ns	0.32***
	EB3	0.35***	0.19***	0.26***
	EB2	0.50***	0.41***	0.30***
	EB1	0.66***	0.53***	0.68***
	E.B.0	**Réf. class**	**Réf. class**	**Réf. Class**

Model 3	Modalities	AG/HG	(AG-AD-HD/HG)
Intensity of resorting to debt*EB in two classes	D4 **Réf. class** Non aggressive	0.75**	ns
	D3 **Réf. class** Non aggressive	0.71*	ns
	D2 **Réf. class** Non aggressive	0.55***	ns
	D1 **Réf. class** Non aggressive	0.50***	0.218***

[a]For results on control variables, see annex 2, Table 4.

intensity of resorting to debt for AG (average growth) firms against HG firms. For example for the maximal intensity of resorting to debt, the probability to belong to the category of AG firms is 38 % greater than to belong to the class of HG firms. On the other side, a weak intensity of resorting to debt is also always the signal for not belonging to HG firms. It appears that the reference modality, i.e. "medium intensity of resorting to debt", is the most favored class of debt for HG firms. This suggests that a financial structure including a reasonable level of debt is a determinant of firm growth.

When the number is less than 1 we take into account the complement. For example, for the high level of the variable, Entrepreneurial Behavior (EB4), in the comparison of the category of AG firms against the category of HG firms, we can interpret the result as follows: for the firms that set up a high level of entrepreneurial behavior (EB4), in comparison with doing nothing (category EB0), the probability to belong to the HG firms class is 61 % (1–0.39) higher than to belong to the category of AG firms.[4] Whatever the subpopulations, entrepreneurial behavior characterizes firms belonging to the class of high growth firms. As a consequence, when the entrepreneur adopts a proactive attitude, s/he is more prone to conduct a firm which grows.

With the Entrepreneurial Behavior variable measured in two classes, we perform several regressions splitting each reference class (one for each class of debt) between aggressive and non-aggressive firms. We find that entrepreneurial behavior improves the probability of a firm belonging to the category of high growth firms for three classes of financial structure: the class "weak intensity of resorting to debt", for the class "medium intensity of resorting to debt", and for the class "maximal intensity of resorting to debt". Because several models imply that getting into debt induces aggressiveness, we implement a correction for endogeneity (Lollivier 2001). Results are not modified, only for the class "high intensity of resorting to debt", for which now, aggressiveness does not improve the probability to belong to HG firms.

4 Discussion

For new firms in France which have invested, the proportion of firms that display entrepreneurial behavior is greater for those firms that have a medium intensity of resorting to debt (D2 firms). These D2 firms have access to the widest financing range (both debt and equity capital) and they set up sizable investment projects on launch. D2 firms also show the highest level of initial capital invested. Indeed, 26.3 % of the firms of this class had a level of invested capital greater than 40,000 euros for 21.2 % of the total population. Furthermore, small projects (less than 7623 euros) are under-represented: 30.2 % in the class and 37.1 % in the total population. Consequently, among all classes of financial structure, the D2 firms can be identified as the most dynamic new firms in France in 2007.

[4] The odds of belonging to the class of AG firms at this level of aggressiveness is 39 % of the odds of an enterprise that has a level EB0. It means that the odds of belonging to AG firms when EB0 is 2.56 times (1/0.39) more than belonging to the group of AG firms when EB level is 4.

A reduction of the proportion of market aggressive firms linked with an increasing intensity in acquiring debt can be noticed from D2 to D4 (i.e. the debt category representing the entrepreneur who exclusively resorts to one or several types of borrowing). Two interpretations may be suggested for firms belonging to the higher classes of debt: either these firms cannot afford to sustain an entrepreneurial behavior or they fear exposing themselves to a greater risk of exit in case of a high market aggressiveness. Another explanation could be that, due to the insolvency risk, the interest rate on the debt increases with the amount of the debt, which in turn induces a reduction in the scope of the entrepreneurial behavior.

Once the entrepreneurial decision is taken, a proactive attitude insures a net and clear prevalence of the probability to belong to the class of high growth firms. This entrepreneurial orientation can be related to some advantages, perhaps a better recognition of market opportunities that allows these firms to benefit from first mover advantages (better knowledge of the market, creation of entry barriers, reputational advantage. . ...), i.e., the Stackelberg advantage. On the other hand, there may be a true uncertainty about the acceptance of the new product/service by customers. Sometimes this increases the success odds for the second or the third entrant in the market. In that sense the companies that have a better chance of strong growth may be the most deviant, the most risk engaged, the firms better able to adapt to uncertainty. Still, financial means are crucial as they allow the entrepreneur to implement the firm's market strategy.

When comparing the category of high growth firms to average growth firms, some interesting characteristics are found with control variables (Annex 2, Table 4). For example, high growth firms are not allied with a main motivation to resolve unemployment or to take advantage of an identified opportunity. Rather, a taste for entrepreneurship and independence is identified as leading to a firm's placement in the category of firms most successful in creating jobs over time.

The probability to belong to the high growth firm category is more likely for an entrepreneur who has work experience—in the same branch of activity—obtained within a large firm or a firm of medium size. Additionally, having launched an average project increases the chance of launching a high growth venture as compared to an average growth. Further, belonging to the branches of industry that are considered as innovative by the French National Institute of Statistical and Economic Studies (INSEE) is not associated with the high growth firm category. Yet high growth is related to the implementation of organizational innovations. If innovation is also a strong characteristic of these firms, the innovation does not necessarily proceeds from a new technology.[5]

Finally, these entrepreneurs are in the middle age range (30–50 years) and they are not distinguished across the two growth categories by level of education. They

[5] We acknowledge the importance of marketing and organizational innovations (for example, low cost air transport, models permanently renewed -ZARA-, public transportation -Vélib). The performance of a company in innovation is not defined by its number of patents. According to the European Commission 36 % of patents are not used.

are more likely to be men than women. Limited access to networks, specifically financial networks, constitutes a serious impediment to female entrepreneurship and especially for high growth new ventures (Bel 2009; Nelson and Vosmek 2014). Further, being a craftsman, i.e. belonging to the *Chamber of Métiers*, is associated with high growth firms in all cases.

5 Conclusion

With the database SINE we have the possibility to measure how new firms create employment over time in the national French case. The challenge is important due to the weak entrepreneurship propensity in France (Abdesselam et al. 2004) and the low levels of development of these new firms (Abdesselam et al. 2014; Schane 2009), despite strong national interest in promoting this type of entrepreneurship.

Building more entrepreneurship in the high growth category requires that we look at entrepreneurial spirit at the individual, generational level. We may need new training and a new outlook on entrepreneurship from those new to the labor market. For now, this research shows that in recent years, high growth entrepreneurship is most likely the path of those holding other types of work experience aged between 30 and 50.

A more favorable social climate for new businesses will also require improvements in the skills of European entrepreneurs and support from the infrastructure that includes government, large firms and other entrepreneurs. Development in these areas may eliminate the obstacles to new firm creation and may build interest in the growth of companies. It is a question of filling the gap which exists between the perception of the desirability to become an entrepreneur and the real acting out to undertake the management of firms for growth.

Our findings show that a small subset of new firms in France, exhibiting particular operational and financial patterns, have been at the origin of roughly 50 % of jobs created by the cohort within a 6-year period. We also find that certain entrepreneurial behaviors on the part of the founder/s is favorable for survivor firms to belong to the class of high-growth firms existing at the end of the observation.

This leads to a recommendation for the increased development of incubators as well as continued support for the creation and growth of seed money and private financing networks of venture capitalists and business angels (Aernoudt 2004). A recent study in the case of France (KPMG 2010) points out that some characteristics are to be found among gazelles.[6] They have a conquest stance with a focus on growth. They also have the capability and the willingness to take risk.

[6] The methodology does not retain only young firms but firms that have a turnover between 10 million and 300 million euros and have registered a growth of their turnover of at least 4 times more than the average growth in their branch of activity since 2001. 2000 firms have been identified, among them young firms (less than 15 years) have a higher growth rate.

Annex 1: Classes of Growth

Considering that it is easier to register a high growth firm, if the initial size is low, we correct the rate of growth according to the initial size of the firm. The correction is the following: for the category of high growth firms (HG), the rate of growth must be superior or equal to one, if the initial size of the labor force is 5 or more employees, that is to say that the firm has to at least double its number of employees. If the initial size is 4 employees, the rate of growth must be superior or equal to 1.25 (from 4 employees to 9, at least). If the initial size is 3 employees, the rate of growth must be superior or equal to 1.33 (from 3 employees to 7, at least). If the initial size is 2 employees, the rate of growth must be superior or equal to 1.5 (from 2 employees to 5, at least). If the initial size is 1 employee, the rate of growth must be superior or equal to 2 (from 1 employee to 3, at least). These growth rates can be translated into compounded annual growth rates: 1–3 is equivalent to + 24.7 % per year, 2–5 is equivalent to + 20.11 % per year, 3–7 is equivalent to + 18.46 % per year, 4–9 is equivalent to + 17.6 % per year and finally up to 5 and more to double the initial size is equivalent to an annual growth of 14.87 % per year.

Annex 2: Control Variables

Table 4 Results for the control variables (Model 1)

Variables	Modalities	AG/HG
Motives of the start-up	Motive new idea	1.01
	Motive taste for independence	1.14**
	Motive taste for entrepreneurship	0.81***
	Motive opportunity	1.072
	Example of surrounding	1.043
	Unemployed, choice	1.15*
	Unemployed, constraint	0.86
	Other motive	1.20**
Age	Less than 30 years old	0.89
	30–50 years old	0.84**
	More than 50 years old	Ref Class
Gender	Woman	1.17**
	Man	Ref Class
Level of education	No diploma	0.96
	Up to bachelor	0.93
	Bachelor and more	Ref Class
Nationality	French	1.06
	Foreign from European Union	1.25
	Foreign from outside European Union	Ref Class

(continued)

Table 4 (continued)

Variables	Modalities	AG/HG
Experience of Entrepreneurship	Never	1.01
	Has already started up a firm	Ref Class
Duration of experience in the same branch of activity * Size of the firm where the experience was acquired	Less than 3 years, less than 10 employees	0.83
	Less than 3 years, 10–250 employees	0.78
	Less than 3 years, more than 250 employees	1.03
	3–10 years, less than 10 employees	0.82**
	3–10 years, 10–250 employees	0.63***
	3–10 years, more than 250 employees	0.57***
	More than 10 years, less than 10 employees	0.98
	More than 10 years, 10–250 employees	0.87*
	More than 10 years, more than 250 employees	0.70***
	No experience	Ref Class
Innovative branch	Belonging to innovative branches of activity	1.13
	Not belonging to innovative branches of activity	Ref Class
Types of innovation	Introduction of innovative products, marketing concepts, new services	0.92
	Introduction of new methods or processes	0.90
	Introduction of a new organization	0.79***
Amount of money invested to set-up the firm	Less than 8000 euros	1.00
	Between 8000 euros and 40,000 euros	0.83***
	More than 40,000 euros	Ref Class
Obtaining public financial aid	Public financial aid obtained	1.01
	Public financial aid not obtained	Ref Class
Structure of capital	80–100 % of debt	0.99
	60–80 %	1.07
	40–60 %	0.87*
	20–40 %	1.14
	−20 % of debt	0.92
Employees at the beginning	One salaried and more	0.71***
	No employee	Ref Class
Craftsman	Craftsman	0.77***
	No craftsman	Ref Class

(continued)

Table 4 (continued)

Variables	Modalities	AG/HG
Subcontracting work done	Subcontracting work done, main source of turnover	1.07
	Subcontracting work done, secondary source of turn over	0.96
	No Subcontracting work done	Ref Class
Competition	Weak feeling of the competition	1.35***
	Medium feeling of the competition	0.95
	Strong feeling of the competition	Ref Class
Branch of industry	Food industry	0.57**
	Industry	0.81**
	Transport	0.58***
	Construction	0.33***
	Catering	0.87
	Household services	0.84*
	Services for the enterprises	0.74***
	Education, health	0.61***
	Trade, Repair	Ref Class
Province	Belonging to non-entrepreneurial regions	1.12**
	Belonging to entrepreneurial regions (Île-de-France, Rhône-Alpes, Midi-Pyrénées, Languedoc-Roussillon, Provence-Alpes-Côte-D'azur, Aquitaine)	Ref Class
Intercept		8.95***

*, **, *** means the rejection of the null hypothesis at the 10 % level (respectively 5 %, 1 %)

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Innovation, Information Technology and Performance: An Examination of the Iberoamerican SMEs Context

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Abstract

Innovation is considered an important factor and key variable to improve both the use and adoption of information and communication technologies as well as to achieve better business performance levels in Small and Medium-sized Enterprises (SMEs). At the same time, an appropriate alignment of innovation activities with the use of information technologies helps businesses to improve their levels of performance. The purpose of this paper is to present an empirical research that closely examines the current relationship among innovation, information and communication technologies, and SMEs performance. For this, a sample of 1989 enterprises was obtained from 21 countries in Iberoamerica. The results have revealed that innovation has a positive and significant impact on both information and communication technologies (ICT) and SMEs performance.

Keywords

Innovation • Information technology • Performance • SMEs

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1 Introduction

The twenty-first century is recognized for, among other elements, its high uncertainty in all types of organizations, mainly in Small and Medium-sized Enterprises (SMEs), which are called to develop innovation activities and to increasingly use information and communication technologies (ICTs), not only to achieve major levels of performance but to remain in the market (Mohsin et al. 2013). In consequence, companies are improving their business strategies to obtain or increase their business performance levels in such turbulent environments, in which innovation and ICTs are considered critical elements that provide to businesses, especially to SMEs, sustainable competitive advantages (Nonaka and Takeuchi 1995).

That being, there are relatively few published theoretical and empirical studies that correlate innovation, ICTs and firm performance (Johannessen et al. 1999; Sambamurthy et al. 2003), and even fewer studies that correlate these three constructs in a SMEs context (Xiang and Lan 2001; Larsen and Lomi 2002; Izushi 2003; Tanabe and Watanbe 2005). In particular, Cooper (1998) was one of the pioneer researchers who considered that the existing advances in computing technology, software cost reductions and technology advances that offer better opportunities to increase innovation activities, were not only available for large firms, but also for SMEs.

In this sense, according to Dibrell et al. (2008), Franquesa and Brandyberry (2009), there is a need for more research about these three variables. Accordingly, the present study presents two main contributions. The first one is to provide a research effort on these three constructs together, because published research has only considered innovation in products, processes and systems in a separate form. Therefore, in this paper we present an analysis that defines in a more precise approach the effects of innovation on ICTs, and business performance, as recommended by Vermeulen (2005), Olson et al. (2005) and Wolff and Pett (2006). The second contribution is that this research is carried out associating SMEs, an approach that has rarely been applied before, with only a few studies available so far (Huang and Liu 2005), while most published research related to these constructs has commonly been focused on large firms contexts.

2 Literature Review

An analysis of the current literature in the field of innovation leads to the proposal that innovation activities can be divided into two special areas of research (Brown and Eisenhardt 1998). First, it is possible to analyse and discuss innovation in a national, industrial, and firms context (O'Neill et al. 1998), in which innovation can be defined as a group of practices in technology, strategies and business management that organizations apply as daily activities, in comparison with those used by other companies that have been previously adopted and implemented, or that have

been significantly redesigned and improved in a certain process (O'Neill et al. 1998).

Second, innovation can be analysed by its influence on business structures, strategic processes, and customers and consumers, through marketing and new product development (Zahra 1993; Dibrell and Craig 2006). In this research area, innovation can be defined as new products, processes and management systems created by businesses to adapt themselves to market requirements (Damanpour 1991). As a result, innovation activities carried out by organisations can be understood through several essential dimensions: radical, incremental, products, processes, managerial and technological (Camison-Zornoza et al. 2004).

Accordingly, the three most common dimensions of innovation found in the literature are products, processes and management systems. Innovation creates products or services, and innovations in management systems show changes or improvements in the organisation management (Camison-Zornoza et al. 2004). Innovation in products, processes and management systems represent potential developments and can provide resources to gain higher performance levels and competitive advantages (Dibrell et al. 2008).

On the other hand, when firms, particularly SMEs, consider the use and adoption of ICTs as a competitive advantage, it goes along with increased innovation and implementation of strategic plans to significantly improve performance and competitiveness in their business (Dibrell and Miller 2002; Oh and Pinsonneault 2007; Aral and Weill 2007). During the recent years, organisations have significantly increased investments on ICTs (Deveraj and Kohli 2003). The use and adoption of ICTs by SMEs have increased, and development of the necessary business skills has accelerated in order to obtain higher performance levels and competitive advantages (Kohli and Devaraj 2003; Ravichandran and Lertwongsatien 2005).

SMEs' performance can be notably better, when there is a synergy between innovation and ICTs (Dibrell et al. 2008), because companies that have adopted and used ICTs further show an increment of their operative elements compared to those that have not (Huang and Liu 2005). Accordingly, investment in ICTs not only stimulates productivity and performance in SMEs, but significantly increases both innovation and profits in the short term (Johannessen et al. 1999).

In such a case, in order to enable SMEs to develop their capacity for innovation in a sustainable manner and to incorporate innovation activities in their organization strategies, they need all resources available so they can develop innovation on products, processes and management systems. As a result, they can solve their creativity issues and connect innovations with ICTs and business performance (Bhaskaran 2006). This is because ICTs are critical elements to develop innovation activities (King and Burgess 2006). Hence, business performance can systematically improve, if SMEs increase innovation activities complemented with ICTs initiatives, since it will also amplify customer loyalty and raise the demand for products and services (Frishammar and Hörte 2005).

At the same time, SMEs that require to exhibit higher responsibility levels and to make flexible products, processes and management systems must correctly coordinate their capabilities to make them efficient and to improve internal and external

competencies (Tanabe and Watanbe 2005; Zahra et al. 2007). Such efforts have to remain ongoing for long periods of time following the adoption and implementation of ICTs, so they can obtain the desired, essential and fundamental results for business operations (Dibrell et al. 2008). This is mainly because both innovation activities and ICTs improve SMEs' performance and such activities need to be incorporated into the strategic level of this type of organization (Dewett and Jones 2001).

In this sense, various researchers, academics and professionals in organizational and computing sciences have determined that innovation activities present a direct impact on ICTs, and these interrelationships have an impact on SMEs' performance (Dibrell et al. 2008). Further, Lee and Runge (2001) have defined in their study on SMEs that companies are more innovative when they are prone to successfully adopt and use ICTs, than those that are less innovative. Additionally, those innovative firms devote additional economical and financial resources for acquisition and enhancement of ICTs than the less innovative kind. Therefore, considering the previous information, it is feasible to establish the first hypothesis as follows:

H1: There is a positive relationship between innovation and ICTs usage

Even though the majority of innovations are carried out by SMEs, which represent the greatest number of companies operating in territories in any country (SBA 2004), most of the empirical research published in the literature has been focused on innovation inside large companies (Gudmundson et al. 2003; Verhess and Meulenberg 2004). Furthermore, in the literature there is an increased recognition for SMEs as the source of most of the innovations activities, in products, processes and management systems (Freel 2003), so it is possible to consider innovation activities in SMEs to be totally different from those initiated in big firms (Eden et al. 1997; Audretsch 2001).

In this way, SMEs cannot only identify, in a more efficient and fast way, market alternatives that require more innovation in products and services, but they can also significantly improve relationships with customers and final customers, and improve the firm's performance compared to large companies (Dibrell et al. 2008). Moreover, Brown and Blackmon (2005) consider in their study that SMEs can easily combine production flexibility with a specialization of products and services, which create tailored products and services for customers and consumers, while obtaining a higher level of business performance. Thus, considering this information, it is possible to establish the following second hypothesis:

H2: The higher the level of innovation, the higher the level of business performance

On the other hand, publications of empirical research that demonstrate innovation processes requiring ICTs usage, as a key element to generate higher performance level, have been largely ignored in the literature (Bharadwaj 2000; Dewett and Jones 2001). Thus, more empirical research publications are necessary

in order to provide evidence about the existing relationship between ICTs and business performance, specifically in a SMEs context (Verhess and Meulenberg 2004; Huang and Liu 2005). Thus, it is important to consider SMEs, because these types of companies have a close relationship with the use and adoption of ICT, which is relevant to the analysis and discussion (Dibrell et al. 2008).

In fact, Khazanchi (2005) highlights the need to incorporate and to analyse alternative variables in organizations when considering the existing relationship between the use and adoption of ICT and business performance, for instance, innovation. Hence, Khazanchi (2005) has concluded that ICTs have a positive effect on SMEs' performance when other variables have been considered, such as innovation activities. Accordingly, when organizations, or to be precise, SMEs, consider innovation in their organization strategies, the adoption and use of ICTs demonstrate more positive and significant effects on performance. This way, in consideration of the previous information it is feasible to present a third research hypothesis in this paper, as follows:

H3: There is a positive relationship between ITCs usage and business performance

Figure 1 shows the formulated research hypotheses and the existing relationships among the three constructs:

3 Methodology

An empirical study was carried out in order to corroborate the established hypotheses, specifically in 1989 surveyed SMEs from 21 countries in Iberoamerica. The survey was organized in three sections. The first section presents the innovation activities (products, processes and management systems) reported by SMEs during the last 2 years. The second section is related to ICTs and the third section is about business performance. The companies considered were those with 5–50 workers. The data collection was conducted as a telephone survey using a random sample of SMEs; surveys were applied from August to December 2011.

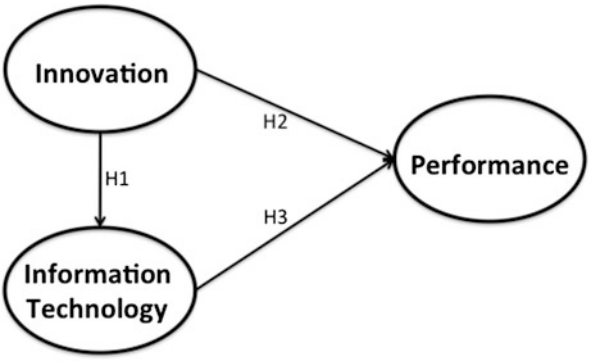

Fig. 1 Theoretical model

To measure current innovation activities, managers from 1989 Iberoamerican SMEs were asked whether innovations have been developed in their organisations during the past 2 years before this survey (1 = Yes and 2 = No); especially innovations on products/services, processes and management systems. The companies that answered *yes* were asked to define an importance level of such innovations, from one, as less important, to five, as very important. This is because a subjective approach from a managerial perspective about innovation results is deemed to be the most appropriate method for SMEs studies (Hughes 2001; Garcia et al. 2009).

Table 1 reports the descriptive statistics, mean and standard deviation, associated to the different items that compose innovation activities. Regarding product innovation, the data shows that most of SMEs carry out changes or improvements in their products, a similar situation is found in the process innovation features. However, management innovation is only carried out by a few firms.

To measure the current level of ICTs usage, managers and owners from the 1989 Iberoamerican SMEs were asked to respond if their firms have (1 = yes and 0 = no) the following elements: (1) Does your company have email? (2) Does your company have Web? (3) Does your company buy and sell on the Internet? (4) Does your company use electronic banking? (5) Does your company market using the Internet? (6) Does your company have corporative Internet? From the answers obtained, it was possible to create an ICTs variable, by adding all affirmative responses. This resulted in a nominal variable with values from 0 to 6. Similar variable configurations can be seen from Garcia (2007) and Garcia et al. (2009) studies.

Table 2 shows the statistical descriptive, percent and standard deviation, associated with the six items of information technology. Thus, *Does your company*

Table 1 Innovation activities: mean response and standard deviation

Items	Percent[a]	Standard deviation	Mean[b]	Standard deviation
Product innovation				
• Changes or improvements in products	74.7	0.435	4.14	0.796
• Commercialization of new products	67.2	0.470	4.12	0.837
Process innovation				
• Changes or improvements in manufacturing processes	65.3	0.476	3.95	0.850
• Acquisition of new equipment	69.1	0.462	4.08	0.863
Management innovation				
• Management or administration	57.6	0.494	3.81	0.876
• Purchasing	58.2	0.493	3.89	0.867
• Commercial/Sales	64.9	0.477	3.93	0.897

[a]Managers were asked to indicate whether their firms had introduced innovation during the previous 2 years (1 = Yes and 0 = No)

[b]And to rate the importance of that innovative activity (1–5 Likert scales, with 1 = Not important to 5 = Very important)

Table 2 Information technology: mean response and standard deviation

Item	Percent[a]	Standard deviation
Information technology		
• Does your company have e-mail?	96.1	0.194
• Does your company have Web?	70.5	0.456
• Does your company buy and sell on the Internet?	57.9	0.494
• Does your company use electronic banking?	69.2	0.462
• Does your company use the Internet?	52.8	0.499
• Does your company have corporative Internet?	43.8	0.496

[a]Managers were asked if they have the following infrastructure in their company (1 = Yes and 0 = No)

Table 3 Performance: mean response and standard deviation

Item	Mean[a]	Standard deviation
Performance. In comparison to key competitors, the company		
• Offers products with better quality	4.32	0.791
• Has more efficient internal processes	4.00	0.936
• Achieves customer satisfaction	4.32	0.717
• Adapts itself to market changes	4.10	0.823
• Is growing	3.89	0.970
• Is more profitable	3.84	0.977
• Has satisfied and motivated employees	4.15	0.798
• Presents less work absenteeism	4.04	1.031

[a]Managers were asked to rank the importance of potential performance (1–5 Likert scales, with 1 = Not important to 5 = Very important)

have e-mail? (96.1), *Does your company have Web* (70.5), *Does your company use electronic banking?* (69.2), appear as the top three in terms of the use of information technology.

In order to measure current business performance, eight questions were used and measured with a Likert 5 rating scale, with limits 1 = totally disagree and 5 = totally agree, and adapted from Garcia (2007). Table 1 demonstrates such questions in detail. Table 3 shows the statistical descriptive, mean and standard deviation, associated with the 8 items of performance. Thus, *Offers products with better quality* (4.32), *Achieves customer satisfaction* (4.32) and *Has satisfied and motivated employees* (4.15) appear as the top three outcomes relating to performance.

In order to assess reliability and validity of the measurement scales we carried out a Confirmatory Factor Analysis (CFA) using the maximum likelihood method in the EQS 6.1 software (Bentler 2005; Brown, 2006; Byrne, 2006). The reliability of measures was assessed with Cronbach's alpha and the Composed Reliability Index (CRI) (Bagozzi and Yi 1988). All the measures showed a satisfactory level of reliability, exceeding the recommended level of 0.7 for Cronbach's alpha, and the CRI provided evidence about reliability and justifies the scales' internal reliability (Hair et al. 1995).

Table 4 Internal consistency and convergent validity

Variable	Indicator	Factor loadings	Robust t-value	Cronbach's alpha	CRI	AVI
Product innovation	IPS1	0.788***	1.000[a]	0.716	0.717	0.556
	IPS2	0.711***	28.925			
Processes innovation	IPR1	0.681***	1.000[a]	0.792	0.793	0.556
	IPR2	0.805***	28.613			
Management systems innovation	ISG1	0.781***	1.000[a]	0.799	0.801	0.576
	ISG2	0.852***	36.491			
	ISG3	0.627***	26.441			
Performance	PER2	0.630***	1.000[a]	0.845	0.847	0.599
	PER3	0.622***	16.184			
	PER4	0.786***	18.227			
	PER5	0.779***	18.852			
	PER6	0.796***	18.789			
	PER7	0.791***	18.937			

$S\text{-}BX^2 = 604.955$; df = 59; $p < 0.000$; NFI = 0.917; NNFI = 0.900; CFI = 0.924; RMSEA = 0.068
[a]Value parameters in the identification process
***$p < 0.001$

The CFA results are presented in Table 4 and reveal that the measurement model provides a good fit to the data according to the statistical adjustments ($S\text{-}BX^2 = 506.8322$, df = 215, p = 0.000, NFI = 0.900, NNFI = 0.915, CFI = 0.916, and RMSEA = 0.074). As evidence of convergent validity, the results of the CFA indicate that all items of the related factors are significant ($p < 0.001$), the size of all standardized factor loadings are above 0.60 (Bagozzi and Yi 1988) and the average variance extracted (AVE) for each pair of constructs is greater than 0.5, as recommended by Fornell and Larcker (1981).

Table 5 shows the discriminant validity through two different contrasts. On the one hand, considering a 95 % of reliability interval, none of the individual factors contains the value 1.0 (Anderson and Gerbing 1988). On the other hand, the variance extracted between each pair of constructs in the model is higher than the corresponding AVE (Fornell and Larcker 1981). These results conclude that this work reveals sufficient evidence of reliability, and convergent and discriminant validity.

The diagonal represents the average variance extracted, while above the diagonal the shared variance (squared correlations) are represented. Below the diagonal, the 95 % confidence interval for the estimated factors correlations is provided.

4 Results

We analyzed the theoretical model using the Structural Equation Model (SEM) with the EQS 6.1 software. We carried out a SEM with the same variables to verify the structure of the model and to obtain the results that allowed us to test the

Table 5 Discriminant validity

Variables	Product innovation	Processes innovation	Management systems innovation	Performance
Product innovation	**0.556**	0.425	0.086	0.040
Processes innovation	0.468–0.836	**0.556**	0.097	0.076
Management systems innovation	0.128–0.460	0.146–0.478	**0.576**	0.050
Performance	0.149–0.249	0.223–0.327	0.176–0.272	**0.599**

Table 6 Results of the structural equations model

Hypothesis	Structural relationship	Standardized coefficient	Robust value t
H1: The higher the level of innovation, the higher the level of TICs.	Innovation → Information T	0.690***	10.480
H2: The higher the level of innovation, the higher the level of performance.	Innovation → Performance	0.621***	5.085
H3: The higher the level of TICs, the higher the level of performance.	Information T. → Performance	0.256***	3.581

$S\text{-}BX^2$ $(df = 64) = 865.805$; $p < 0.000$; NFI = 0.909; NNFI = 0.900; CFI = 0.916; RMSEA = 0.079
***$P < 0.01$

previous hypotheses. The nomological validity of the theoretical model was tested by performing a Chi square test, in which the theoretical model was compared with the measurement model. The results indicate that the "no significant differences" are good at explaining the observed relationships between the latent constructs (Anderson and Gerbing 1988). The results of SEM are presented in Table 6.

The results obtained were presented in Table 6 that shows that according to the first formulated hypothesis, H1 ($\beta = 0.690$, $p < 0.01$), innovation has positive effects on the use of information technologies. In relation to the second hypothesis, H2 ($\beta = 0.621$, $p < 0.01$), the results indicate that innovation also has positive and significant effects on the company performance. Finally, according to the third hypothesis, H3 ($\beta = 0.256$, $p < 0.01$), the results show that information technologies also have positive and significant effects on SMEs performance. Therefore, it is possible to establish a close relationship among innovation, information technologies and SMEs performance.

5 Conclusion and Discussion

In conclusion, there are two main implications derived from the results obtained in this empirical research.

First, given the fact that innovation has a positive and significant relationship with ICTs use and SMEs performance, it is possible to conclude that managers and company owners must incorporate innovation in their products, processes and management systems, and not only as a critical element in their organization strategies, but as part of their daily activities. This is mainly because, according to the level of implementation and usage of innovation activities in organizations, an increment will be also obtained in the adoption and usage of ICTs, and consequently the economical and financial performance of Iberoamerican SMEs will be increased.

Second, by integrating innovation operations in SMEs as part of their daily activities, managers will additionally need to adopt and increment the use of ICTs, mainly because this type of technology enhances the firm's performance. If the firm has already incorporated this type of tool, then the company will have to renew such tools, but will also have to implement a continuous training system for their personnel that manage these technologies in such a way that it improves effectiveness and efficiency both internally and externally in the organization. Basically, this will permit Iberoamerican SMEs to significantly increase not only their performance level, but also their competiveness.

Furthermore, an important part of innovation that is conceived at a global level is generated by SMEs, and Iberoamerican SMEs are not recognized for being innovative. They are rather family businesses in which most of the managers are also the firm owners. Consequently, they carry out most of the management activities. Therefore, it is essential that managers implement an innovative organizational culture where employees and workers can develop ideas, innovative work and teamwork and at the same time be acknowledged by all workers in the organization.

At the same time, adoption, efficient and effective use of ICTs must play a critical role in Iberoamerican SMEs, for which managers have to honour their application. This is necessary not only in innovation activities developed by the firm, but also in all organizational activities that will let businesses improve their performance level. Similarly, SMEs must develop new actions in which ICTs in businesses are better employed. For example, products or services commercialization through the Internet, raw material purchasing over the Internet and the use of Internet banking, or the implementation of telework for some of their employees and workers.

Additionally, this paper presents various limitations that are important to consider. Firstly, the scale used to measure innovation, because three dimensions were considered and in future research it will be useful to incorporate alternative scales in order to corroborate present results. Secondly, the process of gathering information, because innovation, ICTS use and performance were only measured with qualitative data. Thus, in future research it will be necessary to integrate quantitative variables to corroborate if the same results can be obtained.

Thirdly, a limitation related to the measurement of innovation, ICTs use and performance, because seven items were used to measure innovation, six for ICTs and eight to measure business performance. Thus, in future research it will be useful to include more and alternative items in order to measure constructs. A fourth

limitation is that the surveys were applied only to SMEs managers and/or owners, then the results obtained can vary, if these were used in a different population, for instance, incorporating clients and customers in the survey. Hence, alternative populations should be considered in future research in order to validate the current results.

The last limitation is that only Iberoamerican SMEs with 5–250 workers were considered. Therefore, in future research it will be necessary to study firms with less than 5 workers, which in fact represent more than 60 % of the region's population of firms. Finally, a deeper analysis and discussion will be relevant, for example studying the effects on SMEs performance, if a more quantitative scale is used to measure innovation. What results can be obtained for ICTs in SMEs, if other dimensions are used to measure innovation? These and other unanswered questions along with future research perspectives can be studied.

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Part III

Entrepreneurial Individual Primers, Paths and Outcomes

Entrepreneurship and Hybrid Self-Employment

Dieter Bögenhold and Andrea Klinglmair

Abstract

The paper deals with self-employment focusing on one-(wo)man-firms as the smallest units of entrepreneurial companies. We have been trained to think in binary terms of reciprocal exclusion, where people belong to one or another category within the system of employment. Generally, one distinguishes between dependent work including blue- and white-collar workers on the one and independent (self-employed) workers on the other hand. What is very often neglected is that overlapping phenomena can be observed when people combine both categories. In these cases, dependent workers and independent actors have overlapping identities. We call those identities hybrid entrepreneurs. Empirical findings are related to a representative online sample. Conclusions show that the majority of the hybrid one-person enterprises operate only as a sideline business. This category of micro enterprises holds a classical dependent employment (main activity) and additionally works on a self-employed basis. In contrast, the share of one-person enterprises whose self-employment represents the main activity (main business) amounts to merely a bit more than 15 %. Finally, nearly one third of the analyzed one-person enterprises are mixed forms, hence, "true" hybrids lying between the category of main and sideline business.

Keywords

Entrepreneurship • Hybridity • Self-employment • Blurred boundaries • Precarious work

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This paper is about entrepreneurship, but it regards entrepreneurship in a non-conventional sense in order to tackle the content. The problem is that entrepreneurship as a term seems to be poorly defined and empirical phenomena are more complex in reality than public discourse sometimes suggests (Davidsson and Wiklund 2001; Davidsson 2003, 2015; Bögenhold et al. 2014a, b). Consequently, we have to talk about entrepreneurship in terms of not only one meaning, but of several meanings (Bonnet et al. 2010, 2012), and some of these contradict each other. If we employ the labor market category of self-employment as a proxy for entrepreneurship—which may occasionally be questioned, but which most closely resembles actual practice—it becomes evident that, in many countries, the majority of entrepreneurs belongs to the category of micro firms, which effectively exist as one-(wo)man-companies, with many of their number not even appearing in the yellow pages, or having their own premises, or a sign above the door.

The paper deals with self-employment focusing on one-(wo)man-firms as the smallest units of entrepreneurial companies. We have been trained to think in binary terms of reciprocal exclusion, where people belong to one or another category within the system of employment. Generally, one distinguishes between dependent work including blue- and white-collar workers on the one and independent (self-employed) workers on the other hand. What is very often neglected is that overlapping phenomena can be observed when people combine both categories. In these cases, dependent workers and independent actors have overlapping identities. We call those identities hybrid entrepreneurs (Folta 2007; Folta et al. 2010; Raffiee and Feng 2014). While "die-hard entrepreneurs" (Burke et al. 2008) are those actors, who are portrayed in public discourse and also in economics as agents who are dynamic, willing to expand and take risks, hybrid entrepreneurs seem to be of a different nature. The paper endeavors to add knowledge to this "different kind of nature", by providing empirical research findings.

1 Self-Employment in Transition

If we put overall "statistically clean" self-employment in relation to total employment, we obtain the rate of self-employment. Accordingly, 14.4 % of the total working population in the EU-28 is self-employed. Italy exhibits the highest self-employment rate (2013: 22.3 %), although it has followed a downward trend since 2004. The lowest self-employment rate is observed in Sweden (2013: 9.4 %), which is significantly lower compared to the EU-28. The subgroup of males exhibits a considerably higher rate of self-employment compared to females (Bögenhold and Klinglmair 2015a, b).

Is entrepreneurship primarily a transitional economic function, or is it a classification for specific labor market groups (e.g. the category of self-employed entrepreneurs)? The question has not really been decided and, in academics and

in policy, it leaves the decision open to pure arbitrariness.[1] Where the entrepreneurship discussion opts to follow the widely used practice, which identifies entrepreneurs as self-employed people and vice versa, the debate evolves to become a discussion of a sociology of social stratification and mobility and of labor market divisions. Such a variety of different entrepreneurial categories and related discussion about them does exist; among them are female entrepreneurs, migrant entrepreneurs, free-lancer entrepreneurs, academic entrepreneurs, micro entrepreneurs, agricultural entrepreneurs like farmers and fishermen, team entrepreneurs, elder entrepreneurship carried out by actors after their retirement, or social entrepreneurs, so that the divergencies are sometimes greater than the common attributes they share (Bögenhold and Fachinger 2007). Entrepreneurial activities continuously receive fresh blood through "underground mobility", drawn in from backgrounds like unemployment or blue-collar workers. The labor market dynamics and social mobility patterns are of great interest to researchers investigating the division of occupations and related dynamics in and for the economy. The general question is whether entrepreneurship is an economic function and/or an occupation or a vocation, or just a biographical job stage, which people move in and out of. On the one hand, due to increased recent trends of dynamics and related flexibility and uncertainties, people show up in the outfit of entrepreneurship, though they are sometimes just de facto laborers without social security benefits. On the other hand, due to secular changes in life-styles and values, an increasing number of free-lancers is emerging (not only but often in relation to the growing IT sector) (Kitching and Smallbone 2012; Burke 2012; Johal and Anastasi 2015; Shevchuk and Strebkov 2015), who just want to work on their own, without being involved in hierarchies (Hytti 2005). Very often, mobility patterns can be verified in a way that people move into independent self-employment by chance, need, or by following a concrete opportunity, and later return to dependent employment again in response to changing conditions (Bögenhold et al. 2014a, b).

In contrast to stereotypical assumptions, the phenomenon of entrepreneurship may look entirely different when it is studied as a phenomenon embedded in the labor markets and specific occupational contexts, applications and sectors (see e.g. Welter and Lasch 2008). Some types of small businesspeople and independent professionals belong to a category, which does not fit with an image of entrepreneurship. They do not show ambition for growth and they are sometimes very close to low income ranges, occasionally even to poverty (Kautonen et al. 2010; Shane 2008). Empirical studies on diverse groups of self-employed individuals in larger societal and labor market contexts may produce alternative pictures,

[1] The literature is full of definitions of entrepreneurship, "which differ along a number of dimensions, i.e. whether entrepreneurship should be defined in terms of dispositions, behaviour, or outcomes; whether it belongs in the economic-commercial domain or can be exercised also in not-for-profit contexts; whether it belongs only in small and/or owner-managed firms or in any organizational context, and whether purpose, growth, risk, innovation or success are necessary criteria for something to qualify as entrepreneurship" (Davidsson 2003, 316).

challenging stereotypical assumptions and rhetoric related to entrepreneurship (see Blackburn and Kovalainen 2008). Studying entrepreneurship also implies an acknowledgement of the blurred boundaries of entrepreneurship and dependent work. Hybrid self-employment is just one case of those blurred boundaries where one does not really know if those activities are primarily self-employment plus a bit of income through dependent work or, vice versa, dependent work plus a bit of income through self-employed work.

2 Empirical Study on One-Person-Enterprises in Austria

According to the Eurostat Database (2014), the category of solo-entrepreneurs with micro enterprises without further employees in their firms is about 59.9 % of all self-employed people in Austria. In the EU-28, by contrast, the share of solo-self-employed within total self-employment is even higher and amounts to 71.3 %. Furthermore, the Austrian statistics indicate the high relevance of one-(wo)man firms. According to the Austrian public census of company units ("*Arbeitsstättenzählung*"), 329,481 firms are led only by a solo-entrepreneur, representing 52.9 % of all Austrian firms (Statistik Austria 2013a, b). Statistics provided by the Austrian Chamber of Commerce ("*Wirtschaftskammer Österreich*") reveal a lower level of one-person enterprises with 266,910 units, which is due to the fact that a variety of types of freelancers are not included in the data. Compared to the total number of firms registered in the Chamber of Commerce, the share of one-person enterprises thus amounts to 57.3 %. Since 2008, the number of one-person enterprises in Austria has risen by 30.0 %. In the federal state of Carinthia there are 16,446 one-person firms listed in the register of the Chamber of Commerce. Here, the share of one-person entrepreneurs among all enterprises amounts to 55.6 %. Solo-firms have their domains in the business and craft sector, as well as the information and consulting branch, where the share of one-person enterprises among all enterprises is higher than 60 %. Additionally, with a share of 47.5 %, the trade sector has a high ratio of one-person enterprises.

Based on the evaluated data from official statistics, it can be concluded that one-person enterprises play an especially important role in the Austrian business sector. However, there is a lack of information about their economic and social rationalities: What are their motives for being self-employed? How satisfied are the one-person enterprises with their professional situation? What does their economic and financial situation look like, and finally, can their emergence be linked to an absence of opportunities in the labor market? In order to answer these questions, a comprehensive online survey was implemented in cooperation with the Chamber of Commerce in Carinthia. The survey is based on a questionnaire containing 52 questions in total. This questionnaire was developed and tested in a process lasting several months and was finally adapted for the online survey with the help of appropriate software (LimeSurvey). The contents of the questionnaire refer to the extent and motives of self-employment, client relations, success and satisfaction

with self-employment, future prospects of the one-person enterprises, and socio-economic characteristics.

In February 2014, a total of 9002 one-person enterprises were contacted by the Carinthian Chamber of Commerce and invited to participate in the online survey. The response rate was 7.0 %, resulting in a sample size of 626 one-person enterprises. The generated sample is representative with respect to the legal form (over 90 % individual entrepreneurs), age (mean age in the sample and in the total population: 47 years) and gender, with males being slightly overrepresented in the sample compared to the total population. The study has several findings, which are published in more detail elsewhere (Bögenhold and Klinglmair 2015a, b; Klinglmair and Bögenhold 2014; Bögenhold and Klinglmair 2014). This paper is primarily concerned with the phenomenon of so-called *hybrid* entrepreneurs located at the blurred boundaries of dependent and independent work.

3 The Phenomenon of Hybrid Self-Employment

3.1 Classification of Hybrid Self-Employed

In the sample subject to investigation, slightly less than two thirds (63.6 %) of the one-person enterprises are only self-employed and perform no additional activities. In contrast, about 9.6 % of the respondents exercise a second self-employed activity; a further 18.5 %—this reflects 116 one-person enterprises—have an additional dependent employment beside their business (see Fig. 1). The latter can be described as hybrid forms of entrepreneurs because of the combination between independent and dependent employment.

However, this result begs the question whether the additional dependent employment represents a necessity-driven secondary job in order to survive economically,

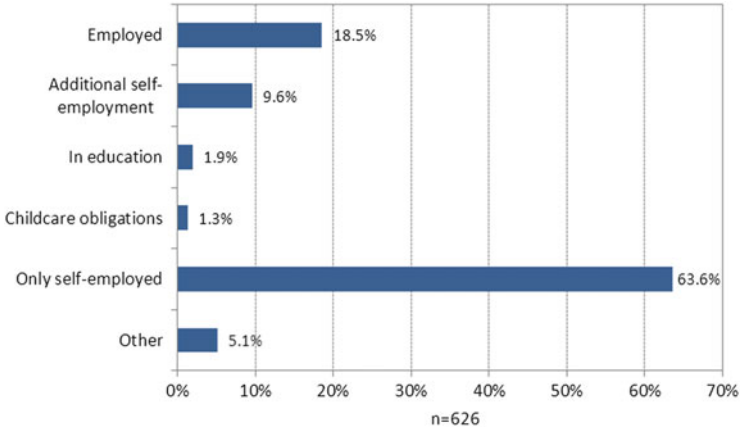


Fig. 1 Self-employment and additional activities (in %). *Source*: Own calculations

or whether the one-person enterprise, thus the self-employed activity, represents a secondary source of income. Hence, we can formulate two hypotheses regarding the phenomenon of hybrid self-employment.

- *Hypothesis (1)*: The small (one-person) enterprise is the main business and the domain of interest and activity, whereas a further dependent employment can be regarded as a secondary job.
- *Hypothesis (2)*: The dependent employment serves as major source of income and the entrepreneurial activity as one-person enterprise can be regarded as sideline business.
- *Hypothesis (3)*: The empirical data show rather indifferent cases, which oscillate between H 1 and H2, or which synthesize H1 and H2.

What we would like to do in the following is to test these formulated hypotheses. Accordingly, we tried to find a classification for the hybrid forms of one-person enterprises, i.e. those which pursue a combination between dependent and independent employment, which reflects the hypotheses shown above. First, the category "Main business" relates to hypothesis 1 (H1), indicating that the self-employed activity or the one-person enterprise respectively, represents the major source of income. The additional dependent employment constitutes a secondary job, which may in some cases be necessity-driven in order to survive economically. Second, the category "Sideline business" reflects hypothesis 2 (H2), meaning that the dependent employment represents the major source of income, while the one-person enterprise is operated only as a sideline business and therefore portrays only a secondary income. Finally, the third category is a mixture of the first two types, i.e. the hybrid self-employed is likewise both, a micro enterprise and a classical employee ("Mixed type").

3.2 Indicator System

In order to find out whether the hybrid one-person enterprises in our sample belong to category 1, 2 or 3 as elucidated in the previous section, we created a set of indicators, which allows us to assign the one-person enterprises to the created classification of hybrid micro entrepreneurs. This set of indicators is shown in Table 1. The first two indicators refer to the characteristics of the dependent employment, while the last three indicators relate to the characteristics of the self-employed activity. Hence, a one-person enterprise is classified as main business, if the volume of the secondary dependent employment does not exceed 20 h/week. By contrast, the one-person enterprise operates only as a sideline business, if he or she is working full-time (more than 35 h/week) as an employee. The mixed type is appropriate for one-person enterprises whose dependent employment has a volume between 20 and 35 h/week. An analogous argumentation holds for the other indicators listed in Table 1. To further illustrate how the assignment of one-person enterprises to the previously developed classification works, we can look, for

Table 1 Indicators for the classification of hybrid one-person enterprises

	Classification as		
Indicator	Main business	Sideline business	Mixed type
Volume of the dependent employment (1)	Part-time (<20 h/week)	Full-time (>35 h/week)	Part-time (20–35 h/week)
Monthly net income from the dependent employment (2)	≤800 €	>1600 €	>800–1600 €
Yearly turnover of the one-person enterprise (3)	>30.000 €	≤10.000 €	>10.000–30.000 €
Monthly net income from the one-person enterprise (4)	>1500 €	≤500 €	>500–1500 €
Weekly working hours for the one-person enterprise (5)	>40 h	≤20 h	>20–40 h

Source: Own calculations and depiction

instance, at the monthly net income from the self-employed activity. If the one-person enterprise earns more than 1500 € per month we can reasonably assume that the micro enterprise is operated as the main occupation (main business). Conversely, if the one-person enterprise has a net income less or equal than 500 € from his or her self-employed activity, the enterprise can be classified as a sideline business. The mixed type is applicable for the one-person enterprises earning 500 to 1500 € per month from their business activity.

3.3 Results from the Application of the Indicator System

In total, we have 116 one-person enterprises, which represent a combination between dependent and independent employment (hybrid forms). Referring to the indicator system presented in Table 1, we were able to determine separately for each indicator how many one-person enterprises belong to the category of main businesses, sideline businesses or mixed types. The result of this assignment process is shown in Table 2.

This indicator system can be shown graphically by representing the percentage of one-person enterprises classified as main businesses, sideline businesses and mixed types for each indicator. Figure 2 shows the classification of one-person enterprises according to the indicators that relate to the (additional) dependent employment. As can be seen from the left part of the figure, according to indicator 1 (volume of the dependent employment), half of the hybrid one-person enterprises can be classified as sideline businesses and only 23.3 % as main businesses. The result of the assignment process for indicator 2 (monthly net income from the dependent employment) is shown in the right part of Fig. 2. Here, 42.2 % of the investigated one-person enterprises belong to the category of sideline businesses, 17.2 % operate as a main business and 40.5 % represent a mixed type of the two. Summarizing the findings shown in figure (2) implies that the higher the income in

Table 2 Number of classified one-person enterprises according to the indicators

Indicator	Number of one-person enterprises according to indicator		
	Main business	Sideline business	Mixed forms
Volume of the dependent employment (1)	27	58	31
Monthly net income from the dependent employment (2)	20	49	47
Yearly turnover of the one-person enterprise (3)	11	66	39
Monthly net income from the one-person enterprise (4)	9	65	42
Weakly working hours for the one-person enterprise (5)	23	71	22

Source: Own calculations and depiction

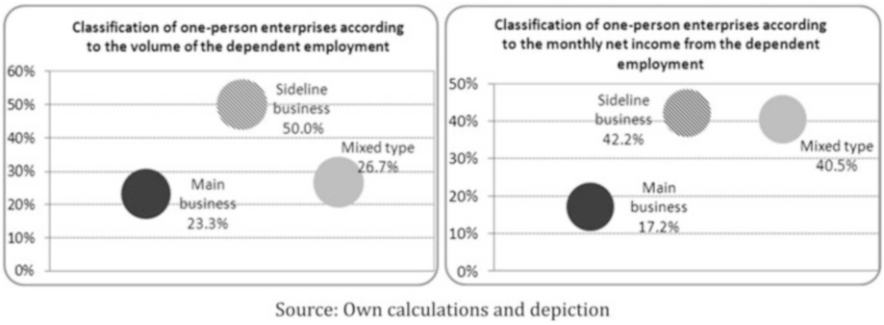
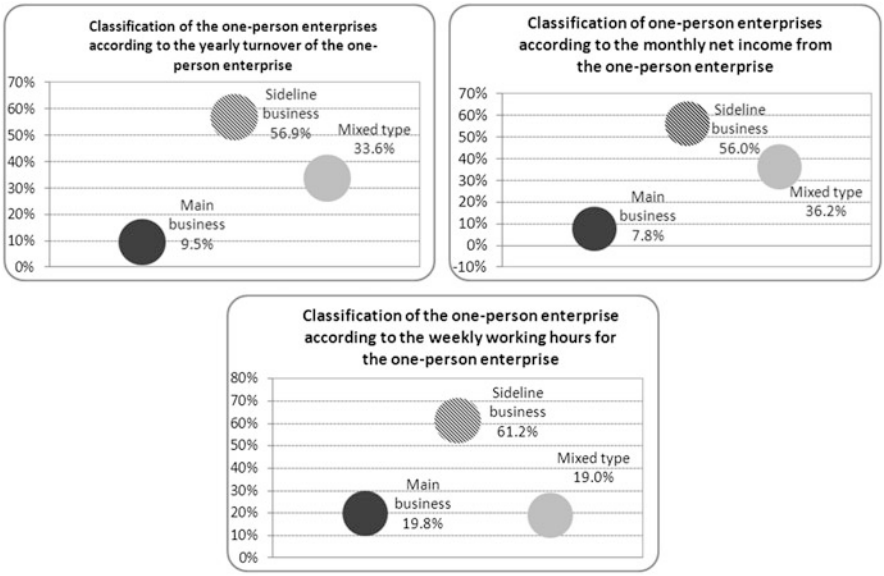


Fig. 2 Classification of the one-person enterprises according to the indicators related to dependent employment. *Source*: Own calculations and depiction

dependent work is, the more likely is the chance that the entrepreneurial companies are run as sideline businesses and vice versa. Furthermore, the higher the volume of working hours in dependent work, the higher the chance that those entrepreneurial firms are operated as sideline businesses.

Similar results can be shown when looking at the indicators that refer to the self-employed activity. According to indicator 3, the yearly turnover achieved from the self-employed activity, 56.9 % of the one-person enterprises can be classified as sideline businesses. For only 9.5 % we can conclude that the one-person enterprise is operated as the major employment; about one third (33.6 %) represent a mixed type of main and sideline business. This result is shown in the upper left part of Fig. 3. The upper right part of the graphic shows the classification of one-person enterprises according to indicator 4 (monthly net income from the self-employed activity). Here, we have a very similar result: more than half (56.0 %) of the hybrid self-employed belong to the category of sideline businesses, while only 7.8 % operate as a main business. 36.2 % were classified as a mixed type. Finally, the classification is based on the weekly working hours for the self-employed activity



Source: Own calculations and depiction

Fig. 3 Classification of the one-person enterprises according to the indicators related to the self-employed activity. *Source*: Own calculations and depiction

(indicator 5). The result of this assignment process is shown in the lower part of Fig. 3. As can be seen, the share of one-person enterprises that can be categorized as sideline businesses amounts to 61.2 %. About 20 % each belong to the category of main businesses or mixed types.

The results presented above can be merged together into an overall view by calculating mean shares for each category of hybrid one-person enterprises. In the previous analyses we presented the share of one-person enterprises that can be classified as main businesses, sideline businesses and mixed types according to each indicator $i = 1,\ldots,5$. In order to arrive at an overall view, we took the mean share of main businesses, sideline businesses and mixed types from each of the five indicators under the calculation formula shown in Box 1. Hence, we aggregated the partial results of each indicator into an overall classification index.

Box 1: Calculation of Mean Shares

$$share\_main_{total} = \frac{\sum_{i=1}^{5} share_{main}}{5}$$

$$share\_sideline_{total} = \frac{\sum_{i=1}^{5} share_{sideline}}{5}$$

$$share\_mixed_{total} = \frac{\sum_{i=1}^{5} share_{mixed}}{5}$$

The result of this aggregation process is shown in Fig. 4. According to this, we can conclude that on average—based on five different indicators—53.3 % of the hybrid one-person enterprises operate only as a sideline business. This category of micro enterprises holds a classical dependent employment (main activity) and additionally works on a self-employed basis. In contrast, the share of one-person enterprises whose self-employment represents the main activity (main business) amounts to merely 15.5 %. In this group of micro enterprises, the reasons for holding an additional dependent employment may vary from individual to individual. Certainly, for a significant part of one-person enterprises, the secondary job may be necessity-driven. However, in order to obtain sufficiently precise information about the reasons for being additionally employed, further research is required. Finally, nearly one third (31.2 %) of the analyzed one-person enterprises are mixed forms, hence, "true" hybrids lying between the category of main and sideline business.

Altogether, our results show that hypothesis 2 is more appropriate than hypothesis 1. This means that for the main part of the hybrid one-person enterprises, the self-employed activity represents a secondary source of income, i.e. a sideline business. Only a small share of the hybrid self-employed operates as a main business with the self-employed activity representing the major source of income. This conclusion was verified by looking at five different indicators. On the basis of

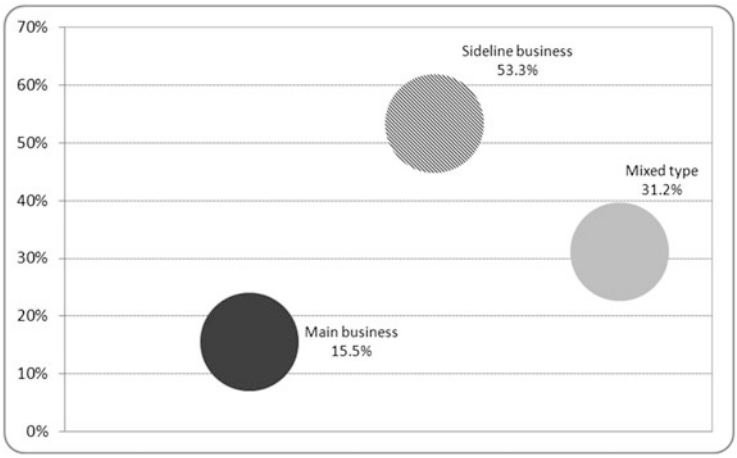


Fig. 4 Classification of one-person enterprises to five indicators (overall view). *Source*: Own calculations and depiction

these indicators, the one-person enterprises were classified as main businesses, sideline businesses and mixed types blending these two.

4 Conclusions and Outlook

The findings have a variety of different implications. We increasingly find ourselves in a society that mirrors a puzzle of labor market patterns and biographical careers in which the clinical dichotomy between wage- or labor-dependent work on the one side and self-employed activities on the other side is muddied. Consequently, *hybrid forms* of combinations arise, where people have more than one job at one time, or along the biographical axis of individual careers, so that we observe patterns of multiplicity and parallelisms. Talking about entrepreneurship in the context of social and economic dynamics must deal with the subject not only in the sense of a snapshot, but also from a processual perspective, which includes entrepreneurship as instances of biographical or even episodic processes. Research on social mobility in relation to the question about specific cohorts and patterns of transition indicates "multiepisodic" processes of careers (Blossfeld 1987). There is neither the one single occupation lifelong, nor do we find a universal pattern of setting-up on one's own. The black and white dichotomy of being dependent or self-employed seems to have become a pattern, which loses practical relevance in many cases, because people are not either / or, but both.

Additionally, entrepreneurship (in the wider and in the narrower sense) always takes place in contextual frameworks (Welter 2011). Markets and the societies in which these markets are embedded are permanently in transition: they come up, they go down, and they change. In general, a coincidence between the emergence of newborn firms, the general macroeconomic business climate and a wide range of institutional factors is noted (see Audretsch 1995, 2007; Acs and Karlsson 2002), and the fostering of competition and new firm formation goes along with increased business entries (Wennekers et al. 2010; Mueller and Thomas 2000; Thurik and Dejardin 2012). The ongoing trend towards an economy and society portrayed and governed by services (Castells 1998) proves to be not only a breeding ground for new occupations and jobs, but also for new opportunities to build upon freelanced activities and entrepreneurship. Previous studies on the topic of micro entrepreneurship were mostly concerned with an investigation of available public census data, and, very often, they dealt more explicitly with the blurred boundaries between wage dependent work and self-employment (Burke et al. 2008; Dey and Steyaert 2006; Folta et al. 2010). Burke et al. (2008) specified several factors determining variations of choices for entrepreneurship, including age, gender and education. Folta et al. (2010) stressed upon the hybrid nature of people in transitory phases being dependent workers *and* self-employed people. Especially, Wennberg et al. (2006) and Raffiee and Feng (2014) discuss hybrid entrepreneurship in a context of entrepreneurial *processes*, since most firms start very small and in informal nascent stages which are connected to hybrid forms of employment. Especially those dynamics and transitory phases are very valuable to become

studied in more detail while our study is just a snapshot allowing a first perception of a phenomenon, which is mostly hidden when just counting figures such as numbers of firms or employment. Our study started with company units registered in the *Chamber of Commerce*. In case we start with public census data on self-employment many of the hybrid actors might have been hidden because the major part of them would have been counted as dependent employees only. Hence, many research questions have been left open, and shall be explored through appropriate panel data.

Our study was based upon a genuine empirical survey asking about the rationality of the small entrepreneurs without further employees (including many self-employed freelancers). What are their economic and social rationalities, and how can they be interpreted in terms of recent popular discussions about entrepreneurship; is their emergence due to missing chances in the labor market for their stakeholders and/or do they reflect new interesting patterns to interpret and to realize participation in business life? All these aspects contribute to an appropriate understanding of the *landscape of one-(wo)man-enterprises*, while a further research inquiry delves deeper, asking about the socioeconomic logics of these small companies. The study includes companies, which are driven by need or necessity to realize any economic income at all (instead of being unemployed), and those which are also or mostly driven by "non-economic motives", such as self-realization or working without hierarchies. In other words, is the existence of micro entrepreneurship due to non-existing chances in the labor market, or does it reflect the wish to work for some extra cash in addition to regular earnings in dependent employed work? Asking about the *social logic* behind the pure division of companies showed that the primary focus of the empirical research is concerned with discussing the overlapping of (formal) labor market and labor market employees on the one hand, with self-employment and entrepreneurship on the other hand. The results highlight the idea of hybridization of social, economic and labor market categories by own empirical data and econometric analysis.

Solo-self-employment as a phenomenon has always existed. Small trade and individual expertise is reported in small business studies at least since the beginnings of industrial capitalism, but the recent revival is being discussed controversially: According to the interpretation that solo-self-employment is the seed for future take-offs, the findings seem to point in a different direction. Parts of micro entrepreneurship overlap with dependent work and the sterile dichotomy of dependent and self-employed work is getting dirty, because many actors have a foot on each side. Sometimes, solo-entrepreneurship seems to be close to precarious work, as a result of shortcomings of labor markets and industrial relations (Kalleberg 2011). Consequently, this kind of solo-self-employment may signal a lack of secure dependent jobs in the regular labor market instead of being a positive signal for upcoming winners who create a series of new jobs.

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Heterogeneous Self-Employment and Work Values: The Evidence from Online Freelance Marketplaces

Andrey Shevchuk and Denis Strebkov

Abstract

This study contributes to the literature on heterogeneous self-employment by investigating the diversity of work motivation. Using two samples obtained from freelancers, who participate in online freelance marketplaces, we analyze the relationship between individual work values and self-employment situations. Principal component analysis (PCA) revealed four value dimensions: (1) intrinsic, (2) social, (3) comfort, and (4) security. Using multinomial logistic regression, we found that people who work exclusively as freelancers, moonlighters who also hold regular jobs, and entrepreneurs who also run small businesses have distinct sets of work values. Genuine freelancers ignore security and social values, but seek intrinsic rewards and comfort to balance work and life. Entrepreneurs show the least preference for security, do not appreciate comfort, but seek intrinsic and social job rewards. Moonlighters show the highest preference for security, value social rewards, but ignore intrinsic rewards and comfort. Although the study deals with the self-employed, it also sheds light on the general association between work values and jobs.

Keywords

Self-Employment • Work values • Freelancers • Entrepreneurs • Moonlighters

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1 Introduction

For a long time, scholars have been trying to link diverse motivation with different socio-economic positions in the market economy. Prominent examples include the Schumpeterian entrepreneur (Schumpeter 1934) and Whyte's organization man (1956). The vast literature on self-employment implies self-employed individuals have specific motivations, although theoretical perspectives diverge. Many scholars tend to equate self-employment with entrepreneurship, stressing among many entrepreneurial traits creativity, risk-tolerance and a need for achievement (Zhao et al. 2010). The employment relations perspective asserts that often the self-employed are just de facto contingent laborers and precarious workers pushed into the external labor market by new corporate strategies (Kalleberg 2011; Kunda et al. 2002; McKeown 2005). Another perspective envisions "free agents" escaping corporate hierarchies to accommodate their wants and preferences and pursue desired lifestyles (Pink 2001). However, much of the speculation about the motivation of the self-employed lacks systematic empirical support and tends to generalize, ignoring the existing diversity of self-employment.

Concern has been growing in the literature about the social heterogeneity of self-employment (Aguilar et al. 2013; Arum and Müller 2004; Bögenhold and Fachinger 2012). Even within narrow categories of the self-employed, such as freelancers, huge differences exist (Bögenhold et al. 2014; Kitching and Smallbone 2012). Researchers have documented extensive variations among the self-employed in terms of sectors, occupations, employment situations, socio-demographics, human capital, labor market behavior, etc. Trying to incorporate the subjective dimension in the analysis, many studies distinguish between "opportunity"' and "necessity" self-employment. However, the relationship between heterogeneous self-employment and human motivation remains underexplored.

This paper adds to the literature on the social heterogeneity of self-employment by investigating the association between individual work values and self-employment situations. We hypothesize that people's general conceptions of work are associated with particular types of self-employed jobs. Stated differently, people with particular work values tend to be in particular self-employment situations. Thus, we seek to reveal diverse human motivations and the consequences for labor market behavior. In this paper, we take the case of freelancers who work remotely via the Internet and participate in international online marketplaces (Agrawal et al. 2013; Hong and Pavlou 2013). Recently, this new category of workers typically referred to as e-lancers (electronic freelancers) or Internet freelancers has been drawing more attention in the literature (Aguinis and Lawal 2013; Caraway 2010; Leung 2014; Malone and Laubacher 1998; Shevchuk and Strebkov 2015). We use a large sample of freelancers who participate in the leading Russian-language online marketplace and an additional small sample from a global English-language marketplace. We rely on principal component analysis (PCA) to examine the factor structure of work values. Then we use a multinomial logistic regression to test the association between work values and self-employment situations.

2 Work Values and Jobs

The concept of human values is essential for sociology (Hitlin and Piliavin 2004) and social psychology (Eccles and Wigfield 2002; Roe and Ester 1999). Work values are general judgments about work and represent "conceptions of the desirable". They comprise the relative importance people place on various aspects of work including work settings and work-related outcomes (Kalleberg 1977). Most empirical studies employ a set of 10–15 work values, although longer lists exist (Elizur et al. 1991; Kalleberg 1977; Twenge et al. 2010). However, researchers prefer not to study work values separately, but to assume that they form a limited number of basic value dimensions or broader work orientations (Ros et al. 1999). Most researches distinguish 2–7 work orientations, either constructing them conceptually (Wrzesniewski et al. 1997) or using various statistical techniques, including multidimensional scaling (Elizur et al. 1991; Ros et al. 1999), principal component analysis (Gallie et al. 2012; Twenge et al. 2010; De Witte et al. 2004), etc.

The most prominent distinction has been between intrinsic and extrinsic work values (Ester et al. 2006; Gallie 2007; Johnson and Monserud 2010; De Witte et al. 2004). Intrinsic values reflect the inherent interest in the work itself, which matches the worker's abilities, facilitates creativity, and offers challenges and learning opportunities. Intrinsic values focus on self-actualization, whereas extrinsic values are instrumental and stress material rewards such as income, security, and favorable working conditions. More nuanced and empirically based approaches break down both intrinsic and extrinsic work values into narrower categories. First, scholars seek to articulate socially rich values that in various ways connect desired jobs with other people, as classifying these values within the intrinsic-extrinsic dichotomy has always been problematic. The social or relational dimension emphasizes orientation towards the job that permits contacts with other people and opportunities to make friends (Elizur et al. 1991; Gallie et al. 2012; Johnson 2002; Kalleberg 1977; Twenge et al. 2010). Altruistic orientation implies valuing a job that is worthwhile to society and gives the opportunity to be helpful to others (Johnson 2002; Twenge et al. 2010). Values such as achievement, advancement, status, recognition and influence are comprised in the distinctive prestige or power dimension, based on a comparison of self with others that implies personal superiority (Kalleberg and Marsden 2013; Ros et al. 1999). Second, in many empirical studies, material rewards are split into two different categories: financial or security values (pay and job security) and comfort or convenience values (less pressure, convenient hours, and long vacations) (Gallie et al. 2012; Kalleberg 1977; Turunen 2011).

Alternative conceptualizations directly connect work values to employment and career strategies. Halaby (2003) explicitly challenged traditional intrinsic-extrinsic schema, elaborating basic distinctions between bureaucratic and entrepreneurial work orientations as different solutions in the pursuit of economic welfare. People with a bureaucratic orientation prefer to minimize risk and choose a secure but relatively modest future income. Conversely, people with the entrepreneurial

orientation tolerate risk, which can generate higher future returns. Halaby included pay and esteem, usually seen as extrinsic values, in entrepreneurial orientation alongside the preference for intrinsic characteristics such as discretion, autonomy, and variety. However, drawing on five data sets, Johnson et al. (2007) found only limited support for bureaucratic–entrepreneurial schema as compared to intrinsic-extrinsic schema.

Although the theoretical association between work values and jobs remains unclear (Kalleberg and Marsden 2013), work values may be important determinants of career and occupational choice. Ros et al. (1999) denoted motivational content of values and viewed values as goals and guiding principles for making occupational choices. Schein (1990) identified "career anchors" that include talents, motives, values, and attitudes that give stability and direction to a person's career. Person-environment fit theories assume that people choose work environments that match their personality, values, needs, and interests (Kristof-Brown et al. 2005).

Although, in empirically-driven studies, work values are recognized as important determinants of occupational and career choice, we conclude that work values are rarely used in conjunction with employment situations. On the other hand, theoretically richer conceptualizations directly linking work values to employment and career strategies lack empirical support.

3 Varieties of the Self-Employment Situation

Most researchers tend to treat self-employment as a uniform situation, ignoring principal variations in employment conditions. In this paper, we refer to these variations, and consider the number of jobs people hold and employment statuses. An employment situation comprises one or several jobs a person holds. We describe these jobs using three basic employment statuses, though other typologies exist in the literature. Employees are wage earners who work for organizations. Entrepreneurs are business owners who create organizations and employ other workers to produce goods and services. Own-account workers work individually beyond organizations and deliver their goods and services directly to the market. Although many people rely on single jobs, some workers may have multiple jobs and simultaneously combine different employment statuses (Panos et al. 2014).

In this study, we deal with freelancers who are typically own-account workers providing individual professional services to various clients (Osnowitz 2010), though other definitions exist (Kitching and Smallbone 2012). Most research on freelancers ignores that in real life people often combine freelancing with other forms of economic activity. For example, many employees freelance as a second (often informal) job to earn additional income, to enter a new field, or to obtain nonpecuniary rewards not available from the first job. Some freelancers start up new businesses (IT firm, design studio, advertising agency, consultancy firm, etc.) and hire employees while remaining personally engaged as workers in delivering services. In our study, we include these combinations and distinguish among three principal self-employment situations. First, a person has a single freelance job.

Second, a person has two jobs, one as an employee and one as a freelancer. Third, a person has two jobs, one as a freelancer and one as a business owner. We hypothesize that distinct sets of work values are associated with these three self-employment situations. In other words, people with similar work values tend to be in similar self-employment situations.

More specifically, in this study we observe freelancers who use information and communication technologies (ICT) and the Internet in particular to work from a distance. Malone and Laubacher (1998) first introduced the idea of a project-based "e-lance economy" facilitated by computer networks. Since then, a comprehensive technical infrastructure for freelance contracting on the Internet has emerged, as represented by dedicated websites—online freelance marketplaces (Agrawal et al. 2013; Aguinis and Lawal 2013; Hong and Pavlou 2013). Online marketplaces help individual service providers and potential buyers from all over the world find each other. To use the websites, freelancers describe their expertise, whereas clients offer job projects that can be delivered remotely. Typical areas of professional expertise that freelancers offer online include computer programming and websites; graphic design and creative arts; writing, editing, and translating; advertising, marketing, and consulting; photography, audio, and video; and engineering and manufacturing. Low entry barriers and easy access to a vast number of job projects make online marketplaces a very attractive option either for full-time freelancing or part-time second jobs. Some freelancers take advantage of leading small teams to respond to mass demand or carry out projects that are more complex.

4 Data Collection and Samples

To answer questions about the association between work values and self-employment situations, we examined data collected from freelancers who participate in two online marketplaces. We obtained our main sample in 2011 from the largest Russian-language online marketplace, Free-lance.ru (750,000 registered users at the time of the study). To evaluate the robustness of the results (especially the structure of work values), we also use an additional 2012 sample from the global English-language online marketplace vWorker.com (500,000 registered users). Both marketplaces were very typical of the industry: They operated across geographic and political borders attracting users from many countries; they had a standard site structure, common "rules of the game," and identical scope of professional skills offered by freelancers. At the time of the survey, both websites were important players in the field, and Free-lance.ru was a de facto monopolist on the Russian-language Internet.[1]

For collecting data, we used standardized online survey and non-probability convenience sampling, which can be appropriate for researching individuals who are geographically dispersed who use the websites as a meeting place and for

[1] In November 2012, vWorker was acquired by one of its main competitors, Freelance.com.

communities that exist only in cyberspace (Van Selm and Jankowski 2006; Wright 2006). That is the case of Internet freelancers, who rely heavily on online marketplaces (Caraway 2010). Although probability-based samples are ideal in surveys, self-selected methods do not invalidate findings, as even nonrandom and biased samples often preserve measures of statistical relationships quite well (Baker et al. 2013).

A Russian-language web questionnaire was hosted on Free-lance.ru in February and March 2011. To recruit participants, Free-lance.ru administrators sent subscribers two e-mail invitations to the survey, with a link to the questionnaire that included more than 50 items covering a wide range of work and life topics.

Typically, the audience of online marketplaces is much broader than our target group, which is active freelancers, and includes former, occasional, and potential freelancers, people who had not yet acquired a contract, and other peripheral categories. In our surveys, we primarily selected people who claimed they were freelancers at the time of the survey, and this work gave them at least some part of their income. The number of such practicing freelancers in the Russian-language survey was 9698. Then we limited our sample to only active freelancers who had worked on more than one paid project as a freelancer within the previous year. To obtain clearer results in regression analysis about the association between work values and employment situation, we also excluded from our sample students and people who reported they had to look after their small children (under 3 years old). We believe their engagement in self-employment is transitory and shaped by specific life circumstances rather than by work values as goals or "career anchors" (Ros et al. 1999; Schein 1990). These individuals are likely to leave self-employment when these circumstances disappear. Finally, after respondents who provided incomplete data were excluded, our Russian-language analytic sample included 4799 respondents. The Russian-language participants in this study represented more than 30 countries; the countries with the highest percentages were Russia (70 %), Ukraine (21 %), Belarus (2.8 %), Moldova (1.4 %), and Kazakhstan (1.3 %).

An additional dataset was collected from vWorker.com in April and May 2012.[2] We followed the same methodology, but vWorker.com refused to send e-mail invitations to users. Instead, we advertised the survey only through vWorker's blog and pages on social media (including Facebook), which did not yield many responses. We collected data from 510 practicing freelancers. After excluding non-active freelancers, students, individuals who provide care for their small children (under 3 years old), and those with incomplete data, our English-language analytic sample decreased to 193 respondents. The characteristics of the two samples were very similar in terms of gender, education, marital status, average work hours, freelance experience, and income, though some significant differences in age and occupations were revealed (see Table 2). The English-language

[2] We thank James Witte from George Mason University (USA) for his assistance in collecting the data from vWorker.com.

participants were widely dispersed around the world and lived in more than 45 countries; the countries with the highest percentages were the United States (18 %), India (14 %), Philippines (9 %), Pakistan (6 %), and Bangladesh (5 %).

5 The Structure of Work Values: A Principal Component Analysis

First, we examined the structure of the freelancers' work values. To measure work values, we asked a multiple-choice question taken from the World Values Survey (WVS): "Which of the following do you personally think are the most important aspects in a job?" Respondents were urged to choose from among 12 items that covered a wide range of job characteristics, including (1) good pay, (2) not too much pressure, (3) good job security, (4) a job respected by people in general, (5) good hours, (6) an opportunity to show initiative, (7) generous vacation time, (8) a job in which you feel you can achieve something, (9) a job that is interesting and creative, (10) a responsible job, (11) a job that meets one's abilities, and (12) an opportunity to acquire new knowledge and skills. The items, numbers, and overall proportions selected by the respondents for both datasets are shown in Table 1. The data show far more similarities than differences in work values between freelancers in the Russian- and English-language samples. The three most important values were the same in both groups: good pay (78–79 %), interesting and creative job (72–75 %), and opportunity to acquire new knowledge and skills (65–77 %). Likewise, the Russian- and English-speaking freelancers were least focused on generous vacation time, minimum pressure at work, and having a responsible and respected job. Thus, despite some differences in percentages, the order in which the preferences were distributed was almost the same.

To reveal the factor structure underlying these work values items, PCA with Varimax rotation was carried out. We used the entire samples of practicing freelancers except the respondents with missing data (8487 for the Russian- and 402 for the English-language freelancers). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy of the analysis. Bartlett's test of sphericity reached statistical significance ($p < 0.001$), supporting the factorability of the correlation matrix. Finally, four components representing the most important dimensions of the work values structure were extracted and interpreted as (1) intrinsic, (2) social, (3) comfort, and (4) security dimensions (see the factor loadings in Table 1). This four-factor solution provided the best fit according to the eigenvalue scree plot, the amount of variance, and factor interpretability.

The factor decision was robust. We verified that the structure of the PCA model and even the sequence of the components were exactly the same for both datasets. Thus, we did not find any significant differences between the Russian- and English-speaking freelancers. Similar components were obtained in other studies, especially those based on the same WVS question. The intrinsic dimension comprised typical intrinsic work values such as an interesting and creative job, an opportunity to acquire new knowledge and skills, a job in which a worker feels he or she can

Table 1 Percentages and factor loadings for work values

Which of the following do you personally think are the most important aspects in a job?	Russian-language freelancers (2011, N = 8487)						English-language freelancers (2012, N = 402)					
			Component						Component			
			1	2	3	4			1	2	3	4
	N	%	Intrinsic	Social	Comfort	Security	N	%	Intrinsic	Social	Comfort	Security
A job that is interesting and creative	6145	72.4	0.667				303	75.4	0.745			
An opportunity to acquire new knowledge and skills	5528	65.1	0.656				308	76.6	0.600			
An opportunity to show initiative	3440	40.5	0.525	0.456			208	51.7	0.558	0.457		
A job in which you feel you can achieve something	4951	58.3	0.473				263	65.4	0.613			
A job that meets one's abilities	4558	53.7	0.466				202	50.2	0.425	0.456		
A responsible job	1340	15.8		0.691			162	40.3		0.670		
A job respected by people in general	1970	23.2		0.653			160	39.8		0.659		
Not too much pressure	1171	13.8			0.734		138	34.3			0.764	
Generous vacation time	821	9.7			0.682		103	25.6			0.742	
Good hours	5104	60.1	0.427		0.486		189	47.0			0.679	
Good pay	6719	79.2				0.829	312	77.6				0.856
Good job security	2867	33.8		0.473		0.568	189	47.0		0.622		0.516
% of Variance			15.5	13.4	11.4	10.0			16.8	16.0	14.3	9.3
Kaiser-Meyer-Olkin (KMO)	0.767						0.815					
Bartlett's Test of Sphericity	8644 (66)***						808 (66)***					

Notes. Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization. Absolute values less than 0.40 were suppressed

***$p < 0.001$

achieve something, and a job that meets his or her abilities (Turunen 2011). In the case of the Russian-speaking freelancers, the item "good hours" also had a moderate correlation with the first component. The social dimension included status and prestige values (respected and responsible job) as well as one intrinsic value (initiative) and a "good job security" item, which had simultaneously significant loadings on two components. In the English-language sample, a job that meets one's abilities also had correlations on two components. We believe the intrinsic and social dimensions reveal two different conceptions of self-actualization and fulfillment in the world of work. The former stresses inner focus and subjective success criteria, whereas the latter implies recognition in a wider social context. The high correlation of the "good job security" item with this factor probably emphasizes its organizational nature. People who value the social component prefer to work in an organization rather than individually.

Extrinsic work values were split into two categories. The comfort dimension included a set of extrinsic values (not too much pressure, convenient hours, and long vacations) and could also be referred to as convenience or leisure (Halman and Müller 2006; Johnson 2002; Kalleberg 1977; Turunen 2011; Twenge et al. 2010). However, Gallie et al. (2012) treated this component as looking for a reasonable work-life balance. We are inclined to follow this view in our further interpretations. The security dimension included basic extrinsic values (good pay and job security) and was reproduced in many studies (Kalleberg 1977; Ros et al. 1999; Turunen 2011). In contrast to Halaby's (2003) prediction, pay and security form one dimension (see also Johnson et al. 2007). Although in this component the "good pay" item had higher loading than the "job security" item, we tended to assume that people preferred predictable material outcomes and a secure future. Thus, we obtained one intrinsic component, two extrinsic components (comfort, security), and one component that mixes social and intrinsic values (social).

6 Work Values and Self-Employment Situations: A Regression Analysis

6.1 Definition and Measurement of Variables

6.1.1 Dependent Variable

Our aim was to test the association between work values and the probability of being in a particular self-employment situation. Employment situation was measured with the following question: "Do you have another job besides freelancing?" There were three possible categories from which to choose. For 38 % of Russian-speaking freelancers, self-employment was their only full-time activity and the only source of income (we called them "genuine freelancers"); for 52 %, freelancing was their second job coupled with organizational employment ("moonlighters"), and 10 % also run their own business with hired employees ("entrepreneurs"). Among the English-speaking respondents, the percentage of genuine freelancers was much higher (58 %) and the percentage of moonlighters

was much lower (33 %) than in the case of the Russian-speaking freelancers. Because the dependent variable was categorical, we used a multinomial logistic regression with "genuine freelancers" as the reference category. The 0.05 level of significance was selected to discuss the significant relationships highlighted by the significant models. All analyses were conducted using SPSS software version 15.0.

6.1.2 Independent and Control Variables

We used four work value components obtained from principal component analysis as independent variables. The control variables were divided into two main groups: work and respondents' socio-demographic characteristics. Among the work characteristics, we considered freelance tenure, professional specialization (primary area of freelance work), number of work hours per week, and level of income. Freelance experience was calculated from the item, "In what year did you begin working as a freelancer?" The formula subtracted the response year from 2010 (2011 for the English-language survey). The primary area for freelance work was defined using the multiple-choice question, "Which of the following best describes your primary area for freelance work?" with six response categories that comprise skills that freelancers typically offer in online marketplaces. The number of total working hours on all jobs per week was a continuous variable. We multiplied the reported number of working hours a day by the reported number of working days a week. Earnings were measured in different ways in the two datasets. Earnings of the Russian-language freelancers were measured with a single item: "What was your total monthly income (in rubles) in 2010 including freelance and all other paid activities?" The five response categories ranged from poor (less than 10,000 rubles) to very high (75,001 rubles or more). In the case of English-language freelancers, we also had five earnings groups that measure annual pretax income from poor (less than USD 10,000 per year) to very high (more than USD 75,000 per year).

The set of socio-demographic characteristics included gender, age, level of education, and family status. Dummy variables for the region of residence were also included. For the first dataset, we had three dummy variables for Moscow residents, St. Petersburg residents, and non-Russian residents. The residents of Russian regions (except for Moscow and St. Petersburg) were the reference category. For the second dataset, we had two dummy variables for the United States and Canada, and other G20 countries. The residents of developing countries outside the Group of 20 were the reference category. All descriptive characteristics of the final samples are presented in Table 2.

6.1.3 Main Results

We estimated the association of four work values components with the probability of being in a particular employment situation via a multinomial logistic regression, comparing entrepreneurs and moonlighters with genuine freelancers. First, we considered these effects on our main dataset of Russian-speaking freelancers (see Table 3 and Fig. 1), and it led us to several important conclusions.

Table 2 Means or percentages of variables

	Russian-language freelancers (2011, N = 4799)			English-language freelancers (2012, N = 193)		
	N	Mean or percentage	SD	N	Mean or percentage	SD
Employment status (%)						
Genuine Freelancers	1799	37.5		111	57.5	
Entrepreneurs	492	10.3		19	9.8	
Moonlighters	2508	52.3		63	32.6	
Freelance tenure (years)	4799	2.9	3.7	193	3.9	5.7
Primary area for freelance work (%)						
Websites/Computer programming	1811	37.7		123	63.7	
Graphic design, creative arts	1788	37.3		38	19.7	
Engineering	293	6.1		13	6.7	
Photography/Audio/Video	578	12.0		19	9.8	
Writing/Editing/ Translating	1526	31.8		90	46.6	
Advertising/Marketing/ Consulting	646	13.5		50	25.9	
Working hours per week	4799	55.4	24.2	193	50.5	25.6
Total monthly post-tax income in rubles (%)						
75,001 or more	439	9.1				
51,001–75,000	553	11.5				
25,001–50,000	1494	31.1				
10,001–25,000	1704	35.5				
Less than 10,000 (ref)	609	12.7				
Total annual pretax income in USD (%)						
75,001 or more				21	10.9	
40,001–75,000				16	8.3	
20,001–40,000				26	13.5	
10,001–20,000				31	16.1	
Less than 10,000 (ref)				99	51.3	
Gender (%)						
Male	3065	63.9		129	66.8	
Female (ref)	1734	36.1		64	33.2	
Age (years)	4799	29.8	8.5	193	36.8	11.4
Education status (%)						
Tertiary education with degree	3251	67.7		133	68.9	
Absence of university education (ref)	1548	32.3		60	31.1	
Marital status (%)						
Married or live with a domestic partner	2980	62.1		112	58.0	

(continued)

Table 2 (continued)

	Russian-language freelancers (2011, N = 4799)			English-language freelancers (2012, N = 193)		
	N	Mean or percentage	SD	N	Mean or percentage	SD
Single/divorced/widowed (ref)	1819	37.9		81	42.0	
Region of residence (%)						
Not Russia	1425	29.7				
Moscow	859	17.9				
Saint Petersburg	363	7.6				
Other Russian regions (ref)	2152	44.8				
Region of residence (%)						
USA and Canada				41	21.2	
Other G20 countries				76	39.4	
Other countries (ref)				76	39.4	

1. Persons with poorly expressed intrinsic values are more likely to be moonlighters. However, there is no significant difference between genuine freelancers and entrepreneurs. Both groups are focused on self-actualization and fulfillment.
2. Social values are insufficiently expressed among genuine freelancers. However, there are no significant differences in this indicator between moonlighters and entrepreneurs. Evidently, these people feel comfortable in organizations; they appreciate social recognition and prefer to have a responsible and respected job.
3. Genuine freelancers appreciate comfort in work conditions and prefer to limit their work efforts more than the two other groups. Other conditions being equal, they put more value on good hours, generous vacation time, and not too much pressure at work. Following Gallie et al. (2012), we tend to treat these values as preference for a reasonable work-life balance. There are no significant differences in this indicator between moonlighters and entrepreneurs.
4. Persons with highly expressed security values are more likely to be moonlighters. Good pay and job security are high priorities to them. In contrast, among entrepreneurs, these values are the least pronounced. Genuine freelancers take an intermediate position. There are significant differences in this indicator among all three groups of workers.

Thus, for intrinsic and security value dimensions, the position of entrepreneurs is far from moonlighters and much closer to genuine freelancers. In contrast, the social and comfort dimensions show a substantial similarity between entrepreneurs and moonlighters and a significant difference from genuine freelancers.

The data from the additional sample collected from the English-speaking freelancers were less suitable for multinomial regression analysis due to the small number of respondents. A very small number of independent and control variables

Table 3 Multinomial regression results with "Genuine Freelancers" as the reference category

	Russian-language freelancers (2011, N = 4799)				English-language freelancers (2012, N = 193)			
	Entrepreneurs (Model A1)		Moonlighters (Model B1)		Entrepreneurs (Model A2)		Moonlighters (Model B2)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Work values								
Intrinsic	−0.05	0.06	−0.29	0.03***	0.35	0.40	−0.04	0.20
Social	0.13	0.05*	0.16	0.03***	−0.55	0.39	0.63	0.22**
Comfort	−0.15	0.05**	−0.13	0.03***	−1.49	0.48**	−0.06	0.20
Security	−0.14	0.05**	0.19	0.03***	−0.17	0.31	0.51	0.21*
Freelance tenure	0.03	0.02	0.01	0.01	−0.02	0.06	−0.08	0.05
Primary area for freelance work								
Websites/Computer programming	0.48	0.12***	0.06	0.08	−0.37	0.67	0.34	0.46
Graphic design, creative arts	0.24	0.12*	−0.20	0.08*	−1.31	0.71	0.00	0.51
Engineering	0.76	0.22***	0.65	0.16***	−0.98	1.01	0.37	0.85
Photography/Audio/Video	0.36	0.16*	0.13	0.11	−1.69	0.97	−1.35	0.69
Writing/Editing/Translating	0.15	0.14	0.09	0.09	−0.63	0.70	−0.11	0.46
Advertising/Marketing/Consulting	1.11	0.14***	0.36	0.11***	−0.17	0.72	0.95	0.47*
Working hours per week	0.01	0.00***	0.02	0.00***	0.00	0.01	−0.01	0.01
Total monthly post tax income in rubles								
60,001 or more	1.65	0.26***	0.01	0.16				
36,001–60,000	1.78	0.25***	0.68	0.15***				
24,001–36,000	1.18	0.23***	0.50	0.11***				
12,001–24,000	0.60	0.23**	0.52	0.11***				
Total annual pretax income in USD								
75,001 or more					0.89	0.97	0.09	0.84
40,001–75,000					−0.97	1.27	−0.70	0.84
20,001–40,000					−0.84	1.08	0.09	0.60
10,001–20,000					−0.34	1.00	−0.38	0.56

(continued)

Table 3 (continued)

	Russian-language freelancers (2011, N = 4799)				English-language freelancers (2012, N = 193)			
	Entrepreneurs		Moonlighters		Entrepreneurs		Moonlighters	
	(Model A1)		(Model B1)		(Model A2)		(Model B2)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Male	0.33	0.13*	0.12	0.08	0.32	0.72	0.83	0.48
Age	−0.04	0.01***	−0.04	0.00***	−0.03	0.04	−0.07	0.02**
Tertiary education with degree	0.29	0.12*	0.35	0.07***	0.81	0.77	0.61	0.46
Married or live with a domestic partner	0.28	0.12*	0.00	0.07	0.00	0.72	0.13	0.42
Region of residence (A)								
Not Russia	0.27	0.13*	−0.15	0.08				
Moscow	−0.27	0.16	0.05	0.10				
Saint Petersburg	−0.25	0.22	0.23	0.13				
Region of residence (B)								
USA and Canada					−0.26	1.05	0.35	0.66
Other G20 countries					0.06	0.72	−0.26	0.44
(Constant)	−2.98	0.34***	−0.15	0.08	2.07	1.88	1.44	1.42
Nagelkerke R Square	0.21				0.41			
L.R. X2 (df)	945 (46)***				81 (44)***			

*p < 0.05
**p < 0.01
***p < 0.001

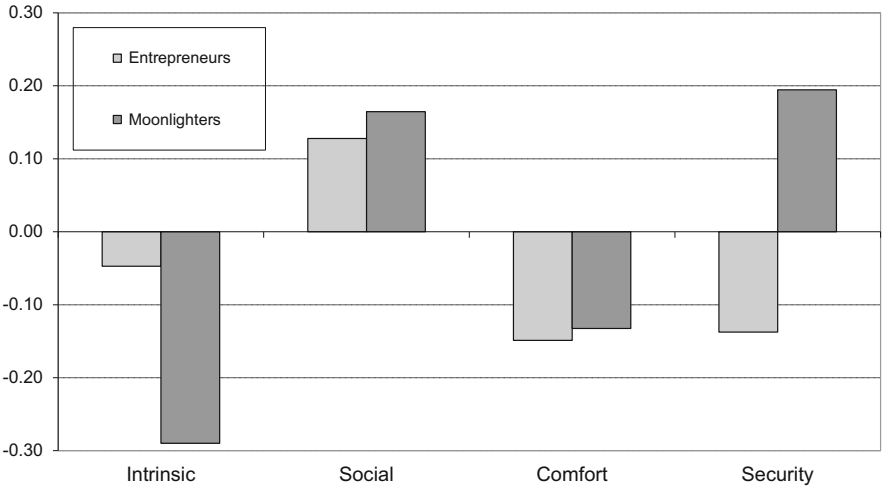

Fig. 1 Job values of entrepreneurs and moonlighters compared to genuine freelancers

had significance at the 0.05-level association with the probability of holding a particular employment status. Nevertheless, even in this case we confirmed the three conclusions described above. Entrepreneurs differ from genuine freelancers in terms of comfort values. Entrepreneurs seek to limit their work efforts and to have good hours, generous vacation time, and minimum pressure to a significantly lesser extent. Moonlighters pay much more attention to social and security work values than genuine freelancers.

7 Conclusion

Work values are an important concept in sociological and psychological studies of the meaning of work (Ros et al. 1999; Rosso et al. 2010), motivation (Eccles and Wigfield 2002), and job quality (Gallie 2007; Kalleberg and Marsden 2013). We use this concept to illuminate the social heterogeneity of self-employment in relation to work motivation. More specifically, we study the association between work values and self-employment situations. We take the case of contract professionals—freelancers, who represent a segment of self-employment often neglected in the literature (Kitching and Smallbone 2012; Osnowitz 2010). Using a large sample from a Russian-language online marketplace and an additional small sample from an English-language marketplace, we show that even within this relatively narrow segment, heterogeneous self-employment situations and varied work motivations exist.

The study revealed that people who work exclusively as freelancers, moonlighters who also hold regular jobs, and entrepreneurs who also run small businesses have distinct sets of work values. Our findings help to reflect on the

extant theoretical perspectives in self-employment research. Consistent with Pink's (2001) vision of "free agents" as people who avoid corporate hierarchies to promote a desired lifestyle and achieve work-life balance, the genuine freelancers in our study prefer meaningful jobs and a comfortable work pace, leaving time for other things in life. Genuine freelancers do not seek status, prestige, and social recognition or the secure income that firms can offer. These individuals prefer to rely on subjective criteria of success in uncertain markets. Individuals who run a small business in addition to freelancing show the least preference for security. They spare no effort in getting intrinsic and social job rewards. This finding agrees with the popular image of an entrepreneur as a creative, achieving, and risk-taking person (Zhao et al. 2010). In contrast, the top priority for moonlighters who do freelancing as a second job is security. They also appreciate social recognition. We conclude that they have traditional employee motivation and are involved in self-employment mainly for the additional income. However, they are ready for the hard work of handling two jobs. Thus, the moonlighters in our study may represent industrious laborers, who sacrifice intrinsic job rewards to make a living, instead of the entrepreneurial workforce. However, we can also hypothesize that some of moonlighters may experiment with new self-employment opportunities in preparation for leaving their current jobs at some point in the future (Panos et al. 2014). Providing empirical support for each of the three theoretical accounts of self-employment (entrepreneurship, employment relations, and "free agent" perspectives), we claim that self-employment is not a uniform employment situation, and self-employed individuals have different motivations.

Our study contributes not only to self-employment research but also to wider debates about work values and jobs. We conclude that individual work values are strongly associated with a worker's employment situation. We assume work values are goals (Ros et al. 1999) that influence a particular choice of employment, though cross-sectional research design prevents us from claiming causality. Our results also agree with the idea of person-environment fit that proposes matching people with careers that meet their values, needs, and interests (Kristof-Brown et al. 2005).

This study has limitations since the main empirical evidence in our study is confined to Russian-language freelancers who work in the unique context of post-Soviet economies (Shevchuk and Strebkov 2015). However, we gained partial support for our conclusions using an additional English-language sample obtained from a global online freelance marketplace. Future researchers may replicate our methodology to test the association between work values and employment situations in other samples and contexts.

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Exploring the Reasons and Ways to Exit: The Entrepreneur Perspective

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Abstract

Research on entrepreneurial exit has received growing attention recently, attributing to the importance of exit in the entrepreneurial process. Yet, the complex phenomena of exit render the research scattered in the field. This research is aimed at understanding entrepreneurial exit at the individual level, which has received less attention in the scholarly works. This article contributes to the discussion on the level of analysis researching entrepreneurial exit. Furthermore, the empirical work explores the reasons for and ways to exit of young firms. Following Austrian firms from founding until 3–4 years of operation, we are able to track entrepreneurs who exit. Our study reveals that the entrepreneurs who exit have fewer general managerial skills, are less experienced (general job experience, industry), have fewer entrepreneurial skills and less leadership quality, compared to the entrepreneurs who still engage in their founded firms in the sample. These findings indicate the importance of human capital, which plays a role in the continuation of the professional career of an entrepreneur. With regards to reasons to exit, our findings show that entrepreneurs exit due to personal-related reasons (alternative and normative) and firm-related reasons (calculative). Concerning ways to exit, the study reveals the specific context of Austria in which temporary closure is a possible way to exit. In the early stage, this study finds that the voluntary exit occurs in most cases, rather than the involuntary exit.

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1 Introduction

The entrepreneurial exit is an important event in the entrepreneurial journey (DeTienne 2010). It is paramount for the entrepreneurs themselves, independently of whether the exit is planned or unplanned. The entrepreneurial exit is also important for industries as exit may disrupt the competitive balance in the industry. For the economy, exit can have impact on regional economy as the resources may be re-invested to other companies. In the case of successful exit, wealth being created may be re-distributed among individuals such as founders, family members, employees (in the case of stock options) (Audretsch et al. 2004).

The phenomenon of the entrepreneurial exit is complex. One of the sources of complexity is the difficulty associated with measuring and defining exit (Wennberg 2011). According to Wennberg (2011), studies on exit rate show varying results, depending on the definition and unit of analysis. Exit is viewed generally based on two units of analysis, namely the firm level (i.e. firms exit from the market) and the individual level (i.e. entrepreneurs leave their firms). Most research on exit deals with the firm exit utilizing firm-level data (e.g. Doi 1999; Carree et al. 2011; Fortune and Mitchell 2012). In this stream, researchers focus on organizational aspects and examine the destiny of the organizations. In recent years, there has been a growing trend to investigate the exit of the entrepreneur (e.g. Colombo and Grilli 2005; Unger et al. 2011; Loane et al. 2014). At this individual level, substantial attention has been given to the investigation of the human capital aspects (e.g. Criaco et al. 2014), the intention to exit (e.g. DeTienne and Cardon 2012) and the disengagement from start-up activities (Yusuf 2012).

Research on exit has delivered mixed results concerning reasons and ways to exit. The mixed results are attributed to the elusive definition of exit (Headd 2003) and the different levels of analysis (Wennberg and DeTienne 2014). Therefore, making a clear distinction regarding the perspective of exit between entrepreneur and firm is crucial to comprehensively reveal the phenomena of exit.

This article aims firstly to discuss the definition of entrepreneurial exit and the level of exit analysis. Secondly, we aim to explain the reasons for and ways to exit, focusing on the individual level. We further provide empirical findings based on a sample of young firms in Austria, using entrepreneurs who exit from their firms as the unit of analysis.

2 Definition and Level of Analysis

Most researchers investigating exit have taken firms as the objects of their studies. They define firm exits as the exit of the firm from the market (Anderson and Tushman 2001; Carree et al. 2011), as the discontinuance of the firm's operation (Carter et al. 1997), as the firm's closure (Bates 2005), or as the firm's bankruptcy (Gimeno et al. 1997). Firm exit is also often defined as "business closure" or "business discontinuance" (Bates 2005). This refers to the closure of one of the branches or businesses, yet the (principal) firm continues to exist. Lastly, firm exit can also be observed based on the exit of the business or firm from a location, regardless of the status of the firm as recorded at the registration office (Pe'er and Vertinsky 2008).

Applying the individual perspective, the entrepreneur is the observational object who exits, such as an individual leaving self-employment or entrepreneurial activity to commence another activity (Dyer 1994; van Praag 2003). The object of the analysis can be the entrepreneur in a broad definition (Amaral et al. 2007), the founder (Grilli 2011), the business owner (Aaltonen et al. 2010), a member of an entrepreneurial team (Ucbasaran et al. 2003), or the nascent entrepreneur (Yusuf 2012). Most studies use a broad definition of "entrepreneurs", referring to those individuals who own the firms regardless of their participation and do not limit the term to those who have founded, acquired or inherited. A specific definition is taken up in the study of DeTienne (2010), who defines entrepreneurial exit as "the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm" (DeTienne 2010, p. 203). Taking into consideration the entrepreneurial process, which begins from the start-up phase, Delmar and Shane (2003) study the exit of entrepreneurs (nascent entrepreneurs) during this phase and define an entrepreneurial exit as "the cessation of efforts to develop the new venture" (p. 1172). The different views at the individual level may help to understand the phenomena of exit, for example the diverse ways of exit chosen by founders, inheritors and nascent entrepreneurs.

3 Reasons to Exit

Reasons to exit from the founded firms can be manifold. DeTienne (2010) summarises the reasons for entrepreneurial exit in different categories, namely alternative reasons, normative reasons, and calculative reasons. The alternative reasons are related to the pursuit of better opportunities, such as setting up a more prosperous venture, gaining employment, returning to education, migrating, and other prospective opportunities (Bates 2005). These reasons can be explained by the concept of opportunity costs, which describes the foregone gains of other alternatives as a consequence of a choice. Entrepreneurs with higher opportunity costs may be more likely to exit from their firms (Watson and Everett 1996).

With respect to normative reasons, those refer to the pressures derived from the expectations of the entrepreneur or others regarding the firm. However, the motivation to comply with these expectations may vary. In a firm founded and managed by a team, goal differences, team conflicts and lack of trust primarily drive members to exit (Khan et al. 2014) and have an impact on the longevity of the firm (Hellerstedt et al. 2007).

The most cited reason for an entrepreneurial exit is the condition (performance) of the firm (Wennberg and DeTienne 2014). DeTienne (2010) labels this as calculative reason. Owing to Maertz and Campion (2004), DeTienne (2010) refers to the actions which are carried out by the entrepreneurs to achieve their future goals in the current situation. These include the realization that the demand for their products is low or competition is very intense. Adding to these, Watson and Everett (1996) show that entrepreneurs also exit due to a change of ownership, business expansion and resources acquisition.

Exit can be regarded as either a successful or an unsuccessful (failed) event for the entrepreneurs (Bates 2005). The unsuccessful exit is often characterised by firm failure, such as firm liquidation due to bankruptcy. In the early stages, entrepreneurs face hurdles due to an underdeveloped organization, low trust from the stakeholders, difficulties in resource allocation (Aldrich and Auster 1986) and technological uncertainty (Delapierre et al. 1998). These hurdles are a result of initial conditions and difficulties in change mechanisms within the firm (Parastuty et al. 2015). Successful exit is often marked by the continuation or survival of the firm. Firms may continue to operate once entrepreneurs leave the firm through selling, merger and acquisition.

The entrepreneurial exit is not merely a function of the economic performance of the firm, but also depends on the threshold performance of the firm itself (Gimeno et al. 1997). The threshold performance is the performance level below which the entrepreneurs will act to dissolve the firm. It highlights the central role of entrepreneurs, who determine the continuation of the firm (van Praag 2003).

Firm characteristics and individual characteristics as determinant factors of exit have already been researched by some scholars. The founding conditions have been shown to be the significant factor for a firm's exit (Geroski et al. 2010; Le Mens et al. 2011). Delmar and Shane (2003) assert that even though the environmental conditions may subsequently change, the effect of the founding condition on the survival of the firm nevertheless persists. This corresponds to the imprinting theory hypothesis that states that the history of a firm and of its individuals matters in understanding the present condition (Marquis and Tilcsik 2013). However, Schwarz et al. (2006) argue that the effect of founding conditions upon firm performance and survival decreases over time.

Past research has shown that a low probability of firm exit is positively associated with a higher level of human capital (Bates 1990; Brüderl and Schüssler 1990; Rauch and Rijsdijk 2013), with more financial capital (Korunka et al. 2010), a higher number of employees, a greater range of product portfolio (Kalleberg and Leicht 1991) and bigger firm size (Geroski et al. 2010). With regard to human capital, research has shown contrasting results concerning the contribution of

founder's human capital to firm performance (Toft-Kehler et al. 2014) and firm survival (Criaco et al. 2014).

4 Ways to Perform an Entrepreneurial Exit

The entrepreneurial exit operates in several ways. The simple classification of the ways to exit consists of two routes of activities. Firstly, an entrepreneur may exit through selling his ownership to other parties such as employees, suppliers, family members or strategic partners, and leaving the firm, while the firm still exists in the market or merges with another company. In the case of substantial changes in the firm (name, operation, location), de-registration of the firm as a legal entity may occur (Breitenecker 2009). Secondly, an entrepreneur may exit by closing or liquidating the firm. Liquidation refers to the termination of the firm. In the case of a forced exit (involuntary exit), entrepreneurs declare bankruptcy. Since bankruptcy involves high costs financially, psychologically and socially (Pretorius 2009), many entrepreneurs avoid bankruptcy by adding equity, selling assets and paying off loans (Bottazzi et al. 2011). In this case, it is considered a voluntary exit. Both, selling and liquidation could occur in the condition of gain and loss.

On the basis of the outcome of the exit for the entrepreneurs, DeTienne et al. (2015) classify the manners of exit into three types, namely financial harvest, stewardship and cessation. Financial harvest refers to Initial Public Offering (IPO) or acquisition, which results in the wealth leverage of the entrepreneurs. Stewardship covers family succession, employee buyout or sale to an individual, which results in the possibility for the founders to continue to exert influence over the firm in the future due to social ties with the successor. Lastly, cessation refers to the liquidation and bankruptcy of the firm, which results in the discontinuation of the firm.

Firm performance has long been argued to represent a determining factor for the firm's existence in the market, where well-performing firms survive whereas poorly performing firms exit (Gimeno et al. 1997). Although existing research often suggests that poor performance drives an entrepreneur to exit, associating exit with failure is erroneous (DeTienne and Chirico 2013). A study by Wennberg et al. (2010) shows that entrepreneurs of high performing firms tend to exit through selling and the firms continue to operate. Conversely, entrepreneurs of poorly performing firms tend to exit through distress sales to prevent further losses and avoid bankruptcy (van Witteloostuijn 1998), or distress liquidation, which includes bankruptcy.

Founders or entrepreneurs may not link their exit with the performance of their firms (DeTienne and Chirico 2013). In the context of family firms, DeTienne and Chirico (2013) propose that founders choose ways to exit in terms of financial reward, stewardship and cessation (DeTienne and Cardon 2012) due to the level of their socio-emotional wealth, which is measured by the non-financial aspects of the firm that meet the family's affective needs, due to the level of governance structure and due to the presence of a nonfamily CEO. The higher the socio-emotional

wealth, the less likely the founders of family firms are to exit through the route of cessation.

Another attempt to explain the way to exit is by taking into account the previous working experience of the founder. Founders with generic work experience primarily gained in sectors different from their firms may be forced to close their firms because they cannot find acquirers or firms to merge with (Grilli 2011). However, their generic knowledge and work experience make it easier for them to switch to alternative employment and to give up their business (close/liquidate firm). Similarly, founders with a higher level of specific knowledge also find it easier to achieve a shift in their career. However, their deeper understanding of the specific industry they operate in makes it easier for them to find partners for acquisition or merger. Founders with both a low level of generic and of specific knowledge are most likely to defend their business, because they have limited options for career switching (van Teeffelen and Uhlaner 2013).

5 Empirical Study from Austria

Studying entrepreneurial exit is challenging, as entrepreneurs may be reluctant to talk about the event, especially in the case of an unsuccessful exit or failure. Therefore, we gathered data starting from the founding of the firms. We then tracked the development after 3–4 years from the time of founding. This section presents our empirical study on the entrepreneurial exit of young firms in Austria.

5.1 Sample Description

We collected data in two cross-sections in 2009 and 2013, using mail and online questionnaires. The first cross-section was drawn from a population of firms founded by single entrepreneurs in eight of nine Austrian provinces during the summer of 2009. We received 381 responses, which represents a response rate of 7.6 %. Then, from December 2012 until March 2013, we sent questionnaires to those 381 respondents. This second cross-section gathered data 3–3.5 years after founding. We received 212 responses. In 171 firms, the entrepreneurs are still active and in 41 firms, the entrepreneurs have exited from their founded firms. However, the usable data for analysis relating to entrepreneurial exit are reduced to 38 responses, due to missing data from three respondents. Out of 38 cases of entrepreneurial exit, there are two entrepreneurs who have left their firm, while the firm continues to operate. The rest of the firms (36) indicated the status of "inactive" or "closed".

The entrepreneurs who experienced an entrepreneurial exit are described as follows. When these entrepreneurs founded their company, their ages ranged from 19 years to 58 years. The average age was 39.2 years with 9.7 years of standard deviation. There are 22 (57.9 %) male and 16 female (42.1 %) respondents. Concerning the level of education, entrepreneurs who hold university

degrees account for 36.8 % (14 entrepreneurs). The remaining graduated from high school (28.95 %), completed an apprenticeship (28.95 %) or vocational school (5.3 %). With the exception of two individuals, all had prior work experience. Concerning previous experience with founding a company, 21 entrepreneurs (55.3 %) did not have any experience, 10 entrepreneurs had the experience for less than a year (26.3 %) and 7 entrepreneurs (18.4 %) had more than 1 year of experience. Regarding the founding motives, all respondents were motivated by self-realization to a certain degree. This is followed by opportunity-driven and lastly by need-driven motives.

Firms from which the entrepreneurs exited were operating in different industries, ranging from personal services, trade, and real estate to manufacturing in local (31.6 %), regional (38.8 %), national (26.3 %) and international markets (5.3 %). When they founded their companies, most of the entrepreneurs (55.3 %) invested less than 4000 €, nine invested between 4000 € and 10,000 € and for eight the investment was above 10,000 €.

5.2 Results and Discussion

First, we report the results regarding the differences between entrepreneurs who stay in entrepreneurial activity and those who exit. Subsequently, results and a discussion on the reasons for and ways to exit are presented.

5.2.1 Comparison Between Survival Entrepreneurs and Exit Entrepreneurs

As founding conditions are relevant factors for the further development of a firm, we analysed, in a first step, the differences between the firms of exit entrepreneurs and those of surviving entrepreneurs. Beside the personal data of the entrepreneur, we compared strategic, structural and resource-based variables of the firm and environmental conditions by applying T-tests. We tested nominal scaled variables by applying Chi-squared tests. The results indicate several significant differences.

Concerning the entrepreneurs we could determine that, on average, entrepreneurs who exit from their firms have fewer general managerial skills ($t = 2.026$, $df = 206$; $p = 0.044$), are less experienced (general job experience, industry and leadership experience; $t = 1.754$, $df = 206$; $p = 0.081$) and have fewer entrepreneurial skills ($t = 1.851$, $df = 206$; $p = 0.066$). Concerning initial strategic decisions, the entrepreneurs who exit exhibit less leadership quality ($t = 1.758$, $df = 206$; $p = 0.080$). These results indicate the importance of human capital, which plays a role in the continuation of the professional career of an entrepreneur.

However, in terms of other human capital attributes, namely age, education level and founding experience, no significant difference between the entrepreneurs who exit and the surviving entrepreneurs was revealed. We have not found any studies on the relationship between founding experience and entrepreneurial exit. There are studies on failure and surviving firms. However, noting that exit is not equated with

failure, any reference to those studies should be extrapolated cautiously. The nature of the founding experience and its bearing on firm survival is inconsistent. A recent study reveals a non-linear relationship between founding experience and firm performance. The study highlights that the level of experience and similiarity of contexts determine the performance of subsequent venture (Toft-Kehler et al. 2014). Concerning founding motives, we could not detect any difference. Mean values of personal traits like need for achievement, locus of control and risk taking are also not significant.

We also tested for the difference in relation to the environment and firm variables. We found that firms where the entrepreneurs performed an exit tend to face a less complex environment ($t = 2.008$, $df = 206$; $p = 0.046$). We did not find a significant difference in relation to the hostility and dynamism of the environment. Concerning firm structure, the exit entrepreneurs spend less time on tasks regarding production ($t = 2.529$, $df = 206$; $p = 0.012$), information seeking ($t = 1.804$, $df = 206$; $p = 0.073$) and sales ($t = 1.922$, $df = 206$; $p = 0.056$). The entrepreneurs who exit spend less time on operating their business ($t = 2.878$, $df = 206$; $p = 0.006$), have a lower number of employees ($t = 3.360$, $df = 178.6$; $p < 0.001$) and invested lower starting capital ($t = 3.287$, $df = 206$; $p = 0.001$). Overall, we may conclude that entrepreneurs who exit have spent less time with their business. Concerning resources, exit entrepreneurs deploy lower resources in terms of employees and capital. The limited resources indicate the smallness of the firms (Aldrich and Auster 1986), which can inhibit entrepreneurs from being persistent with their business.

We can also report that there are minor differences concerning the industry between firms of the exit entrepreneurs and the existing (survival) entrepreneurs (Chi-Square = 6.341, $df = 3$; $p = 0.96$). Among entrepreneurs from the service sector, 22.5 % quit their entrepreneurial career, while only 15.6 % from the trade sector and 5.3 % from the production and construction sector exited the market.

5.2.2 Reasons for and Ways to Exit

In order to understand the reasons for entrepreneurial exit, we asked those surveyed to respond to 13 statements, shown in Fig. 1. The scale was developed based on Yusuf (2012), DeTienne (2010), Harada (2007), Politis and Gabrielsson (2007), Maertz and Campion (2004), and Watson and Everett (1993).

The alternative reasons are represented by "pursuing more attractive activity/job" and "pursuing another, more prosperous business opportunity". Within this category of exit reasons, a more attractive job leads to exit more often than another business opportunity. Overall, alternative reasons are often quite strong in the early stage of a new venture, since the entrepreneurs may recognize that being an entrepreneur is demanding and discover more attractive opportunities (DeTienne 2010).

Normative reasons, represented by "family issues", "illness" and "conflicts (internal/external)" influenced only a minority of the respondents in their decision to exit. In the case of business discontinuance, the 2014 Global Entrepreneurship

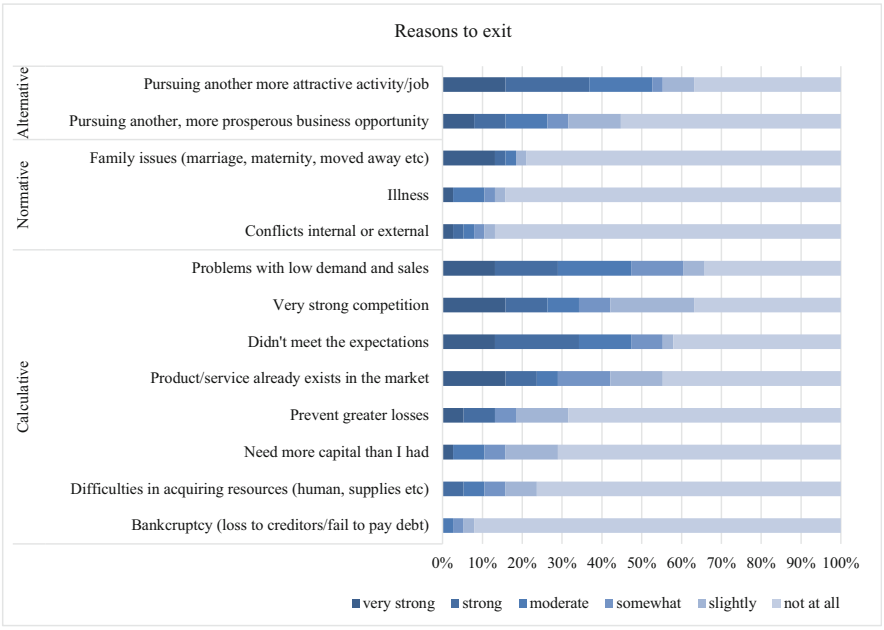

Fig. 1 Reasons to exit

Monitor reports that personal reasons, which resemble normative reasons, are the second-most cited reasons (Singer et al. 2015).

Turning to calculative reasons, we first report on reasons, which are related with product/service. Problems with low demand or sales are stated as a reason for exit to a certain degree by 65.8 % of respondents. The "product/service already exists in the market" and "very strong competition" are indicated by 55.3 % and 63.2 %, respectively. The three reasons are related to the newness and smallness of the firm. In addition to that, most entrepreneurs (55.3 %) in this study do not have experience in founding a company, which signals newness to the profession of entrepreneurship.

Secondly, we find that the results regarding expectation are interesting. "Didn't meet expectations" is mentioned by more than half of the respondents (57.9 %). In the early stages, entrepreneurs seem to realize that the life of entrepreneurs is not as pleasant as they originally imagined. Their frustration in handling the situation leads them to abandon their entrepreneurial endeavours.

Thirdly, there is a moderate number being shown for the reason "to prevent greater losses" (31.6 %). Entrepreneurs may face the situation that their firms start to generate losses and they are unable to turn the situation around (van Witteloostuijn 1998). An exit becomes a way for the entrepreneurs to continue to bear the financial loss.

Fourthly, calculative reasons regarding (financial) resources ("need more capital" and "difficulties in acquiring resources") are only mentioned by 28.9 % and

23.7 % respectively. It is surprising that the entrepreneurs of these early-stage firms do not encounter problems with resource acquisition more often, because these kinds of problems are typical for the early stage of a firm (Aldrich and Auster 1986).

Involuntary or forced exit as the last of the calculative reasons, indicated by "bankruptcy", is only stated by three entrepreneurs (7.90 %). Instead of declaring bankruptcy, entrepreneurs seem to sell the assets and pay off the debts in order to avoid the stigma attached to bankruptcy (Pretorius 2009).

Regarding the ways to exit, there are only two entrepreneurs (5.3 %) whose firms continued to operate after their exit. Although this number is small, it indicates that entrepreneurial exit does not always mean a firm's discontinuation or closure (Bates 2005).

Fourteen entrepreneurs (36.8 %) only closed their firms temporarily and are planning to continue. These findings reflect a specific context in Austria, which allows firms to be temporarily out of operation. Most entrepreneurs (57.9 %) stated that their firms exited from the market permanently through the closure of the companies.

Only a small number of respondents reported a financial loss (six cases). There were 11 entrepreneurs (28.9 %) who had a financial gain overall from their entrepreneurial activity. The rest (more than half) had neither financial loss nor gain. These findings highlight that an entrepreneurial exit is certainly not to be equated with failure in terms of financial loss for the entrepreneurs.

After the entrepreneurs exited from (deactivated) their founded firms, most entrepreneurs became employees (44.7 %). Interestingly, nine entrepreneurs (23.7 %) remained as entrepreneurs in a different company or became self-employed. Some entrepreneurs became jobless or retired (21.1 %). A small number took up a course of study (10.5 %). Regarding future entrepreneurial activity, 13 respondents are either already engaged in setting up new firms or planning to have a new company in the future. Meanwhile, 13 entrepreneurs are undecided about re-entering an entrepreneurial activity. There were 12 persons who stated that they have no intention to become an entrepreneur again.

6 Conclusions, Limitations and Implications

In this article, we provide findings on personal-related reasons (alternative and normative) and firm-related reasons (calculative) to perform an entrepreneurial exit. In descending order, reasons which are indicated in varying degree by the majority of the respondents (more than half) are "problems with low demand and sales", "very strong competition", "pursuing more attractive jobs/activity" and "didn't meet expectations". The first two reasons are related to typical situations, which entrepreneurs often face in the early stage of the firm. The reasons "pursuing more attractive jobs/activity" and "didn't meet expectations" indicate that there is a critical reference point at which entrepreneurs decide to exit. Further investigation using the lens of the threshold theory (Gimeno et al. 1997) and the prospect theory (Kahneman 2003) may be valuable to understand the basis of the exit decision. A

more detailed study on the decision-making process and the reference points can offer an opportunity for further research by applying qualitative approach.

With regard to the ways of exit, the results can be highlighted as follows. Firstly, an exit in the form of a temporary closure is specific to the context of Austria, where such a temporary exit is possible. Secondly, in the early stage, the voluntarily exit is dominant, rather than the forced exit (bankruptcy).

This study is not without limitations. The sample of entrepreneurs who exit is small, although we had the advantage of longitudinal data being gathered in two cross-sections. In addition, our sample represents only single entrepreneurs, while future research can investigate other group of entrepreneurs. Owing to the small sample size, we only conducted a descriptive analysis, explaining the phenomena of entrepreneurial exit.

The implications of this study are of interest not only for entrepreneurs and the scientific audience, but also for policy makers and financiers. For entrepreneurs, the study of the exit will lead to a better understanding about the entrepreneurial exit concerning the reasons for and the ways to exit. For the scientific community, this study contributes to the limited literature on the entrepreneurial exit, adding to further investigations on reasons and ways to exit. For policy makers, this study will contribute to the development of regulations or incentives for entrepreneurs to take a "second chance", as well as to the promotion of entrepreneurship. Lastly, for financiers, the findings may guide them when assisting entrepreneurs in choosing ways to exit.

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Well-Being and Work-Life Balance: Differences Between Entrepreneurs and Non-Entrepreneurs

M. Camino Ramón-Llorens, Isabel Olmedo-Cifuentes, and Antonia Madrid-Guijarro

Abstract

This paper is a preliminary study about the main variables that impact on well-being and the use of work-life balance (WLB) practices, bearing in mind the type of employment, entrepreneurs versus non-entrepreneurs. The relationship between being self-employed and well-being is at least controversial, as there are factors which hamper and foster this relationship. The study is based on the data obtained by means of a self-administered questionnaire addressed to a sample of 100 Spanish engineers. The first results show the existence of significant differences among the variables that generate well-being. In particular, entrepreneurs present a higher job and career satisfaction, enjoying a better social inclusion and WLB culture. In fact, the use of WLB practices among entrepreneurs is higher than among regular employees, which may be a stimulus to entrepreneurship. Being an entrepreneur is not as difficult as people think and this preliminary analysis shows that they may enjoy a more pleasant situation than employees.

Keywords

Entrepreneurs • Career satisfaction • Job satisfaction • Social inclusion • Work-life balance culture • Work-life balance practices

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1 Introduction

Currently there is a growing interest in analyzing entrepreneurship from academic researchers, the European Commission and national governments. The reason for this is the general consensus in social, political and academic circles on the importance of entrepreneurs and how new companies are key drivers of wealth generation and welfare (Liñán 2007; Nyström 2012). Entrepreneurial activity is particularly relevant in the development of innovation, competitiveness, job creation and economic growth (Moriano et al. 2006). Therefore, this contribution to economic growth justifies the analysis of the variables that can affect well-being in entrepreneurs and the aspects that can enhance its promotion among citizens, such as a better work-life balance.

Entrepreneurs are individuals who decide to create their own company to exploit a business opportunity or to escape unemployment (Binder and Coad 2013). Contrary to this position are individuals in regular employment or wage/salaried employees/earners who are hired by entrepreneurs. The working conditions of these two groups are different and this may affect the well-being (happiness and satisfaction) of each group (Andersson 2008). In particular, the number of hours worked for the company is positively correlated with the self-employed people's satisfaction (Chay 1993; Block and Koellinger 2009). Moreover, they become more satisfied due to being their own bosses, which allows them to live a more independent lifestyle (Binder and Coad 2013), and to have a greater autonomy, more flexibility, skill utilization and higher job security (Hundley 2001). Entrepreneurs are able to have control over their own working hours, and over the effort expended on the job (Benz and Frey 2004). Conversely, they are not as satisfied as employees when they feel that their jobs require more responsibility and consequently they have less free time than wage/salaried earners (Andersson 2008), more work-family conflict (Parasuraman and Simmers 2001) and higher levels of work stress (Jamal 1997; Lewin-Epstein and Yuchtman-Yaar 1991).

In any case, the relationship between being self-employed and well-being is at least controversial. Although evidence on the relationship between both variables is scarce (Andersson 2008), some papers show that self-employment is related to certain variables that create well-being, such as job satisfaction (Thompson et al. 1992; Blanchflower and Oswald 1998; Blanchflower 2000, 2004; Hundley 2001; Bradley and Roberts 2004; Taylor 2004; Benz and Frey 2008; Millán et al. 2013), and others consider that certain factors are hampering this relationship, for example the returns to self-employment are lower, on average, than those obtained from employment (Hamilton 2000; Binder and Coad 2013). Some of the reasons for these differences can be due to the different personality types attracted to the two groups. Self-employed workers should have a greater willingness to take risks and a high self-assertiveness, a high need for success, achievement, autonomy and control (Kolvereid 1996) and more self-efficacy (Bradley and Roberts 2004) and commitment (Felfe et al. 2008).

Regarding work-life balance (WLB), the current family model of dual-earner couples has created some conflicts between work and family roles. Both members

of the couple have a professional career and a private life, which means that the time and energy that is devoted to one limit the time and energy available for the other. Thus, the implementation of WLB practices has been promoted in recent years. However, little research has been devoted to analyzing how the type of the employment (entrepreneurs and salaried employees) affects the use and availability of WLB practices.

This paper tries to offer a preliminary approach to assess if entrepreneurs enjoy a higher well-being than non-entrepreneurs and a comparison of the use of WLB practices between these two groups as a possible key issue in the stimulus of entrepreneurship. Therefore, the aims of this paper are twofold: (a) analyzing the variation of the main variables related to well-being, and (b) studying the WLB practices that are enjoyed by the Spanish engineers considering (in both cases) the type of employment, i.e. entrepreneurs versus non-entrepreneurs.

The paper proceeds as follows. First, Sect. 2 discusses the literature about well-being and the variables that affect it, mainly among the self-employed. Then, methodology is reported, including participants, data collection and measures used. Section 4 presents the results obtained, and Sect. 5 discusses the results, offering the conclusions and future research paths.

2 Theoretical Framework

In general, well-being is a concept linked to different issues such as health, happiness, satisfaction, security or relationships among people. However, we are going to focus on a group of specific organizational and social conditions that can affect the well-being of entrepreneurs and non-entrepreneurs. In this context, well-being can be defined as the perception that each individual has about his/her quality of life, being the individual assessment of the personal situation in relation to certain environmental circumstances. This idea fixes onto the subjective well-being approach (EUROSTAT 2015) and, in particular, the evaluative perspective, where individuals carry out a reflection and assessment of certain aspects of their life (Tinkler and Hicks 2011).

This paper considers that well-being may be affected by seven variables: job satisfaction, career satisfaction, family satisfaction, social inclusion, work pressure, work-family conflict and work-life balance culture (Fig. 1).

Job satisfaction is a widely considered variable that impacts on well-being, especially taking into account the type of employment. According to previous empirical analysis, self-employed people experience greater job satisfaction than regular employees, because they enjoy greater levels of autonomy, flexibility and freedom (Benz and Frey 2008). Andersson (2008) finds for a Swedish sample that being self-employed leads to an increase in job satisfaction, obtaining a positive correlation between self-employment and life satisfaction. However, Cortés et al. (2013) do not find differences between entrepreneurs and regular employees in terms of job satisfaction. They consider that maybe the positive effect of the

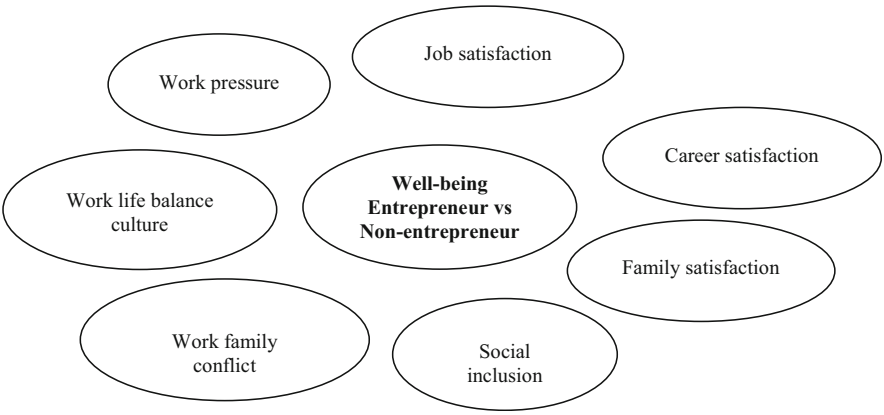

Fig. 1 Well-being assessment among entrepreneurs and non-entrepreneurs

autonomy and flexibility of self-employed people is offset by the economic insecurity and lack of stability linked to the job in the Latin American context.

Career satisfaction is another variable considered in this study of well-being. Although at first it may seem like job satisfaction, the extant literature has clearly differentiated these two concepts (Judge et al. 1994; Beutell and Wittig-Berman 1999; Parasuraman and Simmers 2001). Career satisfaction is a general measure of achievement, which reflects the overall affective orientation that individuals have toward their work role (Gattiker and Larwood 1988) taking into account the progress and success across the different jobs performed (Greenhaus et al. 1990). Job satisfaction refers to the positive or negative feeling about the present job (Vroom 1964; Schermerhorn et al. 1994) and the reaction of the workers to the work environment (Berry 1997).

Despite the inclusion of career satisfaction as a determinant of life satisfaction (Beutell and Wittig-Berman 1999), it has not been considered as an issue when the differences between entrepreneurs and non-entrepreneurs have been studied. We believe that being your own boss and the challenge of entrepreneurship may promote a major feeling of well-being among entrepreneurs. The self-employed work is more often as meaningful and challenging than paid employment, which may consequently result in higher levels of well-being (Millán et al. 2013). However, the personality and the reasons for becoming an entrepreneur (as an opportunity or as a necessity) may affect the perception of well-being (Binder and Coad 2013).

Family satisfaction is a further important area in the well-being of individuals. It is in part related to marital satisfaction, which is defined as an attitude of higher or lower favorability towards one's own marital relationship (Roach et al. 1981). Some authors point out that marital satisfaction is expected to be linked to job satisfaction due to the phenomenon of mood spillover (Ilies et al. 2009). Consequently, if entrepreneurs experience higher job satisfaction they are expected to feel the phenomenon of mood spillover leading to a higher family satisfaction.

However, we cannot forget that the sacrifices made by the entrepreneur in terms of time and effort at work can hamper the marital relationship, because the work mood spills over to the mood at home. In this study, we focus our attention on the differences in terms of marital satisfaction between entrepreneurs and non-entrepreneurs.

Social inclusion or social satisfaction is also an important component of well-being. As people are embedded in a social system, the fact that individuals find their relations with co-workers and friends satisfactory will increase their well-being. This concept corresponds with the social needs defined in Maslow's (1954) hierarchy. In this sense, due to the fact that entrepreneurs have more flexibility to organize their social life, it is expected that they enjoy a higher social satisfaction than non-entrepreneurs.

Work pressure or work role overload is also considered as a factor of well-being, because it refers to the perception and feeling that there are too many things to do and not enough time to do them (Greenhaus and Beutell 1985). However, Andersson (2008) states that entrepreneurs appear to be less likely to perceive their job as mentally straining. The reasons behind this evidence can be found in the higher level of freedom and self-determination at work. Along the same line, Carree and Verheul (2012) point out that entrepreneurs deal with stress much better and are much more satisfied with their leisure time than salaried employees, when individuals base their decision to become an entrepreneur on the perspective of combining work and household responsibilities. In these cases, they are better aware of and prepared for the necessary effort (Carree and Verheul 2012).

The previous idea is also connected to *work-family conflict* (WFC). This can be defined as an inter-role divergence caused by the fact that work and family roles are mutually incompatible (Greenhaus and Beutell 1985), because individuals are not able to satisfy all the expectations of both of them.

Being the owner of the firm involves important work responsibilities that are time-consuming. Therefore, entrepreneurs face a trade-off between family and work roles. Consequently, WFC is present in self-employed people, reducing their well-being. Moreover, self-employment may be harmful in terms of poor job security in times of crisis, leading to higher stress. However, other authors consider that the combination of work and household responsibilities is a relevant factor for a substantial number of entrepreneurs (Wellington 2006). Flexibility may facilitate the balance of demands and responsibilities of work and family roles. In fact, papers such as Loscocco (1997) highlight that WFC can be resolved through the entrepreneurship.

Another way to decrease WFC is to develop *work life balance* (WLB) *culture*. WLB is the desire of all individuals (not only those with family responsibilities) to reach a balance between their paid work and their family and personal life (Khallash and Kruse 2012). WLB culture offers the possibility to change working routines, procedures, management styles and practices (Frone 2003) to balance the different responsibilities. Therefore, less WFC is experienced when organizations are family-supportive (Lapierre et al. 2008).

Since self-employment is usually associated with flexibility and with choice over when, where and how much to work (Bell and La Valle 2003), it is, per se, more family friendly than regular employment (Baines and Gelder 2003). Unlike employees, self-employed people are not tied to workplace routines. When an organization sets routines of long hours as evidence of organizational commitment, the employees find it difficult to balance work and family life (Lewis 2001). As a result, some individuals choose self-employment as family friendly strategy in order to escape such cultures and achieve a WLB (Mauthner et al. 2001). For entrepreneurs, their families are the most important support that helps them to achieve a sense of work-family balance (Eddelston and Powell 2012), due to the fact that those entrepreneurs who receive greater levels of support feel more energized to succeed, knowing that their family is behind their entrepreneurial efforts (Eddelston and Powell 2012).

To reduce WFC and put into practice a WLB culture, *WLB practices* are necessary. These practices include schedule flexibility, part-time working, teleworking, job sharing, family leave programs, and childcare and eldercare support (White et al. 2003; Beauregard and Henry 2009), among others. It is a fact that flexible workers present higher levels of job satisfaction and organizational commitment than their non-flexible counterparts. However, these WLB practices are not always suitable for all the employees when they fear negative career consequences with the use of certain practices such as family leave (Kodz et al. 2002; Budd and Mumford 2006). Along that line, Houston and Waumsley (2003) state that employees are usually concerned that using flexible working arrangements will damage not only their promotion prospects but also their relationships with co-workers and managers, as a consequence of being considered as having lower levels of organizational commitment. Bearing this in mind, it seems that entrepreneurs have more facilities to use WLB practices than non-entrepreneurs due to their greater autonomy and flexibility.

3 Methodology

3.1 Sample

This paper is based on an empirical application using the very first data obtained from the field work of the Project *La conciliación como instrumento de inclusión social de la mujer ingeniera* funded by Instituto de la Mujer (Spanish Government). Information is collected through a self-administrated questionnaire addressed to Spanish engineers during the year 2014. The sample is composed of 100 observations. The main characteristics of the sample are shown in Table 1. The average age of the respondents is between 36 and 40. Most of them are married (65 %), and 47.6 % of them have family responsibilities (children or dependent people). The average time dedicated to work in the total sample is 9.64 hours per day. This number of hours is much higher for the case of entrepreneurs (17.09 hours per day).

Table 1 Sample characteristics

	Entrepreneurs (10)	Non-entrepreneurs (90)
Age (mean)	40	36
Gender (% male)	90.9 %	72.8 %
Married	63.6 %	65.2 %
Children or dependent people	45.5 %	47.8 %
Hours a day dedicated to: (mean)		
● Work	17.09**	8.75**
● Children care	1	1.56

Note: * p-value ≤ 0.1, ** p-value ≤ 0.05, *** p-value ≤ 0.01

To analyze the existence of significant differences between entrepreneurs and employees we perform parametric and non-parametric tests, the *t student* and the *Mann-Whitney* contrasts.

3.2 Variables

The variables analyzed in this preliminary approach are those reviewed in the above literature and included in Fig. 1. All of them were assessed through a 7-point Likert scale (1: strongly disagree/very dissatisfied/very poorly considered; 7: strongly agree/very satisfied/very well considered). The items used to measure each one of variables (job satisfaction, career satisfaction, family satisfaction, social inclusion, work pressure, work-family conflict and work-life balance culture) are included in Table 2, which also shows the authors who proposed each one of them.

We have checked the reliability of each scale through Cronbach's Alpha, which are between 0.76 and 0.98 and are thus assured of its suitability (Table 2).

As a factor analysis verified that the items of each measure can be summarized by a single factor (Table 2), we compute them to obtain a single measure of each variable and make the comparisons between entrepreneurs and non-entrepreneurs.

In the case of WLB practices, engineers were asked to indicate if their firms use specific procedures. Following De Cieri et al. (2005), we use a list consisting of nine WLB practices: part-time work with reduction of salary, compressed week, continuous working days, flexible holiday programs, maternity/paternity leave above and beyond the legal entitlement, unpaid leave to care for sick family members or dependents (or career breaks), extra days of holidays without pay, absence/leave for child or dependent-care, teleworking (either full or part-time).

4 Results

In order to gain insights into the understanding of the research questions, we perform univariate analysis to identify significant differences between entrepreneurs and non-entrepreneurs in relation to the variables previously defined. To do this we considered both parametric (t-student) and non-parametric tests

Table 2 Variables' definition and scale reliability

Variables (author/s who proposed them)	Scale reliability
Job satisfaction (Hausknecht et al. 2008) (a) Job level challenge (b) Relationship with colleagues (c) Autonomy (d) Safety (e) Recognition (f) Promotion possibilities	Cronbach's $\alpha = 0.84$ Explained variance: 57.2 % Sig. Bartlett: 0.000 KMO:0.81
Career satisfaction (Greenhaus et al. 1990) (a) Level of success in my professional career (b) Achievement of my salary target (c) Achievement in my promotion objectives (d) Acquisition of knowledge and skills	Cronbach's $\alpha = 0.91$ Explained variance: 79.35 % Sig. Bartlett: 0.000 KMO: 0.82
Family satisfaction (Ilies et al. 2009) (a) Currently, I feel that I have a good marriage or partnership (b) Currently, I believe that my relationship with my spouse or partner is very stable (c) My marriage or relationship is very strong (d) I feel I am part of a team with my spouse or partner (e) My relationship with my spouse or partner makes me happy	Cronbach's $\alpha = 0.98$ Explained variance: 92.61 % Sig. Bartlett: 0.000 KMO: 0.851
Social inclusion (Ilies et al. 2009) (a) I have many friends outside my job (b) I enjoy my social life (c) My friends and I talk about projects (d) I make leisure plans with my friends (e) I see my friends as often as I like (f) I dedicate part of my time to my hobbies	Cronbach's $\alpha = 0.86$ Explained variance: 60.6 % Sig. Bartlett: 0.000 KMO: 0.821
Work pressure (Russell et al. 2009) (a) My job requires a high level of effort (b) I work under high pressure (c) I have to work overtime to finish my job	Cronbach's $\alpha = 0.77$ Explained variance: 69.7 % Sig. Bartlett: 0.000 KMO: 0.69
Work-family conflict (Kopelman et al. 1983) (a) Stress or work problems often affect my family life (b) Work prevents me from spending the time which I would like with my family (c) I have had to give up important things related to my home or my family because conflict with other work-related issues	Cronbach's $\alpha = 0.76$ Explained variance: 68.3 % Sig. Bartlett: 0.000 KMO: 0.763
Work-life balance culture (Kofodinos 1995*)* (a) To start a new family or have a baby (b) To leave the job to take care of the children or an ill family member (c) To extend the maternity or paternity leave (d) To establish a maximum number of hours to be spent at the work (e) To maintain a family structure which requires family demands	Cronbach's $\alpha = 0.90$ Explained Variance: 71.3 % Sig. Bartlett: 0.000 KMO: 0.794

(U-Mann Whitney). Table 3 shows the outcomes of this method. The results illustrate that entrepreneurs present a similar level of work pressure (p: 0.339; 0.390) to organizational employees. This result is influenced by the crisis environment in which the study was developed. Organizational employees faced a lot of

Table 3 Univariate analysis

Mean values	Entrepreneur	Non-entrepreneur	T-Student (p-value)	Mann Whitney
Job satisfaction	0.637	−0.056	0.060*	0.056*
Career satisfaction	0.649	−0.079	0.022**	0.026**
Family satisfaction	0.314	−0.032	0.422	0.973
Social inclusion	0.740	−0.088	0.009**	0.003**
Work pressure	0.273	−0.033	0.339	0.390
Work-family conflict	0.002	−0.0003	0.999	0.783
WLB culture	0.780	−0.09	0.005**	0.016**

Note: Difference significance according to T-student and U Mann-Whitney contrast: * p-value ≤ 0.1, ** p-value ≤ 0.05, *** p-value ≤ 0.01

Table 4 Work life balance practices mean value and significance of differences

WLB practices	Total sample	Entrepreneur	Non-entrepreneur
Part-time work with reduction of salary	2.16	3.11**	2.04**
Compressed week	2.15	3.10**	2.04**
Continuous working days	2.79	3.10	2.75
Flexible holiday programs	2.86	3.56**	2.79**
Maternity/paternity leave over and above the legal entitlement	1.88	2.67**	1.79**
Unpaid leave to care for sick family members or dependents	2.09	2.78**	2.00**
Extra days of holidays without pay	1.80	3.00**	1.67**
Absence/leave for child- or dependent-care	2.12	2.78**	2.03**
Teleworking (either full or part time)	1.87	3.30**	1.70**

**Difference significance according to T-student and U Mann-Whitney contrast

pressure from the contraction of the labor market and high unemployment rates during the year 2014. The findings also show significant differences in favor of the entrepreneur sample in terms of job satisfaction (p: 0.060; 0.056), career satisfaction (p: 0.022; 0.026) and they enjoy better social inclusion (p: 0.009; 0.003). These findings are in line with previous literature, which points out a higher well-being in the self-employed (Andersson 2008; Carree and Verheul 2012). Consequently, entrepreneurs perceive that characteristics linked to their own business (level of autonomy, flexibility and freedom) somehow benefits their well-being. No differences between the remaining variables have been observed, so both entrepreneurs and non-entrepreneurs have the same levels of family satisfaction and work-family conflict.

In a next step, we analyze whether entrepreneurs and non-entrepreneurs use WLB practices to a different extent. Table 4 displays a descriptive view for each WLB practice included in the study for the whole sample and for each of the subsamples. As before, through T-student and U Mann-Whitney contrasts we

observe the existence of significant differences between the practices used by entrepreneurs and employees. Although entrepreneurs present all factors above the mean value, the practice more often used by both entrepreneurs and non-entrepreneurs is the chance to enjoy a flexible holiday program. The rest of the WLB practices studied used to a much greater extent by entrepreneurs than by employees. Entrepreneurs are used to working from home (mean 3.30 vs. 1.70), they are able to reduce their working hours (part-time work) beyond the legal entitlement with salary reduction (mean 3.11 vs. 2.04), they can enjoy the compressed week (mean 3.10 vs. 2.04), and extra days of holiday without pay (mean 3.00 vs. 1.67), among others.

5 Conclusions and Further Research

In this preliminary research we have tried to examine whether entrepreneurs enjoy higher well-being than non-entrepreneurs, by analyzing the differences of certain variables that affect it, such as job satisfaction, career satisfaction, family satisfaction, social inclusion, work pressure, WFC and WLB culture. In all these variables, entrepreneurs present a higher mean than non-entrepreneurs. However, significant differences between entrepreneurs and regular employees only emerged in job satisfaction, career satisfaction, social inclusion and WLB culture.

In the case of job satisfaction, it seems that the greater level of autonomy, flexibility and freedom that self-employed people have is more relevant than the possible lack of stability that they could suffer (Cortés et al. 2013). Career satisfaction is also higher for entrepreneurs than for salaried employees, which shows that the level of achievement of the first is assessed more positively than by the latter group. Therefore, we found empirical evidence that entrepreneurs have a better feeling about their progress and success in their career than non-entrepreneurs. As well as this, social inclusion is higher for self-employed people than employees, which may be associated with the good perception that people have about entrepreneurs and their flexibility in organizing their social life. Finally, it is interesting that WLB culture will generally be perceived as higher among entrepreneurs than employees. Maybe one of the reasons to become an entrepreneur is to be able to balance work and family roles and not to be tied to workplace routines. However, employees seem not to have the same perception; maybe they consider that the WLB culture developed is not enough to cover their needs and a greater implication of entrepreneurs in this issue is necessary.

The rest of the variables taken into account in the evaluation of well-being (family satisfaction, work pressure and WFC) reveal no significant differences between entrepreneurs and non-entrepreneurs. Although we consider that the sacrifices made by the entrepreneurs in terms of time and effort at work may dampen their family satisfaction, no differences have been found with regard to regular employees. This is a positive issue in the sense that the type of employment is not going to affect the family satisfaction, being one obstacle less for future entrepreneurs who want to embark on this path. Work pressure is another variable

generally considered higher for entrepreneurs than non-entrepreneurs. Although its mean is superior for entrepreneurs, no significant differences have been found, which means that both groups feel work pressure. Finally, WFC is also similar for self-employed people and employees. Some literature established that entrepreneurs support lower levels of WFC (Loscocco 1997), while other authors found more severe role conflicts within the entrepreneurial careers (Perrons 2003). However, our results do not support the previous ideas, as there is no significant difference between entrepreneurs and non-entrepreneurs, because both types of workers suffer from the same level of WFC. One reason that can justify our result may be related to the amount of hours entrepreneurs devote to work. In fact, although entrepreneurs are more family-friendly in relation to the design and use of WLB practices, they spend many more hours at work, showing that the flexibility is being used to balance the higher work demands they face and the family responsibilities. In this sense, if entrepreneurs were able to use WLB practices to control the amount of hours, they would enjoy a lower level of WFC.

According to these results, entrepreneurs seem to enjoy higher well-being than non-entrepreneurs, which may be a reason to promote entrepreneurship among citizens. Being an entrepreneur is not as difficult as people think and this preliminary analysis shows that they may enjoy a more pleasant situation than employees. In fact, they are more likely to promote and use WLB practices than regular employees, bearing in mind the results obtained. The use of these practices is always above the mean in the case of entrepreneurs, which confirms that they have more facilities to use WLB practices than non-entrepreneurs, maybe because of their greater autonomy and flexibility. The practice more often used by both entrepreneurs and non-entrepreneurs is the flexible holiday programs, but entrepreneurs also use regularly teleworking (work from home), part-time work, compressed week, continuous working days and extra days of holidays without pay. This reveals that the possibility to use WLB practices may be a stimulus for entrepreneurship.

However, the conclusions presented have some limitations that may be consider as future research paths. The main limitation is the preliminary nature of the study. The results have been obtained though a limited sample of Spanish engineers, so the sample should be increased and other sectors considered to generalize the conclusions. Second, it would be interesting to analyze how the entrepreneurial satisfaction is affected by the existence of WFC and how the use of WLB practices allows entrepreneurs to reduce the conflict and increase the satisfaction. In this sense, the identification of the best WLB practices to control the number of hours the entrepreneur spends on work is fundamental. Besides, in future research, the gender variable should be considered, as many women choose the entrepreneurial career in order to achieve an appropriate balance between work and family. In this case, one might expect to find a positive effect of WLB practices and the decrease in WFC.

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Post-Entrepreneurs: Self-Employed People in Retirement

The Case of Old Age Pensioners in Germany

Uwe Fachinger

Abstract

One central aim of people is to maintain a decent standard of living and quality of life into old age. However, even the best financial literacy is not enough to deal with the imponderables of the future. For this reason, to help people reach these goals, most countries design their old-age security as a three-pillar system composed of statutory, occupational, and private pension schemes for employees. Nevertheless, self-employed people must rely heavily on private old age insurance to maintain their living standard after retirement, as they are not covered by occupational pension schemes; statutory pension systems in general only ensure a subsistence level with a few exceptions, as in Austria.

Therefore, the question arises whether old age provisions for self-employed people are adequate and fit their special situation. Are self-employed people better off with the freedom to choose the mix of old age provisions and to form a portfolio that is oriented to the specific situation of the person? What is the income situation of formerly self-employed people: Do they have enough money saved for old age to live a decent life? Overall, this paper explores questions concerning the old age income situation of formerly self-employed people.

Keywords

Self-employed people • Old age pensions • Retirement

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1 Introduction

Three global trends have been observed during the last several decades:

- general process of globalisation;
- fundamental rise in services; and
- secular change towards an information society.

Against this background, working conditions also have generally changed as a result of new technologies, increased demands for flexibility, and new and rapidly changing market situations combined with worldwide dynamics. Development during the last decades has led to more heterogeneity and differentiation, destandardisation and mobility, hybridisation of work, and precarisation of work and working conditions.

- Heterogeneity and differentiation: The number of self-employed persons has risen during the last 15 years. The differentiation of the self-employed reveals that the number of solo self-employed persons has been increasing and indicates that this development is likely to continue.
- Destandardisation and mobility: An increase of unsteadiness of employment with frequent changes between dependent employment and self-employment as well as changes between unemployment and employment. Destandardisation suggests significant differences in views of social positions, which are illustrated *inter alia* by economic activities.
- Hybridisation of work: A new line of segmentation in the labour force has occurred and new forms of casualisation have resulted from below-average incomes and instable social positions in short-term contracts as well as risky market positions.
- Precarisation: Precarisation of work refers to the circumstance that income from gainful occupation is close to the minimum subsistence level. Self-employed people are directly linked with the phenomenon of the working poor, so that the question arises *inter alia*, to what extent does self-employment exhibit analogue forms of a modern day labourer?

Because of developments that occurred during the last decades, the careers of self-employed people have become even more heterogeneous. On the one hand, this is seen as positive from an economic point of view, especially with respect to the mobility of labour as a production factor. On the other hand, the situation is problematic regarding the insurance of social risks.

In general, people have more than one occupation during their lives. The economic life cycle of people varies over time. After leaving school, people may become employed in a firm, become unemployed, get out of unemployment by running a business, and so on. The numbers of people with stable careers or lifelong employment in one firm or in another employment status are decreasing. Those activities end when the worker leaves the labour market for retirement. During such careers, people are sometimes covered by social security systems and sometimes not.

The following provides examples of considerable problems encountered when a closer look is taken at the risk of longevity with regard to outliving one's income. One group that stands out in this regard are those who are self-employed at least during certain phases of their working lives. They do not necessarily belong to only one system over time. Therefore, the coordination of the various systems is important for them.

2 Old Age Pension

From an economic point of view, income in retirement is seen as a reflection of the income and saving decisions during one's working life. However, this is largely a too simplistic view, as people make their decisions about consumption and saving during their lifecycle with respect to the particular institutional arrangements and legislation. People are confronted with differing regulations at various stages of their working lives, which cause age, period, and cohort effects. Even more, these conditions vary over time. Adjustments are not easily carried out and are often cost intensive.

Self-employed people face a choice of old age provisions. In many countries, such provisions are not mandatorily insured in a statutory old age pension system in which the main objectives are the avoidance of poverty and the maintenance of living standard and quality of life in old age. This is the case, for instance, in the United States, the United Kingdom, the Netherlands, and Germany.[1]

Principally, there are three forms of old age provision for the self-employed:

- The firm transfers to others, persists, and pays the retiree regularly (monthly). This only works as long as the firm exists and makes constant profit;
- The firm or business property can be sold and the received capital annuitized (i.e., converted into a stream of regular income); and
- The self-employed must save money for their old age as long as they are active and choose forms of insurance that guarantee income replacement during retirement.

Mostly, there is only a fiscal incentive to set aside retirement savings, together with market-based annuity-alike products, which is what economists refer to when they talk about pension savings (see, e.g., Power and Rider 2002).

One's success in reaching adequate old age provisions is determined by two aspects: The willingness to save and the ability to save.

Willingness to save for retirement requires at least

- an awareness of the need for old age provision;
- the knowledge of how to do it, the so-called *financial literacy*. However, even the best financial literacy is not enough to deal with the imponderables of the future as history has shown time and time again;

[1] For an overview, see, e.g., Directorate-General for Employment (2014).

- basic knowledge about the social security system (e.g., whether or not it is mandatory to be insured in the statutory pension scheme, the level of financial security, and how benefits are adjusted during retirement); and
- trust concerning the reliability of the chosen product and institution.

In general, the economic behaviour of people is myopic. People make financial decisions without taking into account what may happen in the distant future. They do not plan long-term and do not see the need for insurance against risks which are highly unlikely to occur (e.g., the need for long-term care), or for which occurrence is likely but will take place in 30 or 40 years. Even if people are willing to save to deal with insurance of risks that will occur in the distant future, people generally underestimate their future needs. This can be observed readily for old age provisions and long-term care. As a result, people do not have adequate resources when these risks occur and without external help (social assistance or from other people) they are underserved. Additionally, the literature indicates that self-employed people are overconfident, which may lead to suboptimal decisions and to wrong judgments about the need for and the amount of old age provisions. Another aspect that must be considered is people's time preferences. People care more about their present situation and the near future. As a result, people are more willing to save for health insurance than for old age or long-term care.

The second determinant of savings for retirement is the ability, which

- requires an appropriate income. Even if the time preference for present consumption is low, low income means low ability to save;
- depends not only on the individual but on the household. For example, the level of expenditures depends on the number and age of household members and the number of people with special needs.

If the ability to save is low, especially in case of low income, even a high degree of willingness to save

- will not lead to enough accumulated wealth and
- will not prevent self-employed people from low entitlements for old age provisions.

However, people generally save without the focus on insurance but on accumulating wealth for many different reasons. Saving in general does not insure against the risk of longevity (i.e., insurance against outliving one's income). Without perfect foresight, a utility-maximising allocation of income and expenditures over one's entire lifecycle is not possible. Hence, saving in a standard savings account, on business equity, or by purchasing real estate, are not appropriate measures by which to secure an income stream and to maintain one's living standard during retirement.

Against this background, the question is whether formerly self-employed people are well off during retirement. It can be stated that one of the central aims of people

is to avoid poverty and to maintain their standard of living and quality of life in old age. This can be seen as indicative of the lifecycle theory, in which individuals maximise their utility over the lifecycle. This utility-maximising behaviour leads to individual decisions that result in a steady income stream and smooth consumption expenditures over time. In such decisions, not only the phase of active labour but also the retirement phase are taken into account. In general, people try to maintain a decent standard of living after retirement, preferably on the same financial level as before and for the rest of their life.

To help people reach these goals, in most countries, old-age security is designed as a three-pillar system composed of statutory, occupational, and private pension schemes for employees. However, self-employed people are not covered by occupational pension schemes, and statutory pension systems in general only ensure a subsistence level with a few exceptions (e.g., the situation in Austria). Therefore, they rely heavily on private old age insurance to maintain their living standard after retirement.

The following sections first provide a short overview of empirical findings with the focus on Germany. This overview shows that little empirical analysis about the financial situation of formerly self-employed people has been done. Subsequently, the main characteristics of the used data, the income situation of formerly self-employed and now retired people, are described. A short summary and an outlook for further research complete the article.

3 Empirical Findings

Certainly we have much information about self-employed people's working lives and therefore know a little bit about them. Meanwhile, there exists a vast amount of literature on regional, national and international levels, but much less about insurance against social risks, let alone for old age provision (Directorate-General for Internal Policies of the Union 2013; European Commission 2005; Fachinger 2004; Mettler and Williams 2011; Schulze Buschoff and Schmidt 2009; Schulze Buschoff and Protsch 2006).

However, in reports by the European Commission, the regulations for European countries are given for specific groups of self-employed, which at least in some part are covered by mandatory pension systems [e.g., Directorate-General for Employment, Social Affairs and Inclusion (2014); for recent developments, see, e.g., Directorate-General for Employment, Social Affairs and Inclusion (2012)]. As the regulations are very different in each country, to get a better understanding of the situation, country-specific analysis is necessary.

With regard to specific countries, some research has been done on old age provision for self-employed people. However, the state of knowledge seems to be quite different. For example, in Germany, one milestone was the analysis by Fachinger et al. (2004), which published the first comprehensive overview of the situation. Since then, the social security of self-employed people has received more and more attention, in particular old age provision (Betzelt and Fachinger 2004;

Fachinger 2014; Fachinger and Frankus 2011, 2014; Frankus and Fachinger 2012; Koller et al. 2012; May-Strobl et al. 2011; Münstermann 2013; Niehues and Pimpertz 2012; Schulze Buschoff 2010; Ziegelmeyer 2013).

Despite all those analyses that have focused on the old age provisions of the self-employed, little is known about the situation after retirement. On the basis of a comparative analysis of ten countries[2] using the Gallup World Poll (GWP), Nikolova and Graham (2014) did not find any significant statistical differences between non-retired self-employed people and retirees with respect to well-being. However, the data are far from satisfactory, for example, with respect to covering the heterogeneity of self-employed people, as for each country, the sample size is much too small. Additionally, the measurement of well-being is very complicated and therefore the results should be interpreted with great care.

What is known is something about the income and wealth of the self-employed, which allows one to make some informed assumptions about the ability to save and cautious presumptions about the situation in old age.[3] In summary, it can be stated that to date, little is known about the economic situation of formerly self-employed people in old age.

4 Data

The German Microcensus data from the Statistical Office Germany were used for the analysis (Statistisches Bundesamt 2012). The Microcensus is a representative survey that covers 1 % of the whole population of Germany. It is a household panel with detailed information about household composition and the employment of household members with information "in a detailed subject related and regional breakdown on the population structure, the economic and social situation of the population, families, consensual unions and households, on employment, job search, education/training and continuing education/training, the housing situation and health" (Körner and Puch 2011: 26). The Microcensus is a repeated cross-sectional survey with a sample size of approximately 500,000 households and almost 800,000 people each year. The participation is a legal obligation, so the response rate is nearly 100 %. The data are recorded using the Computer Aided Personal Interviewing (CAPI) method.

For the analysis, only the scientific use files could be used, which produces slightly different results than the official statistics (Schimpl-Neimanns and Herwig 2011). However, as the analysis focused on the basic structure and not on individual information, the differences between the two data sets did not seriously bias the

[2] Those countries are France, Germany, Italy, Portugal, Spain, Sweden, United States, and United Kingdom; Nikolova and Graham (2014): 4 ff.

[3] For example, see Amorós and Bosma (2014): 62 ff.; for a brief overview of the literature, see, e.g., Åstebro and Chen (2014): 89 ff.; for, Germany see Bögenhold and Fachinger (2013), Fachinger and Frankus (2014), and Frankus and Fachinger (2012).

results. Other aspects are of greater concern, because they comprise self-reported data. The statistics rely on respondents for (subjective) evaluations [e.g., of their occupational status, which is defined as the main work activity, or their own net income; Statistisches Bundesamt (2006)]. This is a major problem as self-reported, classified net income and its distribution deviate considerably with respect to other surveys (Münnich 2000: 689) and major concerns exist about the credibility of the data. Therefore, the results of the empirical analysis should be interpreted with great caution. However, no satisfactory information concerning the incomes of self-employed people is available elsewhere.

All in all, although the Microcensus does not provide a reliable survey of the income situation of private households, at least Microcensus data offer some insight into the income situation of self-employed people. Therefore, the Microcensus was used as a more differentiated sample to analyse labour market activities and net income from self-employment in the absence of more specific information for Germany.

As the Microcensus is a cross-sectional survey, no information about development over time is given. However, questions were asked about the previous kind of employment and thus it is possible to identify people's previous state of employment. Therefore, at least it is feasible to identify retired people whose previous status was self-employed.

The identification of retired and formerly self-employed people was done using the following information [Statistisches Bundesamt/GESIS—Leibniz-Institut für Sozialwissenschaften (2013): 51, 69, 132, 211]:

- Current status: Economically inactive [ILO-Concept; Gauckler and Körner (2011): 184 ff.]
  - Selected reason for inactivity: retirement
- Last occupational status
  - Question: Were you last working as . . . ?
  - Selected Answer: solo self-employed or self-employed with employees
- Occupational status 12 months ago
  - Question: 12 months ago, were you working as . . . ?
  - Selected Answer: solo self-employed or self-employed with employees

5 Results

In 2010 in Germany, at least approximately 1.2 m retired people could be identified as previously self-employed. As expected, only few of the people belong to those groups that were working as solo self-employed with or without employees 1 year previously: 32,000. However, the overall number is large enough for more detailed analysis.

Figure 1 shows the age distribution of the retired and formerly self-employed people. As can be seen, only a minority of retired people were younger than

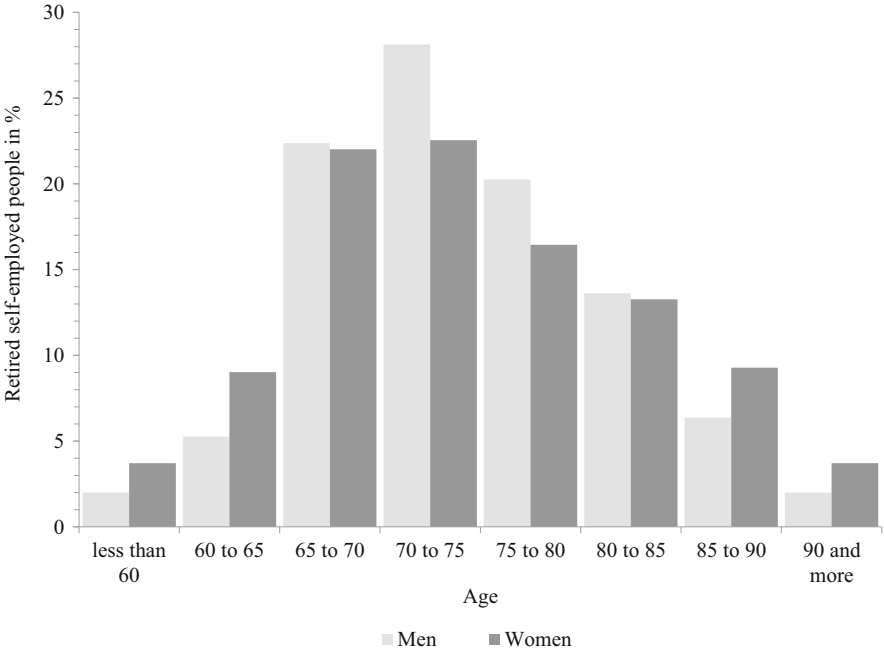

Fig. 1 Age distribution of retired formerly self-employed people (%). *Source*: Authors' calculations based on the scientific use file of the Microcensus 2010 of the Federal Statistical Office of Germany.

65 years: 7.3 % of men and 12.7 % of women. The result indicates that most self-employed people were not retiring and leaving the labour market early. This seems to be contrary to the situation of the employees, of whom 15.2 % (in 2010) were younger than 65 [Deutsche Rentenversicherung Bund (2011): 42, 43, 47].

The Microcensus gives information about individual and household income. Therefore, it is possible to look at the income of retired persons relative to their own resources and how incomes from other household members contributed to the overall situation.

First, we considered the various income sources from which individuals receive money. One would expect that the income of retired self-employed people, which are, for the most part, not covered by social security systems, would come from assets, life insurance, or other income sources but not from mandatory pension systems. As shown in Table 1, the main income source for most of the people is their own pensions. Therefore, most of the self-employed were, during their working careers, at least in some periods, covered by statutory pension schemes. However, what is conspicuous is the fact that 23.4 % of formerly self-employed women had no income of their own after they retired.

However, while interpreting the results in Table 1, one must take into account that some groups of self-employed people (e.g., artists and writers) are mandatorily

Table 1 Main income sources

Main income source				Percentage		
	Men	Women	Sum	Men	Women	Sum
Own pensions	755,000	332,000	1,087,000	82.2	67.1	76.9
No personal income (income from others)	42,000	116,000	158,000	4.6	23.4	11.2
Own assets, savings, interest, lettings etc.	74,000	24,000	98,000	8.1	4.8	6.9
Basic income in old age	11,000	5000	16,000	1.2	1.0	1.1
Social assistance	36,000	18,000	54,000	3.9	3.6	3.8
Sum	918,000	495,000	1,413,000	100.0	100.0	100.0

Source: Authors' calculations based on the scientific use file of the Microcensus 2010 of the Federal Statistical Office Germany

insured in the statutory pension system[4] and that self-employed craftsmen[5] can opt out of the statutory pension system only after 18 years of insurance. Subgroups of the liberal professions are mandatorily insured in the professional pension schemes of liberal professions.[6] Additionally, these figures could result from redistribution within the social security system, as, for example, self-employed women who have borne two children are eligible for a statutory pension, which in 2010 was 163.20 € per month (six earning or remuneration points times 27.20 €). Another way to earn points is for time spent providing nonprofessional, long-term care (e.g., for a parent).

Figure 2 shows the distribution of individual income in retirement. The median of the income distribution for men lies in the range of 1100–1300 €, and the median for women falls in the range of 700–900 €.

What especially distinguished the income distribution between men and women is the high percentage (25 %) of women with less than 500 € per month. This is also the reason for the lower value of the median. The distribution is skewed with a small portion of people with more than 2000 € per month: 11 % of women and 20 % of men. One reason that women have lower old age income than men is women's lesser ability to save from an individual point of view. As noted in Bögenhold and Fachinger (2013), 49 % of self-employed women have lower average income. The reasons for that are manifold, but one is that solo self-employed women work more than men in terms of sideline employment. This leads in general to a lower saving ability (i.e., dependence on other income sources of those households) and to lower savings during their working lives as indicated by the analysis performed by Fachinger and Frankus (2014).

[4] See, e. g., Kröger (2011): 383.

[5] Craftsmen with an entry in the register of artisans resp. in the register of self-employed craftsmen.

[6] Includes architects, auditors, tax advisors and related professions, civil engineers, dental surgeons, legal representatives and solicitors, pharmacists, physicians, physiotherapist, veterinary surgeons.

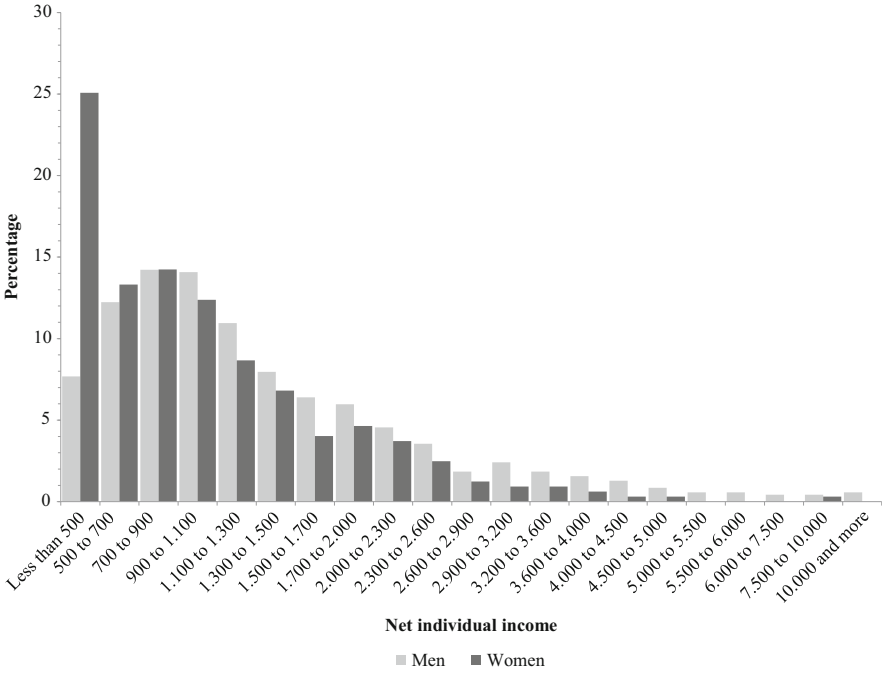

Fig. 2 Distribution of net individual income of formerly self-employed people (Euros per month, 2010). *Source*: Authors' calculations based on the scientific use file of the Microcensus 2010 of the Federal Statistical Office Germany

However, people live together and their income situation also depends on the income of other household members. Therefore, the household context has to be taken into account. To get a feel for the data, one has to know that approximately 900 € per month is the subsistence level in Germany for a one-person household (including the expenditures for housing) and that the average net household income (not weighted with an equivalence scale to adjust for the number of household members) was 2922 € in 2010 and 2988 € per month in 2011 (Statistisches Bundesamt 2013: 164).

Given this background, 77.7 % of households have a net household income below the overall average and 14.8 % of households have an income below the subsistence level. Another characteristic is the double peak. This could lead to the assumption that the observed distribution is a mixture of two. It is well known that the income distribution of female self-employed people is much more positively skewed with a lower median and mode value than that of men (Fachinger and Frankus 2014). However, as shown in Fig. 2, in addition to the high percentage in the lowest income class, the form of the distribution of the individual income of men and women is more or less the same. The reason for the double peak could be the income from the other household members. Men have higher income on average than women and could therefore contribute more to the household income.

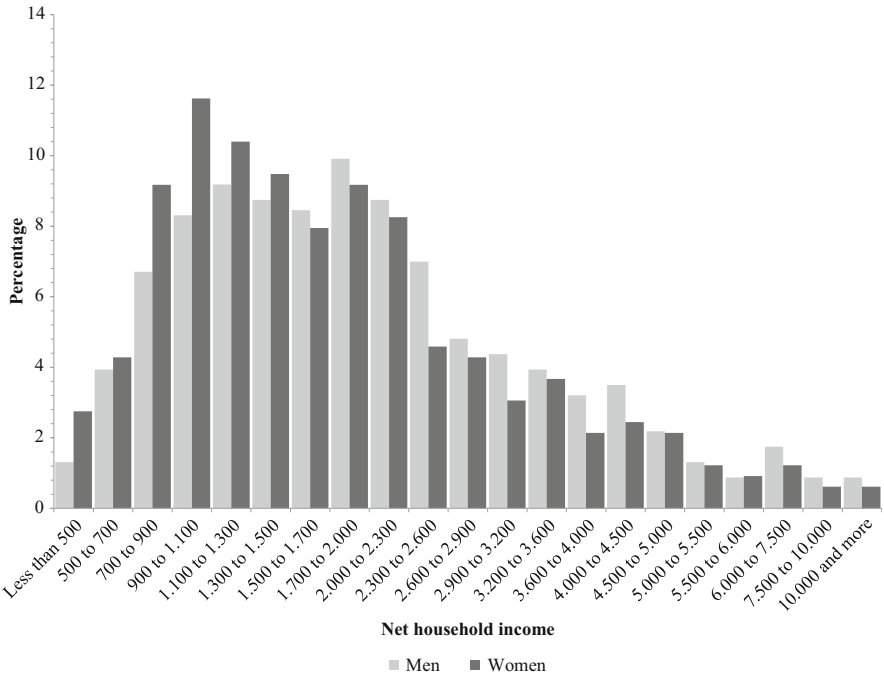

Fig. 3 Distribution of net household income of formerly self-employed women and men. *Source*: Authors' calculations on the basis of the scientific use file of the Microcensus 2010

Figure 3 provides evidence of the distribution for households differentiated by gender.

Even division by gender does not produce a drastic change in the income distribution of households, although the income of households with a woman as head is lower on average, with a median household income between 1500 and 1700 € per month. The median household income for men is in the range of 1700–2000 € per month. However, the double peak does not disappear. What becomes clear is that a relatively large portion of formerly self-employed people in retirement, especially women, are dependent on the income of other household members to obtain incomes above the subsistence level.

However, the data set does not comprise enough information to test an explanatory model on the basis of the lifecycle theory. The data only allow one to look at the situation at one point in time, so it is not possible to draw far-reaching conclusions, as the situation is the result of a mixture of period, cohort and age effects. For example, people may become self-employed at the end of their working careers out of necessity (because they were dismissed and could not find a new job), they may have enjoyed a successful career or they may have experienced a mixed career, switching between different types of employment status. Heterogeneity of

working life could not be identified with the data because it is a cross-sectional survey.

Nevertheless, some evidence can be found that formerly self-employed people are not well off after retiring and may not enjoy golden sunset years during retirement.

6 Conclusions

Despite the fact that most self-employed people are not covered by old-age security systems that are designed as a three-pillar system composed of statutory, occupational and private pension schemes for employees, the main income source of the majority of formerly self-employed people are pensions from statutory pension systems. This can be seen as a reflection of the heterogeneity of working careers and the unsteadiness of employment with frequent changes between employment statuses such that people belong to the mandatory statutory pension system during some periods over time.

Therefore, the assumption that self-employed people must rely heavily on private old age insurance to maintain their living standard after retirement does not seem to apply to the majority of formerly self-employed people.

However, the analysis provides evidence that the income situation of households of formerly self-employed people in retirement cannot be characterized as satisfactory. A large portion of these people have net household incomes below the overall average, and nearly 15 % of the households have an income even below the subsistence level.

Nevertheless, there is a large shortage of information and knowledge about formerly self-employed people regarding the adequacy and sustainability of old age income during retirement. For example, it is not possible to explain the distribution, as information about work history is insufficient. The same holds true for the development of income during retirement. Therefore, no information is available about whether formerly self-employed people are able to maintain their living standard after retirement. Further work is needed to address the income situation of formerly self-employed people during retirement.

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The Political Entrepreneur: Deus ex Machina of Public Choice Theory?

Reinhard Neck

Abstract

In this paper we give an introduction to the concept of the political entrepreneur and a selective survey of some theoretical and empirical work using it. We argue that the figure of the entrepreneur is as important in politics as in economics and business. In particular, it helps to clarify some difficulties in public choice theory in a similar way as the introduction of the economic entrepreneur into microeconomic theory facilitates a dynamic analysis of the market process. In particular, the idea of the political entrepreneur helps to explain the paradox of voting and the formation of large interest groups. Several examples of case studies on political entrepreneurship are briefly discussed, some of them showing economically successful political-entrepreneurial activities, some others exhibiting pure rent seeking. An evaluation of the welfare effects of political entrepreneurship is therefore still an open question, hence more theoretical and empirical research on political entrepreneurship is strongly required.

Keywords

Entrepreneurship • Political entrepreneur • Public choice • Dynamic analysis

1 Introduction

A lot of research has gone into the academic field of entrepreneurship, both from economists and from other social scientists. Also the practical importance of start-ups and innovative business plans in the globalized economy has become common knowledge. On the other hand, entrepreneurship and innovation is not frequently associated with the area of politics. It is not well known that there exists also a

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theory of the political entrepreneur, which uses the concept of entrepreneurship to deal with the issue of leadership in the political system. In this paper, we want to present this concept and some theoretical aspects relating to it and to provide a selective survey of some relevant empirical case studies. We argue that the concept of the political entrepreneur contributes to providing solutions to some difficulties in public choice theory in a similar way as the introduction of the economic entrepreneur into microeconomic theory facilitates a dynamic analysis of the market process. In particular, the idea of the political entrepreneur helps to explain the paradox of voting and the formation of large interest groups. Although the theoretical literature on this concept has not yet reached the same mathematical sophistication as microeconomic theory, there are research desiderata both with respect to the theory and the empirics of political entrepreneurship.

2 The Entrepreneur in Economics: Dramatis Persona or Deus ex Machina?

The position of the entrepreneur, while obviously of utmost importance in a capitalist market economy, is not sufficiently recognized in most mainstream economic theories. Consider in particular the most sophisticated version of neoclassical economic theory, the prevailing paradigm of theoretical economics. In the Arrow-Debreu version of Walrasian economics (cf. Arrow and Hahn 1971), we do not find any reference to entrepreneurial activities. The essence of this theory is static in nature, analyzing the problems of the existence of a general economic equilibrium in a perfectly competitive market economy. When it comes to investigating dynamic questions such as the stability of such an equilibrium, the avatar-like auctioneer is invoked as performing the task of leading the economy into an equilibrium position. Although this was recognized as unsatisfactory long ago (Arrow 1959), so far no systematic attempt has been undertaken to develop a theory of adjustment of an economy from a position of disequilibrium to an equilibrium that is as detailed and mathematically sophisticated as is the Arrow-Debreu Walrasian general equilibrium theory.

Proponents of one of the main competitors to general equilibrium theory, (Post-) Keynesianism, often claim to provide a truly dynamic theory emphasizing processes evolving in "historical time". Unfortunately, their analysis both lacks in terms of precision and suffers from not making explicit the institutional mechanisms triggering the adjustment between (dis-)equilibrium states of the economies under consideration. Postulating a *homo non-economicus* with "animal spirits" instead of rational economic man with rational expectations may be empirically superior in many situations, but requires some organizing principle to arrive at testable propositions regarding results of economic processes.

One may wonder whether Karl Marx allowed for more explicit dynamics within his economic theory because it made rather far-reaching forecasts of the fate of Capitalism resulting in its removal by Socialism after a series of ever deeper crises. However, for Marx the entrepreneur is the slave of the forces of capitalism, driven

by (instead of driving) the forces of capitalist competition. This contrasts sharply with his conception of the driving force in the movement towards Socialism, the working class, which he conceptually equips with unique capabilities of transcending the economic base of Capitalism. Apart from the empirical falsification of Marxist economic theory by the inglorious death of real-world Socialism in 1989 and the following years, the role of entrepreneurs seems to be too passive in this theory, especially in the light of entrepreneurial abilities acquired by some former members of the Communist nomenclature during and after the transition in Russia and other countries of central and eastern Europe.

Among the heterodox currents in economics, only Austrian economics and to some extent neo-institutionalist economics recognize the entrepreneur as a key player in a dynamic market process. Ludwig von Mises (1963) emphasized that all activities in the market are essentially entrepreneurial, postulating an unresolvable link between entrepreneurship and the Capitalist market economy. Friedrich A. von Hayek (1945) added to this the idea that local information available only to certain agents in the economy provided the opportunities for profit required for the working of the entire economic system. A more detailed theory of entrepreneurship was developed by Israel M. Kirzner (1973), in which the creative discovery of opportunities takes place in permanent but continually changing states of disequilibrium, leading nevertheless to an acceptable or even efficient overall outcome. Several Austrian economists have followed this research agenda (see the journals Review of Austrian Economics and Quarterly Journal of Austrian Economics, the book series Advances in Austrian Economics and Neck 2014 for examples), though unfortunately more of them in the Anglo-Saxon countries than in Austria.

Allowing for a slight digression, we should mention game theory, which resulted from an Austro-Hungarian collaboration in Princeton by John von Neumann and Oskar Morgenstern (1944). This theory exhibits the same (or an even higher) degree of mathematical sophistication as the theory of general competitive equilibrium, but does not suffer from some of the drawbacks of the latter: it deals explicitly with strategic interactions among the players, allowing an active role for economic agents; there are several solution concepts instead of the one-size-fits-all equilibrium concept; and especially in its dynamic extensions (the theories of repeated, dynamic, and evolutionary games) models of processes occurring over time and resulting from rational individual behavior are developed, which may or may not result in acceptable results at the social level. In our view, game theory is the most promising economic theory to deal with entrepreneurial activities, and results from industrial organization theory show the direction in which research in entrepreneurship will go in the near future (Tirole 1988).

Joseph A. Schumpeter was one of the few mavericks who had built his theory of economic development on entrepreneurial activities, as is now well known, but his theory is only gradually being accepted within the mainstream. In his classical book (Schumpeter 1983), he stressed the role of the entrepreneur as an innovator initiating the process of creative destruction, which is the key to economic progress (but may also be instrumental for the crises and the possible collapse of Capitalism). But Schumpeter is also the father (or grandfather?) of public choice theory, as can

be seen from Part IV of Schumpeter (1950). Public choice theory, or the economic theory of politics, is essentially the application of economic methods and concepts to the study of the political system. It is thus a branch of what has been called "economic imperialism", the extension of the economist's toolkit to areas other than economics proper. In the following section, we will ask whether there is a similar neglect of entrepreneurship in this theory of politics as exists in its counterpart in economic theory. This shall lead us towards an assessment of the role of the political entrepreneur.

3 Public Choice Theories and Models

Public choice theory is not only the use of economics in explaining political phenomena but also a comprehensive collection of approaches and models encompassing interactions between the political and the economic subsystem of the social system. An extensive review of public choice theory is given in Mueller (2003); here we just show the simple scheme of a politico-economic model initiated by Frey and Schneider (1978) (Fig. 1). It shows how individual agents of the politico-economic system, voters (and other agents) and politicians, follow their individual interests (utility or profit maximization by voters; vote (share) or utility maximization by politicians) to frame and execute their decisions (voting, lobbying for voters and interest groups; determining the instruments of economic (and other) policies for politicians), thereby interacting and influencing each other. In this way, the political system is endogenized to a certain extent in economics. Such politico-economic models were estimated by means of econometric (or politometric) methods for various countries and used to make forecasts, which were superior to those based on economic models only. Such a model is even successful in predicting the outcome of the vote for the U.S. President on a regular basis (Fair 2012).

Public Choice was first developed by Schumpeter in his book *Capitalism, Socialism and Democracy* as a theory of democracy. His aim was to provide an alternative to what he called the classical theory of democracy, which assumed

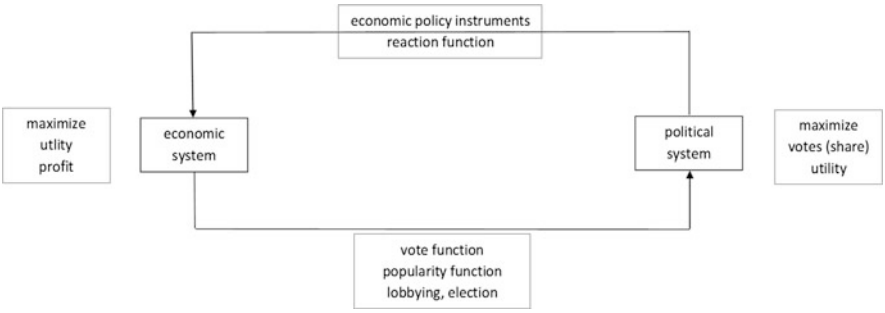

Fig. 1 A politico-economic model

(or prescribed) that politicians pursue the "common good" or the will of the people. In contrast, he started from the observation that politicians have their own interests, which may markedly differ from those of "the people", whatever the latter may mean. We may add that social choice theory, starting from Arrow's (1951) impossibility theorem, casts considerable doubt upon the idea of the existence of consistent and non-contradictory group preferences allowing for the definition of something like a "common good" or social welfare. Diverse interests and diverse, and limited, information of the agents of the political process have to be taken into account, if a "realistic" theory of a democracy is to be developed.

It is worthwhile to quote from Schumpeter's (1950) analysis of the democratic process. According to him, "[. . .] collectives act almost exclusively by accepting leadership" (p. 270), hence there is no such thing as a mythical collective agent or a benevolent dictator acting in the interest of the society as a whole. Instead, the political process can be envisaged best as working in a similar way as a market economy with (perfect, but more often imperfect) competition among demanders and suppliers of public goods and services. According to Schumpeter: Competition for leadership is similar to competition in economics—it is never completely lacking (monopolies are rare) but hardly ever perfect (p. 271). In a democracy, we have competition for a free vote. The outcome of this kind of competition is open, and only rarely, if ever, will we find an outcome evaluated by (nearly) all participants in the political process as "optimal". Schumpeter also uses an analogy comparing politicians to businessmen and says they are "dealing in votes" (pp. 285 ff.). Hence it can be said that Schumpeter is also the father of elements of a theory of the political or institutional entrepreneur.

This theory has been further developed by a handful of other authors, as will be discussed in the next section. Here political entrepreneurs enter as leaders of political parties and of interest groups, motivated by such incentives as the desire for higher income, power and reputation as political leaders in a dynamic context. They consider not only their own interest but also the interests of the members of their potential electorate or their interest groups in order to obtain the leadership position necessary to reach their own objectives as well as those of the group members.

On the other hand, where a similar neglect of entrepreneurial influences as in economics proper dominated public choice theory, the economic theory of the political system ended up in aporias. For instance, the theory of voting and its main result, the median voter theory, does not sufficiently differentiate among political programs and is not even able to explain the facts that democracies are typically characterized by choices between political parties with clearly diversified programs and (the paradox of voting) by a considerable turnout at the polls. Superfluous observation shows, contrary to the prediction of high vote abstention, that charismatic personalities of candidates for political offices may have considerable success in motivating voters to cast their ballot—for or even against them. Personality factors regularly turn out high in opinion polls even for mean candidates, and no experienced opinion research center will ever neglect them in predicting election results. This points toward the importance of political

entrepreneurs in the sense of politicians proposing new ideas which are attractive for their customers, their voters.

Another example occurs in the public-choice theory of interest groups, which was developed by Mancur Olson (1965). This theory arrives at the conclusion that incentives to organize large groups are very small due to the voluntary collective action problem, hence large, encompassing interest groups should be very rare, if not even non-existent. However, here again empirical observations contradict this theoretical finding and show that such groups actually exist and may have considerable influence. Also here the question arises as to the drivers of the political process and their motivations. A very prominent example was the Polish trade union "Solidarność", which was organized even under conditions of martial law and against heavy resistance of the ruling party and the groups in power. It even succeeded in turning around an entire country's political and economic system. Other revolutionary groups originating from grassroots movements and conquering power easily come to mind. In most of these cases charismatic leaders with convincing political programs are instrumental in creating these movements and making them successful.

So something is missing in public-choice attempts of explaining political outcomes purely on the basis of rational behavior of voters and politicians and neglecting the personal factor of political leaders who, for better or worse, impress voters not merely by the program they offer but also by some combination of innovative ideas and indicators of leadership with respect to certain political issues. Doing public choice theory without taking account of political entrepreneurship is thus like "playing Hamlet without mentioning the Prince" (Baumol 1968).

4 Political Leadership: The Political (Public) Entrepreneur

Having recognized that something is missing from most of public choice theory, we may go back to Schumpeter to look at the idea of the political (or public) entrepreneur. We may envisage the political entrepreneur as someone who is organizing political parties or interest groups or someone who provides ideas and proposals to these organizations. This may be a charismatic leader appealing to the masses or a strategist designing medium or long run policy platforms for the party or interest group. Political scientists have occasionally dealt with the role of such individuals in politics, as have historians for past periods. An important study was Robert A. Dahl's (1965) analysis of the power structure in a medium-sized town, New Haven, CT, which showed the influence of politically elected people in developing the urban infrastructure of that town, at times even beyond business interests. Although his study did not stay uncontended, especially with respect to the results on the permeability of the social strata and classes, it can be regarded as one of the first systematic examinations of the potential and actual role of political entrepreneurs on the local level.

The first appearance of the political entrepreneur in the public choice literature came in Richard E. Wagner's (1966) review of Olson's book on interest groups.

Here Wagner notes that Olson fails to explain the fact that large groups such as trade unions or professional organizations supply not only private goods (as selective incentives for membership) but also collective ones such as lobbying, which seemingly benefits not only their members but also those who do not contribute to the organization by refraining from membership. This free-rider problem can at least partly be overcome by introducing the figure of the political entrepreneur, which provides the missing link between the public choice theory of groups and political science theories of democratic decision making. One of the functions of the political entrepreneur is risk taking and the collection and procession of information; see Guttman (1982).

A more detailed analysis along these lines was undertaken by Terry M. Moe (1980). He regarded leaders of diverse political movements like parties, interest groups, NGOs, etc., as political entrepreneurs. In line with the public choice approach, their motivation is assumed to consist in utility maximization. This refers primarily to direct utility provided by income, power, reputation, even social responsibility and other forms of altruism, and so on. But there is also indirect utility coming from following the interests of the group, which is done, however, not (only) for altruistic reasons but (also) in order to obtain and hold the leader position within the group. There may even be an element of very indirect utility coming from pursuing the interest of the "society", at least in so far as it is necessary for establishing the condition of (re)election in a competitive democracy.

More recent studies to a large extent were based on the Austrian economists' (especially Israel Kirzner's) theory of entrepreneurship as applied to the political system. For instance, McCaffrey and Salerno (2011) link these theories to the public choice analysis of the political system and show that political entrepreneurs may redirect production from that occurring in an unregulated market. Abel (2003) stresses the dynamic aspect of political entrepreneurship and distinguishes between the characteristics of the market process and those of the political process. In a similar vein, López (2002) applies Austrian capital theory to the interest group model of legislator behavior. Other contributions to the theory of political entrepreneurs are more closely related to mainstream political science. For example, Schneider and Teske (1992; see also Schneider et al. 1995) formulated a theory of political entrepreneurs on the local political level and illustrated it with empirical evidence from the USA. The impact of political entrepreneurship on changes of the rules of the game, together with an application to the U.S. congressional committee system, is presented in Martin and Thomas (2013).

5 Some Empirical Examples

In addition to the theoretical work on political entrepreneurship, there is also some empirical evidence about the effects of this phenomenon from different countries. We have already mentioned the important contribution by Schneider et al. (1995) about the local government level in the USA. Another study, which emphasizes the "transfer demanding entrepreneur" as a kind of mediator between different groups

(in this case, in an historical case study from colonial times), is Campbell (1999). A prominent example of a political entrepreneur in the USA was Alfred E. Kahn, the father of airline deregulation, who at the same time was also an accomplished economist (Weiser 2008). See, however, Kahn's (2008) qualifications to his characterization as a political entrepreneur and his emphasis on the gradual character of the process of deregulation, which should be taken into account when formulating a more elaborate dynamic theory of political entrepreneurship.

Such a theory could also profit from the insights provided by Meydani (2008) for a specific institutional change which took place in Israel. In 1985, the "State Economy Arrangement Law" (SEAL) was adopted, which allowed for circumventing applications to the Israeli parliament in certain areas of legislation. Meydani interprets the SEAL legislation as resulting from actions of political entrepreneurs operating to maximize their own electoral capital under conditions of ineffective rules, which were eventually altered by them so as to improve the process of budgetary decision making.

Most examples of investigations of political entrepreneurship can be found in the literature about the People's Republic of China in the so-called Reform Era (after the defeat of the Maoists by Deng Xiaoping). These include, among others, studies about the relations between political and economic entrepreneurs and the participation of business people in politics (Choi and Zhou 2001; Li et al. 2006), the advantages in terms of private wealth of political participation (Walder and Zhao 2006) and, vice versa, the intrusion of successful business people into the power elite of the Communist Party (Chen et al. 2008), which resulted in a strange love story between economic entrepreneurs and the Communist Party. This created a specific economic system sometimes called Guanxi Capitalism, which means the establishment of long-term reciprocal personal relationships between business and politics (McNally 2011).

The Chinese example is instructive as it shows that political entrepreneurs need not be business people or even economic entrepreneurs but have to interact in a delicate way if they want to be successful. In China, there is some kind of a limited alliance between the two groups, but mutual influences and conflicts also happen. Several studies have shown that Chinese economic entrepreneurs are in general not political entrepreneurs and therefore play only a limited role as agents of change, especially in the direction towards a more democratic political system. The resulting "crony communism" can be interpreted as an institutional innovation that is an unintended result of individually rational behavior (Dickson 2007, 2008; Chen and Dickson 2008, 2010; Xiaojun 2012).

6 Towards a Normative Assessment

It is probably premature to try to evaluate the normative consequences of political entrepreneurship. The question is whether the political entrepreneur increases welfare by providing public goods in a way similar to the economic entrepreneur (as the agent of the "invisible hand") or decreases welfare by engaging in distorting

rent-seeking activities? Historical examples abound, and from theory and the few examples analyzed in the scientific literature we can only conclude: it depends. For instance, there are theoretical examples showing the possibility of international cooperation brought about gradually by political leaders following their own interests (Arce 2001—an analysis using familiar results from evolutionary game theory), but other ones demonstrating that under certain institutional circumstances political entrepreneurship may degenerate into dis-entrepreneurship (Eusepi and Wilson 2008). A recent collection of empirical case studies (Henrekson and Sanandaji 2012) also contains both possibilities. A cautionary conjecture derived from the literature so far can be that political entrepreneurs are probably less welfare enhancing than economic entrepreneurs. However, to arrive at a reliable and comprehensive normative assessment it is necessary to do much more theoretical research; a full mathematical model of the political system with political entrepreneurs which allows for analyses under different assumed institutional frameworks would be highly desirable. Moreover, many more theory-laden empirical case studies have to be undertaken to show under which conditions political leadership can act in the interest of "the people" (or rather at least of the majority) like a "visible hand" supporting the invisible hand of the market system.

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Part IV

Entrepreneurial Frameworks, Ethics and Culture

Intentions and Perceptions of the Entrepreneurial Career Among Croatian Students: Initial Results of a Longitudinal Empirical Study

Josef Langer, Nikša Alfirević, Jurica Pavičić, and Mira Krneta

Abstract

In this paper, authors analyze the entrepreneurial intentions of the student population at the University of Split, Croatia and relate them to students' general perceptions of entrepreneurship and its social role/desirability. As the longitudinal data have been collected during the recession in the Croatian economy, this study provides initial empirical results, related to general trends of economic and social treatment of entrepreneurship in South East Europe, in the specific context of a prolonged economic downturn. The empirical findings demonstrate that the perceived desirability of entrepreneurship, as related to students' primary reference groups (family, friends, peers), influences their entrepreneurial intent. The other factors, which proved as empirically significant in determining the students' entrepreneurial intent, include the perception of self-efficacy, as well as relevant knowledge and skills. The desirability of an entrepreneurial career in the wider society is not empirically relevant for the surveyed students. The obtained empirical results are discussed from the aspect of improving

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entrepreneurial education, as well as public policies, related to youth unemployment and the development of entrepreneurial culture among the population of young people in South East Europe.

Keywords
Entrepreneurial intentions • Youth • Student entrepreneurship • Croatia

1 Previous Studies of Students' Entrepreneurial Intentions

For more than two decades, both academic studies and economic policies have linked entrepreneurial activity to economic growth (Audretsch and Keilbach 2004; van Praag and Versloot 2007; Liñán et al. 2011). Entrepreneurship is also associated with the development of technical innovation and its commercial application, as well as with the growth of employment and competitiveness (van Praag and Versloot 2007; Nyström 2008; Thurik and Wennekeres 2004). In this context, interest in the support of entrepreneurship is evident, with the forms of support ranging from development of entrepreneurial infrastructure, to subsidized financing and entrepreneurial education.

As the global economic crisis emerged in 2008, entrepreneurial activity, measured by the intensity of new business entity formation, decreased significantly. For instance, in the UK, in 2009, there was a decrease of 27 % in the registration of new public limited companies, compared to 2007 (Klapper and Love 2010). This trend might also affect the readiness of students to start their own businesses (Arrighetti et al. 2013), which has not been analyzed by recent studies of students' entrepreneurial intentions (Turker and Selcuk 2009; Ahmed et al. 2010; Engle et al. 2010; Franco et al. 2010).

Nevertheless, previous research has established many generalizable factors, leading to the entrepreneurial intent. Carr and Sequeira (2007) have demonstrated that the previous exposure to entrepreneurship, especially in the context of being raised in an entrepreneurial family, significantly influences attitudes toward entrepreneurship. However, we are not aware of any previous studies, which try to generalize this kind of experience to being familiar with a successful entrepreneur (even if he/she is not an immediate family member).

Results based on survey data from 324 Romanian students (Shook and Bratianu 2010), using the Theory of Planned Behavior (TBP), show that self-efficacy and the social desirability related to creating a new business venture were positively related to entrepreneurial intent. In addition, practical exposure to entrepreneurship, by personal entrepreneurial experience, or through the family's entrepreneurship background, could have an impact on entrepreneurial intentions among students (Basu and Virick 2008; Ahmed et al. 2010). The environment-based factors have been recognized as a relevant aspect of student's entrepreneurial intent determinants. Based on the students' perception of environment conditions in

Austria, Schwarz et al. (2009) find significant differences in entrepreneurial intent regarding gender, age and field of study.

On an international level, the empirical findings indicate that students from developing countries have a stronger entrepreneurial attitude than those from developed countries. Moreover, the respondents from developing countries also score higher on the theory's antecedents of entrepreneurial intentions—attitudes, subjective norms, and perceived behavioral control—than respondents from developed countries. The findings support the Theory of Planned Behavior in developing and developed countries (Iakoveva et al. 2011).

According to the longitudinal results of the Global Entrepreneurship Monitor, Croatia lags behind the European average in entrepreneurial activity, regardless of the indicators being used. There is a growth of necessity-based entrepreneurship, accompanied by a slow transition of new into established entrepreneurs (Singer et al. 2012). This can be illustrated by the World Bank (2014) data: in the 2009–2012 period, the density of new business (i.e. the number of newly registered businesses per 1000 adults) in Croatia was estimated as ranging from 2.6 to 2.8, while the same indicator for Slovenia was estimated to be from 3.8 to 4.4, and for UK from 8.1 to 11. In addition, youth unemployment in Croatia is extremely high, with the individuals, younger than 35, constituting almost half of the unemployed population. The policies, supposed to alleviate the unemployment problem, do not seem to produce actual results, if they are not associated with the entrepreneurial orientation of young people with academic degrees.

The described situation serves as a framework for an empirical research, with several objectives. The fundamental one is to determine the interest of students for an entrepreneurial career, i.e. their intention to start a new business after their studies, as well as their expectations of future success. In addition, this study analyzes whether the economic crisis (in the 2011–2014 period) has influenced the students' perceptions of the entrepreneurial career desirability.

2 The Entrepreneurial Intent Model and Hypotheses

According to secondary sources, two relevant models of students' entrepreneurial intent could be identified. Both start from the assumption that entrepreneurial activity is the result of intentional behavior. Attitudes are supposed to be very good predictors of intentions, along with subjective norms, perceived self efficacy and feasibility of the planned entrepreneurial venture, which constitutes the well-known model of Ajzen's Theory of Planned Behavior—TPB (Krueger et al. 2000). There have been previous validations and applications of the model in the empirical research of youth entrepreneurial intentions (Carr and Sequeira 2007; Engle et al. 2010; Shook and Bratianu 2010). Other researchers (Schwarz et al. 2009) consider the perceived environmental conditions to be the fundamental driver of the entrepreneurial intentions (along with individual attitudes), which leads to the need

to examine the students' perception of the role of entrepreneurship in the society. On the other hand, the Shapero-Krueger model relies on propensity for behavior, along with the perceived desirability and feasibility as fundamental direct predictors of entrepreneurial intentions. The latter two are considered to be the indicators of 'disruption' of the status quo, as well as its attractiveness for the shaping of future behavior (Krueger et al. 2000).

The following factors (items) were selected from the previous research as predictors of the students'/youth entrepreneurial intent:

- perception of entrepreneurship and its role/desirability in the society/social environment (following the Shapero-Krueger model and Schwarz et al. 2009),
- personal attitudes toward entrepreneurship and indicators of self-efficacy (following the Ajzen's TPB)
- perception of own knowledge and skills, as fundamental factors of feasibility for entrepreneurial behavior (following the Shapero-Krueger model)

The first item indicates the general *desirability of an entrepreneurial career,* while the latter two are related to its *perceived feasibility*. Based on such a selection of potential factors, influencing the intentions for youth entrepreneurship, we have developed a comprehensive model, presented by Fig. 1.

The initial research hypotheses, related to the entrepreneurial intent of students in Croatia, arising from the model, can be formulated as follows:

H1. Perceived desirability of entrepreneurship, as related to students' primary reference groups, influences the students' entrepreneurial intent.

H2. Perceived desirability of entrepreneurship, as related to wider society, influences the students' entrepreneurial intent.

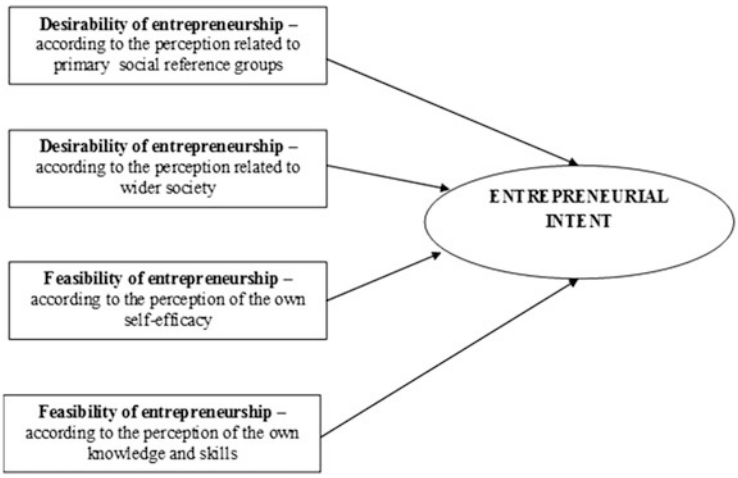

Fig. 1 Research model

H3. Perceived feasibility of entrepreneurship, as related to students' perception of their self-efficacy, influences their entrepreneurial intent.

H4. Perceived feasibility of entrepreneurship, as related to students' perception of their own relevant knowledge and skills, influences their entrepreneurial intent.

3 Methodology of Empirical Research

The population of this study consists of the students of the final years of undergraduate and graduate studies at the University of Split, which is the second largest Croatian university. The data collection has been longitudinal, with two waves being conducted in May 2011 and May 2014, respectively. In the 2011 cohort, the sample consisted of 473 students, while in 2014, the sample comprised 308 students. The questionnaire was constructed according to the research model and contained items described in the previous section. In addition, we collected students' demographic data, data about their previous education (including education about/for entrepreneurship), as well as data related to their previous work and entrepreneurial experience (following Carr and Sequeira 2007).

The questionnaire was placed on-line (i.e. on the public web pages of the Faculty of Economics at the University of Split). Based on our access to the database of Faculty of Economics, we were able to construct a random sample of all its students, currently enrolled into the last year of their studies, by sending e-mail invitations for data collections. As we were not able to secure similar access to databases of other schools at the University of Split, the invitations for students were passed to a sample of professors, who were asked to provide assistance in data collection.

Unfortunately, this was not entirely successful, since we were able to collect 104 questionnaires from other schools at the university in 2011 (21.99 % of the entire sample), with the majority of respondents enrolled at the Faculty of Electrical and Mechanical Engineering and Shipbuilding, and the Faculty of Social Science and Humanities. In 2014, we received a small number of questionnaires from the Department for professional studies at the University of Split. This is the reason why we choose to report the obtained results as initial and indicative, with the future research planned both on future cohorts of the entire University of Split, as well as other universities in Croatia and the University of Klagenfurt, Austria. Data analysis was performed using Microsoft Excel and SPSS Statistics 17.

4 Empirical Results

As already described, the empirical study is based on two waves of data—both collected during the prolonged economic crisis in Croatia, with 2014 marking the sixth year of recession, which has cost the country more than 12 % of its pre-crisis

GDP.[1] This fact emphasizes both the economic and social significance of youth entrepreneurship research, which could prove to be one of the major forces for solving the challenge of youth unemployment and a range of associated issues, such as ill health and reduced psychological well-being (McKee-Ryan et al. 2005), as well as exclusion, delinquency and other social problems (Kieselbach 2003; Blossfeld et al. 2005). Even in social science, it has been suggested that the self-perception as a young person 'at risk' could/should be replaced by a more 'constructive' image of the 'entrepreneurial self' (Kelly 2006). We believe that the outlined importance of this issue—both in economic and social terms—deserves to be analyzed through a comprehensive and inter-disciplinary approach, which has served as the motivation for this research project.

4.1 Demographic Data for 2011 and 2014 Student Cohorts

In the 2011 cohort, 41.9 % responding students were male and 58.1 % female, with an average number of 4.72 members in their household. The average household (monthly) income (expressed in EUR, according to the average annual 2011 exchange rate) was lower than 900 € for 33.2 % of respondents. Approximately one quarter of respondents' households respectively were earning between 900 and 1300 € (25.4 %), and from 1300 up to 2000 € (23.7 %) per month. A higher level of income (in the 2000–2600 € bracket) was reported by 17.8 % of responding students. Due to the fact that the Bologna reform of the Croatian higher education has been in place since 2005, the majority of surveyed students were attending the Bologna-type Bachelor (46.3 %), or Master program (33 %), with a significant minority of students, enrolled in 'professional' studies (15 %), similar to the Austrian/German *Fachhochschule* program (delivered both by the Faculty of Economics and the Department of professional studies at the University of Split).

In 2014, the sample comprised 66.6 % of female and 33.4 % of male students, with the mean number of household members being equal to 4.60. Related to findings of (monthly) household income in 2014, once again, one third of the surveyed students lived in households earning less than 900 EUR. However, the amount of households in the 900–1300 € bracket had increased to 29.5 %, with a comparable number of those earning from 1300 to 2000 € (23.5 %). On the other hand, only 5.3 % of respondents reported a monthly household income in the 2000–2600 € bracket and a further 8.6 % above 2600 EUR per month, which might indicate that the social and economic stratification of our sample is becoming more significant in the 3-year period. In this cohort, 58.8 % of surveyed students were enrolled in the Bachelor studies, 16.6 % in the Master program and another 16.6 % in a professional studies program.

[1] Source: The World Bank: Croatia Overview (http://www.worldbank.org/en/country/croatia/overview).

4.2 Previous Work- and Entrepreneurial-Related Experience

The following set of questions was related to the previous experience outside of the educational environment. It is interesting to note that a range of surveys shows a wealth of results for different countries/regions. For instance, Kvedaraite (2014) reports that 36.6 % of Lithuanian undergraduate students had some form of work experience, while 28.1 % were exposed to entrepreneurship (or even owned their own business). In our 2011 cohort, a comparable amount of 35.7 % had been, in some way, involved in the labor market (with an average of 1.24 years of work experience), while only 6.8 % stated that they had a business of their own. This can be attributed to some students, who have, after an average of 3.5 years of entrepreneurial experience, decided to finish their degree, or even to commence higher education. Nevertheless, we wanted to estimate previous ('practical') exposure to entrepreneurship by asking about personal knowledge of an entrepreneur (being positive in 82.7 % cases), knowledgeability of his/her business (reported as excellent in 23.1 % cases, very good for 41.2 %, good for 13.6 %, superficial for 20.5 % and nonexistent for the remaining 1.6 % of respondents). In 2011, our survey showed that 24.4 % reported that this person is perceived as very successful by 24.4 %, as successful by 44.2 % and as somewhat successful by 28.3 % of responding students.

The other significant form of exposure to entrepreneurship could be labeled as 'theoretical'. It is related to the entrepreneurial education and training, which has already been confirmed as a factor influencing the students' entrepreneurial intent (De Jorge-Moreno et al. 2012). Therefore, we also surveyed exposure to formal entrepreneurial subjects within the university curriculum. In 2011, 65.1 % of respondents were enrolled at least into one formal course, dealing with the field of entrepreneurship.

Three years after the initial results have been obtained, the involvement of surveyed students into work has increased to the level of 40.6 %, which could be attributed to the continued economic crisis in Croatia. It is very difficult to reach such a conclusion without further research, although the increased length of students' work experience (3.04 years) also supports this idea. In addition, 7.5 % of respondents had previous entrepreneurial experience, with an average length of 3.13 years. 'Practical' exposure to entrepreneurship has also somewhat changed: 76.3 % of students are acquainted with an entrepreneur and his/her job.

However, respondents report lower levels of knowledgeability of this entrepreneur's operations than in 2011: 21.9 % as excellent, 29.6 % as very good, 16.3 % as good and 29.6 % as superficial. The perception of this person's success, as a potential 'reference point' for students' attitudes toward entrepreneurship, has not changed much: he or she is perceived as very successful by 24.7 %, and as successful by 43.7 % of respondents. Another 28.1 % of students assess this person's success as average. In this cohort, the 'theoretical' exposure to entrepreneurship was somewhat higher, with 68.5 % of respondents, enrolled in one (or more) course(s), related to entrepreneurship in the academic context.

4.3 Entrepreneurial Intent and New Venture Desirability/ Feasibility

As defined by the Shapero-Krueger model and reported for the cases of Catalonia and Puerto Rico by Veciana et al. (2005), in addition to the entrepreneurial intent and its drivers, we also examined the perceived desirability and feasibility of forming a new venture among Croatian students.

We asked all respondents about their intent to start a new business venture by providing a Likert-type scale, measuring the likelihood of their venturing into entrepreneurship after finishing the studies. In the 2011 cohort, 40.2 % of students expressed their firm intent to start their own venture, while another 31.9 % had a vague intent to do so. A little less than one-fifth (18.4 %) was undecided, while 7 % did not intend to start a new venture. The remaining 2.5 % were absolutely sure they had no intent whatsoever for an entrepreneurial career.

In the following cohort surveyed (2014), as much as 45.5 % of respondents had a firm intent to start a new business venture, with another 32.5 % expressing a vague intent towards entrepreneurship. The amount of undecided students was somewhat smaller than in 2011 (12.7 %). Approximately 10 % did not think about entrepreneurship (6.2 % did not have entrepreneurial intentions, while 3.2 % rejected an entrepreneurial career completely).

Similar figures are reported in previous studies: e.g. Veciana, Aponte and Urbano (op. cit.) found that 40.3 % have a vague intent, 28.7 % a serious intent and 16.1 % a firm intent to start a new venture in Catalonia (Spain), while the same figures for Puerto Rico amount to 51 % for a vague intent, 12.1 % for a serious intent and 4.1 % for a firm entrepreneurial intent.

The *desirability of forming a new business venture* was measured according to the social desirability of entrepreneurship, both in primary reference groups and the wider society (Díaz-Casero et al. 2012). According to this view, we have created three questionnaire items, asking respondents how their primary reference groups (family, friends, peers) judge the desirability of entrepreneurship.

Another item, stating, *"the majority of people in this country believe that it is highly undesirable to be an entrepreneur"* was used to measure the perception of the entrepreneurial career. This formulation required reverse coding in data analysis, but was chosen based on several public remarks about the 'anti-entrepreneurial' climate in the country (as mentioned by, e.g. Pupavac 2011).[2] Empirical results

[2] Several remarks relating to an 'anti-entrepreneurial' climate in Croatia, i.e. a high level of undesirability of an entrepreneurial career, have been made, in some instances, by organizations, such as the Croatian Employers Association (Hrvatsko Udruzenje Poslodavaca—HUP), as well as by a former U.S. ambassador, at the end of his diplomatic term. This has been discussed by the media in Croatia (see, e.g. http://dnevnik.hr/vijesti/hrvatska/poduzetnici-u-hrvatskoj-vlada-antipoduzetnicka-klima.html and http://www.novilist.hr/Vijesti/Hrvatska/Cacic-se-slaze-s-HUP-om-Da-u-Hrvatskoj-doista-vlada-antipoduzetnicka-klima—both in Croatian), as well as in political circles (http://www.state.gov/secretary/20092013clinton/rm/2012/10/199931.htm).

Table 1 New venture desirability—results of empirical research for university students (2011 cohort)

		Family attitudes (%)	Friends' attitudes (%)	Peer attitudes (%)	Social desirability (%)
2011 cohort	Undesirable	1.5	1.3	1.9	9.9
	Somewhat undesirable	4.4	3.6	5.5	24.1
	Neutral	16.7	23.9	27.9	38.5
	Somewhat desirable	43.1	48.0	44.8	21.4
	Very desirable	34.2	23.3	19.9	6.1
	Total	100.0	100.0	100.0	100.0

Table 2 New venture desirability—results of empirical research for university students (2014 cohort)

		Family attitudes (%)	Friends' attitudes (%)	Peer attitudes (%)	Social desirability (%)
2014 cohort	Undesirable	0.6	0.3	1.9	15.6
	Somewhat undesirable	5.8	5.5	8.1	26.6
	Neutral	12.0	18.2	22.4	37.0
	Somewhat desirable	45.8	49.7	49.7	16.6
	Very desirable	35.7	26.3	17.9	4.2
	Total	100.0	100.0	100.0	100.0

related to 2011 and 2014 cohorts' perceptions of social desirability of entrepreneurship are presented in Table 1 (for 2011 cohort) and Table 2 (for 2014 cohort).

The obtained results *do not support the perception of an anti-entrepreneurial social climate in Croatia,* since the majority of all three relevant students' reference groups would evaluate their entrepreneurial career as somewhat, or even very desirable. However, the perception of the general social desirability of the entrepreneurial career is much lower, which could be attributed to a large number of corruption affairs being disclosed after the financial and economic crisis began in 2008. It is difficult to reach any definite conclusion, as this line of inquiry is outside of the scope of this paper.

A simple comparison of the 2011 vs. the 2014 cohort's perception shows that the perceived desirability of an entrepreneurial career by primary reference groups is slightly higher in 2011 than 3 years later, while the perceived social support for entrepreneurship is visibly lower. Once again, this initial result requires further multi-disciplinary research, since it seems that the general public may be developing perceptions of different 'classes' of entrepreneurs (e.g. local ones, owning well-

known, trusted businesses vs. 'crony' entrepreneurs, inter-connected with the political elites, involved in all kinds of unethical and/or illegal business activities). In order to provide a provisional empirical test of such a presumption, we have run the Chi-Square test of association. For the 2011 cohort, this test showed a statistically significant relationship between the fact that the respondent have been 'practically' exposed to entrepreneurship and their perception of how desirable it is to be an entrepreneur in Croatia. On the other hand, this relationship did not show the statistical significance at the required 5 % statistical threshold in 2014, which could indicate a change of attitudes during the observed 3-year period.

It is interesting to note that, out of those respondents, who did not have any 'practical' exposure to entrepreneurship, a share of 23.1 % perceive a negative, while 33 % perceive a positive social attitude toward entrepreneurship. At the other hand, personal exposure to entrepreneurial activities led to 36.3 % of respondents perceiving a negative social attitude to entrepreneurship, while only 26.2 % felt the reverse. With the empirical Chi-Square value of 10.652 and the significance of 0.031, it could be argued that, in 2011, there was a slight negative relationship, i.e. *that the personal exposure to 'practical' entrepreneurship led to the insight that Croatian society does not appreciate entrepreneurial careers and all obstacles that the entrepreneurs need to solve, in order to succeed.* However, the succeeding empirical results will show that this is not enough to reach the conclusion of a general 'anti-business' climate in the country.

Although the empirical results for the 2014 cohort are not statistically significant by conventional statistical parameters (Sig. = 0.055), it is interesting to report that 42.5 % of surveyed those students who were not personally exposed to an entrepreneurial person, perceived the negative social desirability of entrepreneurship, while 24.7 % felt otherwise. Among those who knew an entrepreneurial person, 42.1 % provided answers related to negative, and 20.6 % related to positive social desirability. In the observed 3-year period, *the perceived social desirability of entrepreneurship has been reduced, while the statistically significant difference between the two groups has practically disappeared.*

We also conducted the comparable analysis for the 'theoretical' exposure to entrepreneurship, described by the enrollment in (at least one) subject on entrepreneurship, within the formal university curriculum. *For both cohorts, there was no statistically significant relationship between the two* (with the Chi-Square value of 1.675 and Sig. = 0.795 for the 2011 cohort and the empirical value of the Chi Square test of 2.795 and Sig. = 0.593 for the 2014 cohort). Although the significance seems to be somewhat higher in 2014, it is quite clear that *the entrepreneurial education does not influence the perceived entrepreneurial climate in the country (at all).*

The *feasibility of forming a new business venture* has been measured by perceived self-efficacy (according to Ajzen's TPB), which should be operationalized in terms of facing risky and adverse future situation(s), as recommended by Díaz-Casero et al. (op. cit.). This is why we chose to formulate the relevant questionnaire item in the following manner: *"I have doubts that I am able to start and manage an entrepreneurial business and face the entrepreneurial risks"*.

The self-efficacy item (scored reversely) was further elaborated by eight (positively formulated) items, asking the respondent to rate his/her practical entrepreneurial competences in relevant areas (including generation of entrepreneurial ideas and products, creativity, problem-solving, communication and leadership, negotiation/deal-closing skills, managing entrepreneurial risk, as well as networking skills). As previously described, these items reflect the notion of perception of own knowledge and skills, as fundamental factors of feasibility for entrepreneurial behavior (according to the competing, Shapero-Krueger model of entrepreneurial intent). The obtained empirical results show a rather high amount of self-efficacy (negative perception of self-efficacy for 16.1 % and positive for 57.5 % of surveyed students in 2011, as compared to negative perception for 15.6 % and positive for 52.6 % of students in the 2014 cohort). Nevertheless, a high amount of respondents could not (or did not want to) assess their self-efficacy (with 26.4 % of neutral responses in 2011 and as much as 31.8 % in 2014).

In addition, less than 10 % of respondents (in the 2011 cohort) perceived their relevant entrepreneurial knowledge/skills to be completely inexistent, or at a very low level (see Table 3). The areas with the highest students' perception of their strengths, are related to problem-solving, as well as organizational communication and leadership, while the 2014 cohort emphasized creativity as their strength for forming a new business venture.

Table 3 Perceived relevant entrepreneurial knowledge/skills (2011 cohort)

		Perceive relevant entrepreneurial knowledge/skills							
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Incompetent	2011	0.6	0.6	0.2	0.4	0.6	1.1	1.5	1.1
	2014	0.6	0.6	0.6	0.3	0.3	1.6	1.0	0.6
Low	2011	3.8	5.9	5.3	1.1	2.7	6.6	5.5	6.6
	2014	6.5	7.5	4.9	1.0	3.6	8.1	8.4	11.4
Adequate	2011	33.4	29.2	18.2	16.1	16.9	24.3	31.3	24.3
	2014	32.5	35.7	21.8	20.8	20.5	27.3	38.3	34.4
High	2011	47.4	45.9	41.9	46.9	38.9	47.4	45.9	47.4
	2014	45.5	39.3	46.1	48.4	41.2	38.6	37.0	37.7
Very high	2011	14.8	18.4	34.5	35.5	40.8	20.7	15.9	20.7
	2014	14.9	16.9	26.6	29.5	34.4	24.4	15.3	15.9
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Abbreviations denote perception of the following relevant entrepreneurial knowledge/skills
(a) Generation of entrepreneurial ideas
(b) Creation of new products
(c) Creativity
(d) Problem-solving
(e) Communication and leadership
(f) Negotiation/deal-closing skills
(g) Managing entrepreneurial risk
(h) Business networking
Sources of entrepreneurial intent: Empirical analysis

In order to assess the initial hypotheses, we have used a simple linear step-wise regression model for both 2011 and 2014 datasets. Previously described (potential) predictors of entrepreneurial intent were selected by the SPSS algorithm, in five steps, so as to obtain the best regression model.

For the 2011 cohort, the following model (presented by Table 4) provides the best fit. It consists of five predictors, belonging to three (out of four) groups of factors, initially hypothesized to influence the students' entrepreneurial intent during the model-building stage.

The entire regression model is significant at the level of 1 % (Sig. = 0.00), with all the regressors significant, either at the 5 % (*), or 1 % level (**). Multicollinearity is not present, which is concluded by the low value of the VIF indicator (lower than 5) and values of tolerance (variance of one predictor, unexplained by the other ones) higher than the cut-off value of 0.2. Unfortunately, the predictive strength of the model (adjusted R^2), with the value 21.8 %, is only moderate.

If the entrepreneurial intent of the 2014 cohort is explained by a similar regression model, after four steps, the SPSS step-wise regression algorithm reaches the best model (see Table 5). It consists of four predictors, encompassing the same three groups of hypothesized factors.

The model is highly significant (at the 1 % level, since Sig. = 0.00), with all predictors also being significant (either at the 1 %, or 5 % level—marked in Table 5, in analogy with the 2011 cohort model) and showing no signs of multicollinearity. The predictive strength of this model is also rather low (to moderate), since the value of adjusted R^2 equals 17.4 %.

5 Discussion of Empirical Results

Since the desirability of entrepreneurship, as related to wider society, does not prove to be a predictor of the entrepreneurial intent in either of the discussed models, **hypothesis H2 needs to be rejected**. In the models for both cohorts, at least one of predictors belonging to the groups of indicators hypothesized by H1, H3 and H4, proves to be a significant predictor of the entrepreneurial intent, which leads to the **acceptance of the other initial hypotheses**.

It is very interesting to note that, from the aspect(s) of general social attitudes and desirability of entrepreneurial careers in Croatia, *the often mentioned 'anti-entrepreneurial' ('anti-business') climate does not seem to be influencing students' entrepreneurial aspirations*. Such an initial finding certainly deserves further research, since this construct could be easily replaced by the low commitment of the political leadership and/or inadequacy of the institutional support to entrepreneurship.

In terms of improving entrepreneurial education, it is important to single out the fact that it did not seem to improve the general perception of the entrepreneurial desirability. The choice of 'relevant' fields of business knowledge/skills, leading to the formation of entrepreneurial intent, also seems to be quite subjective, since our initial results show that those might vary with the individual student cohorts.

Table 4 Entrepreneurial intent (2011 cohort)

	Estimate	SE	t	Sig.	Tolerance	VIF	R^2	Adj. R^2	F	Sig.
Regression of ent'l. intent							0.226	0.218	27.284	0.000
(Constant)	2.620	0.156	16.777	0.000						
Family attitudes (as a measure of desirability)	0.131**	0.050	2.607	0.009	0.875	1.143				
Peer attitudes (as a measure of desirability)	0.110*	0.050	2.187	0.029	0.890	1.123				
Perceived self-efficacy (as a measure of feasibility)	0.316**	0.042	7.597	0.000	0.921	1.086				
Creativity skills (as a measure of feasibility)	0.155**	0.051	3.057	0.002	0.940	1.064				
Knowledge/skills for risk management (as a measure of feasibility)	0.156**	0.053	2.972	0.003	0.898	1.114				

Table 5 Entrepreneurial intent (2014 cohort)

	Estimate	SE	t	Sig.	Tolerance	VIF	R^2	Adj. R^2	F	Sig.
Regression of ent'l. intent							0.185	0.174	17.162	0.000
(Constant)	1.017	0.392	2.593	0.010						
Family attitudes (as a measure of desirability)	0.249	0.067	3.720	0.000	0.876	1.142				
Peer attitudes (as a measure of desirability)	0.196	0.063	3.113	0.002	0.907	1.102				
Perceived self-efficacy (as a measure of feasibility)	0.212	0.054	3.942	0.000	0.944	1.059				
Knowledge/skills for identification of ent'l. opportunities (as a measure of feasibility)	0.161	0.067	2.405	0.017	0.966	1.035				

Although this paper treats the problem of entrepreneurial education only marginally (since a separate empirical study on this topic is planned within this research project), these findings imply that the entrepreneurial education is a complex field, with sometimes surprising results. One of those may be the finding that the development of general self-efficacy could be considered as an important part of the entrepreneurial curriculum.

In the context of positioning youth entrepreneurship within the public policy space, the established influence of the primary social reference group upon the entrepreneurial intent might be less interesting than studies analyzing the institutional and other general preconditions for entrepreneurial development. However, this finding *emphasized the need for a social context and potential contribution of social capital to (youth) entrepreneurship,* as already indicated by Liñán and Santos (2007).

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Fiction and Substance. Start-Up Support: An Analysis on Interaction

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Abstract

Most forms of economic actions involve uncertainty insofar as these actions are future-oriented. Ambiguities coming along with business formations result for example from unpredictably changing market demands or the changing of the competitive situation. Handling uncertainties is therefore part of the entrepreneurial process. Following Jens Beckert's concept of "imagined futures", we refer to fictionalisation as a conscious stylisation of an unknown entrepreneurial future as a market success. Simultaneously, there is a need for substantiating strategies during the entrepreneurial process, which means signalising the feasibility of the business idea through certificates, analysis and data. In our research we analysed counselling talks between case workers and recipients of social benefits who aim to end their dependency on social welfare by becoming self-employed. Referring to eight case studies on interaction, fictionalisation and substantiation are analysed as practices of dealing with economic uncertainties. We interpret our findings as a distinctive form of business planning, which allows a rather flexible form of business development.

Keywords

Economic action • Uncertainty • Entrepreneurial process • Start-up support • Fictionalisation • Case studies on interaction • Planning process

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1 Handling the Uncertainties of Entrepreneurial Processes

Economic action on markets involves risks as well as imponderable uncertainties (Knight 1946). Founding a business likewise implies the need to cope with a considerable amount of ambiguity. The success of a business start-up depends on market demands, which can neither be estimated reliably nor be regulated by the founder (Swedberg 2003). Surely, company founders can try to influence market demands, for example by increasing the quality of their product, reducing the price or developing marketing strategies. But the market strategies come into effect only after a while.

In order to handle market-related uncertainties and in order to raise the likelihood for start-ups to be successful, a number of instruments have been developed and established in Germany, which aim to support start-ups. In part, the initiative to implement supporting instruments comes from the chambers of commerce; in part, these instruments were developed by public institutions. The founding support mainly includes consultation, which should facilitate the process of decision-making. Further supporting programs also imply qualification (e.g. workshops on economic or professional knowledge) and financial support (e.g. enabling favourable loan conditions). In some regions networks were established to facilitate peer-to-peer exchange. While the entrepreneurial risk is not overcome, these offers should certainly help to estimate risks and opportunities of an entrepreneurial project.

The various forms and modalities of start-up support and funding programs in Germany have not yet been investigated systematically. The research introduced here is based on a study analysing the implementation of "Einstiegsgeld", an instrument supporting business foundations (Pongratz et al. 2013). "Einstiegsgeld" aims to support recipients of unemployment benefit ("Arbeitslosengeld II") to end their dependency on social welfare by founding their own business. With regard to this example we analyse how founders and supporting institutions cope with market-related uncertainties while clarifying the entrepreneurial potential of the founding project.[1] Empirically we refer to case studies on interaction: we ran participant observations of counselling talks between case workers and their clients who aim to become self-employed. Theoretically, we promote a concept of entrepreneurial projects, in which we assume an interplay of two complementary practices: the practices of fictionalisation and substantiation.

This analysis contributes to entrepreneurship research focussing on entrepreneurial processes (cf. Carter et al. 1996) and the role of institutions promoting start-

[1] In Germany the "GEM—Global Entrepreneurship Monitor" (Sternberg et al. 2013), the "Gründer-Panel" released by the Institut für Mittelstandsforschung Bonn (Kranzusch & Kay 2011) and the "KFW-Gründungsmonitor" (Metzger & Ullrich 2013) document the developments of self-employment within various sectors and groups. In addition the "ALLBUS" (German General Social Survey), the "SOEP" (socioeconomic panel) or the "Mikrozensus" (published by the Federal Office of Statistics) deliver further data. Qualitative surveys analyse, for example, intentions to become self-employed and terms of business foundation (e.g. Bührmann et al. 2010).

up support (cf. Irsch and Witt 2011). We promote the assumption that uncertainties of future-oriented economic actions are dealt with through fictionalising and substantiating practices. Following Jens Beckert's (2013) concept of "imagined futures" we refer to fictionalisation as a conscious stylisation of an unknown entrepreneurial future as a market success. Simultaneously, there is a need for substantiating strategies during the entrepreneurial process, which means signalising the feasibility of the business idea through certificates, analysis and data. Both practices are necessary to legitimise the entrepreneurial idea for the founding person towards himself/herself, but also towards other actors such as the supporting institutions. Therefore, practices of fictionalisation und substantiation are relevant in start-up counselling (Bögenhold 2002; Busenitz et al. 2003). By means of participant observation we are able to reconstruct analytically how both, case worker and client, are seeking to balance their fictionalising and substantiating practices.

First, we will present our theoretical approach, referring to Jens Beckert's notion of "imagined futures" in economic action, which we interpret as the need for practices of fictionalising the start-up idea (Sect. 2.1). In addition, we extend this theoretical concept through the assumptions of substantiation, which we see as a complementary and supplementing practice (Sect. 2.2). Second, we will briefly introduce the modalities of start-up support through "Einstiegsgeld" and our research project, which seeks to clarify the implementation of this measure (Sect. 3.1). Further, we will explain case studies on interaction—our empirical approach—which are the basis for the findings presented in this paper: (Sect. 3.2). Our results show a variety of fictionalising and substantiating practices, which are negotiated in counselling talks between case worker and client in the "Jobcenter" (Chap. 4). Concluding, this result will be interpreted as a certain logic of planning a business, which is not only relevant when founding a business, but for entrepreneurial action in general (Chap. 5).

2 Fiction and Substance in the Entrepreneurial Process: The Analytical Framework

2.1 The Fictional Character of Start-Up Projects

Jens Beckert (1996) in particular has focused on the problem of uncertainty as a core issue when it comes to analysing economic processes (p. 126). In various economic fields actors refer to social mechanisms to reduce uncertainties (p. 141). Especially when taking into account that economic action is future-oriented it necessarily includes uncertainty. Beckert (2013) concludes that there is a need for "imagined futures", which include assumptions on upcoming developments, which again provide orientation for economic decision making.

Jens Beckert's concept of "imagined futures" and their relevance for handling the uncertainties of economic action is our theoretical point of reference when analysing counselling talks in founding processes. The fictional character of

foundation projects is obvious as they aim to establish an entrepreneurial enterprise, which does not yet exist. Each business idea contains a fictional character insofar as it imposes an unknown entrepreneurial future. The founder needs to develop a concept of his or her product or service, how it can be produced, which markt segment is relevant and how custumers may be recruited. This imagined scenario becomes the reference point of the entrepreneurial planning and economic action.

Jens Beckert defines fictions as "present imaginaries of future situations that provide orientation in decision-making despite the uncertainty inherent in the situation" (2013, p. 222). The fictions are narrations on the future, which are told as stories or in form of theoretical descriptions. They are integrated in institutional structures and social networks and the cultural frames (p. 234f). What can be said hypothetically about future states depends on common knowledge and beliefs. A founding project can be understood as an optimistic prediction for a service or a product to be successfully placed in a market segment under competitive conditions.

In guidebooks on business foundation (e.g. Hofert 2007; Lutz and Schuch 2011) one can identify such requests to fictionalise the entrepreneurial future. The advice literature encourages the reader to stylise the prospective entrepreneurial practice as a market success. The encouragement does not only address the business idea but also the founder himself/herself: the personal ideal of one's professional future and self-perception as a risk-oriented and active entrepreneur should be developed.

Beckert (2013, 2014) has not applied his concept of fictional expectations to business foundations. He focuses on the meaning of fictions for innovations and the dynamic of economic processes in capitalist societies. In Schumpeter's term of "creative destruction" he also identifies fictionalising strategies: "the entrepreneur 'pretends' the existence of the imagined new combinations in the future and structures his present behavior on the basis of these pretensions." (Beckert 2013, p. 231) However, Beckert does not specify how fictional ideas on new combinations are realised. We assume that additional substantiating practices are required in order to deal with uncertainties. Especially for business foundations, substantiating strategies are necessary, since uncertainties of the entrepreneurial future are more obvious as there are no structures.

In a complementary way we can find requests for substantiating strategies in guidebooks on business foundation. The literature recommends the collection of documentations, certifications and analysis. Through these, the founder can advertise his fiction as a successful occupational perspective towards supporters, partners or credit grantors. The business plan fulfils a key role within the start-up process (Willer 2007, p. 11ff). Both, fictionalising and substantiating practices are asked for.

2.2 Substantiation as a Complementary Practice

The fictionalised entrepreneurial future is confronted with requirements to substantiate the imagined construction. We conceive substantiating practices as any kind of

action that specifies the entrepreneurial intentions through facts and data, which are accepted as relevant facts when implementing a prospective project. These practices are also relevant to increase the confidence in the viability of the project. The forms of substantiating practices can involve quite different demands. In some cases these may include material objects (e.g. prototypes), in others certified skills (e.g. certifications) or general data (e.g. on market developments). Further, the meaning of the individual estimation of a founders 'entrepreneurial character' is not to be underestimated. The substantiating influence of these data depends on the degree of credibility they are attributed. In advice literature the terms of market exchange, conditions of producing the product or service, the estimated competition and costumer demands are addressed.

In Beckert's conception such corresponding requirements are vaguely introduced as a narrative element—"actors scrutinize the fictional expectations with available facts" (2013, p. 225)—or when characterising decisions for investments as a "mix of calculation and intuition"(2014, p. 13). In contrast we assume that fictionalisation and substantiation are complementary constructions. On the one hand, both presuppose and support each other. The fiction gains plausibility through substantiating facts and substantiation information increases the impact of fictional ideas. On the other hand, both practices have the ability to question the other respective other: facts and data can show that the imagined future is a mere fantasy—substantiating strategies need to prove their relevance for the fictional construction.

We interpret the strategies of fictionalisation and substantiation as possibilities to cope with the ambiguity of entrepreneurial projects. Referring to interaction analysis we explain how the strategies are implemented in order to present the founding idea convincingly.

These conceptions coming from economic sociology seem to be quite new to Entrepreneurship research. One reason may be that sociological concepts (Bögenhold 2002) have only rarely been applied during the uplift of Entrepreneurship Studies (e.g. Busenitz et al. 2003; Davidsson and Wiklund 2001; Acs and Audretsch 2010). Therefore, the problem of uncertainty has mainly been conceived as a psychological dimension of perception of risk (e.g. Cramer et al. 2002; Gifford 2010) but has not received theoretical significance. However, other works, which address practices and strategies of planning a business, appear to be more revealing (cf. Carter et al. 1996). For example Sarasvathy (2001) has found approval for his Effectuation Theory. According to him, founders make their decision in a flexible and dynamic way with due regard for available resources.

Analytical attempts to implement an extensive view on the process of business foundation (e.g. Steyaert 2007; Moroz and Hindle 2012) have hardly been applied empirically to date. There are constructivist views, which conceive the founding process as a narrating act, but refer to retrospective descriptions of the founding process (cf. Downing 2005; Gartner 2007; Lindgren and Packendorff 2009). In Chap. 4 we present our analyses of observations of interaction, where we can follow the construction of a founding idea in the process of its development.

3 Research Object and Research Method

3.1 The Institutional Setting of Start-Up Support Through "Einstiegsgeld"

The present analysis is based on eight case studies on interaction, which were conducted for a study analysing the implementation of "Einstiegsgeld"—a measure, which aims to support people becoming self-employed. "Einstiegsgeld" (§ 16b SGB II) was introduced in 2005 in the course of labour market reforms in Germany. It targets the support of recipients of unemployment benefit ("Arbeitslosengeld II") and aims to end their dependency on public welfare and start their own business (Pongratz et al. 2013). It is up to the "Jobcenters" (these are the institutions in charge of managing unemployment benefit) to decide which project will be supported and which will not. The process of decision-making is institutionalised through formal instructions and internal procedural guidelines provided for case workers. An essential criterion for the decision whether a founding project will be supported or not is the formal estimation whether it appears sustainable or not. In most cases, the Chambers of Industry and Commerce provide an evaluation of the prospects of success. "Einstiegsgeld" can be granted for up to 2 years, though most founders receive the support for 6 months (Bernhard et al. 2013); on average they receive 200 Euros per month (Haller et al. 2010).

"Einstiegsgeld" is an exceptional measure for the "Jobcenter", because supporting self-employment is not their core task. Their main function is to provide job placement service and social welfare. Composing a judgment of the problems and challenges of business foundation is unusual for case workers. As a result, the interaction between clients aiming to found a business and case workers takes place in a contradictory setting. Case workers in the "Jobcenter" usually have to fulfil two expectations: firstly they are expected to help the founder develop his/her business idea and then to change their own role and judge the business idea on behalf of the supporting institution. The "Jobcenter" should only support promising start-ups, so both, case worker and founder, follow practices to reduce the uncertainties that come along when starting a business. Practices reducing uncertainties are therefore influential during the interaction between case worker and founding person.

3.2 Empirical Approach: Case Studies on Interaction as a Research Strategy

The case studies on interaction were analysed referring to a variety of data. Mainly we refer to participant observations of counselling talks in "Jobcenters" between case workers and their clients (solely male clients). The data was collected for a research project analysing the implementation of "Einstiegsgeld" as a measure for recipients of unemployment benefit ("Arbeitslosengeld II") to become self-employed. Between December 2010 and July 2014 the research was conducted in a cooperation of the Institute for Employment Research (IAB) Nuremberg (Stefan

Bernhard, Joachim Wolff, Markus Promberger) with the Institute for Social Science Research (ISF) Munich (Hans Pongratz, Lisa Abbenhardt, Petra Schütt) (Pongratz et al. 2013). We shed light on founding and funding processes using a mixed-methods design: In six regions in Germany we conducted eight expert interviews with managers of "Jobcenters" and seven with start-up consultants, 16 problem-centered interviews with case workers and 40 narrative interviews with founding recipients shortly after their business foundation, and additionally we interviewed 20 of the funding recipients a second time, 2 years later (for information on the research methods see Witzel 2000; Schütze 1983).

Further, we conducted eight observations of interactions between case workers and persons receiving foundation aid. To supplement this, we ran pre- and post-interviews with both interacting protagonists and shed light on their particular views of the interaction. The observation as well as the pre- and post interviews serve as the central data for the analysis presented in this paper. The observations took place in the office of the case worker during a scheduled appointment between the case worker and the client. The pre- and post interviews were conducted right before or after the interaction. During the interviews some background information on the founding situation, the counselling relationship between client and case worker, and the views on the talk were discussed.

In case studies on interaction as an analytical method the various data collected during the research is combined, while the distinct views on the founding process are differentiated from each other (cf. Pflüger et al. 2010; Yin 2014). Each interaction is considered a case, while the business idea and the institutional conditions of the business funding constitute the context.

The examined cases show founding projects in different phases of the founding process and follow different business ideas. The following list contains the main topics, which were negotiated during the interactions:

Tattoo artist (B01): problems writing the business plan
Provider of mobile services (B02): general information on start-up support
Owner of a snack bar (B03): need for further business qualification
Importing food from Asia (B04): conditions for implementation
Energy-plant operator (B05): freedom to develop the concept
Manufacturer of musical instruments (B06): processing an order
IT developer (B07): formal requirements
Lecturer (B08): final preparation before starting the business

The data was interpreted in four steps: first, general information on the context of the situation was analysed, then each interaction was densely summarized; third, the action strategies of both actors were reconstructed, and finally, the material was interpreted with regard to the core topic of the interaction. All four steps were connected analytically to case studies and functioned as a basis for the comparison between them.

4 Results: Entrepreneurial Fiction and Administrative Support

Comparing the eight case studies on interaction we refer to the analytical dimensions of fictionalising a founding project (Sect. 4.1) and its substantiating requirements (Sect. 4.2) addressed via the supporting institution.

4.1 Variations of Fictionalisation in Supporting Processes

Our findings show that start-up support requires a specific form of fictionalisation. Both, case worker and client, develop strategies to fictionalise the founding project. The fictional degree of the presented projects varies immensely: The IT developer (B07) presents himself as an entrepreneur with an extensive founding fiction. As a business concept he wants to develop a computer system. During the observation the client describes his concept as a promising idea, although the concept itself remains rather vague. In the post-interview, the case worker recalls former talks with the client: the client kept presenting new business concepts, which he followed until something did not work out. The client does not only fictionalise his founding concept, but also knows how to stylise himself as an entrepreneur, willing to invest time and money to fulfil his vision. He describes long workdays and his continuous work on customer acquisition, promotion and public relations. During the post-interview the client presents his entrepreneurial self-perception as that of a lone fighter in a competitive economy. He constructs his entrepreneurial vision as a guiding principle for his professional self-perception. The business concept itself may vary.

In a similar way the client who wants to operate an energy plant (B05) presents himself as an entrepreneur with ambitious goals, but when confronted with scrutinising questions he has difficulties specifying his business idea. His business objective is to establish a big power plant in eastern Germany. During the talk with the case worker, he is proactive and describes himself as an unusual client who needs freedom to develop his business concept. In contrast to his confident appearance considering the size of his concept, he finds it difficult to describe his own role in his company.

Four out of eight founding fictions remain undefined in a similar way as the ones described above. In two further examples the founders present their idea in a rather restrained manner. The client who wants to provide a mobile service (B02) has just developed his idea and presents a rather vague business concept. The client wanting to import food from Asia (B04) at first appears to have a distinct business idea, but has not yet thought about the modalities of import, storage etc. In all four cases the vagueness of the business idea leads to practical problems with fictionalisation according to the requirements of the business plan.

In the other four cases the fictional dimension of the founding idea is not as vague. In most cases this is due to the fact that the founding person has obtained relevant work experience and therefore has quite distinct ideas about what lies

ahead. The man who aims to take over a snack bar (B03) has worked for the former owner for some time. Case worker and client need to clarify how further business training and the founding procedure can be combined. Likewise, the lecturer (B08) knows well what lies ahead of him. Writing the business plan appears very feasible, as he has taught business courses himself. In both cases the degree of fictionalisation corresponds with what is expected by the case workers in the "Jobcenter". Neither the case workers nor the clients have any further need to negotiate the degree of fictionalisation.

In contrast, in the two remaining cases, it becomes obvious that even if a business idea is generally convincing, there can be need for more fictionalisation. For instance the tattoo artist (B01) knows his business area quite well, but has problems describing his business concept in entrepreneurial categories, which are required in the business plan. He avoids questions concerning marketing or costumer acquisition, estimating income and expenses appears difficult to him. Similarly, the client producing musical instruments (B06) finds it difficult to integrate his knowledge of the field with the specific requirements of the "Jobcenter". In both cases the fictionalisation, which is required in the business plan, seems to contradict their course of action.

To summarise: in programs supporting business start-ups a certain degree of stylising a business idea is expected. The programs await specific forms of entrepreneurial fictions. The cases described above show that the supporting institutions try to regulate and shape the kind of fiction: Fantasies which seem rather overdrawn are restrained, whereas persons, who present inconspicuous founding projects, are animated to evolve a narration on possible economic developments. If the presented founding fiction remains a rather vague description, supporting institutions might regard it as implausible. On the other hand, if the fiction appears uninspired, it seems incompatible with the normative ideal of entrepreneurial activity. Therefore, fictionalising an entrepreneurial project is a task, which needs to be managed actively, if founders want to be supported.

4.2 Substantiating Procedures in a Bureaucratic Context

In order to substantiate the fictionalised founding project, case workers refer to formal administrative requirements. For this purpose, case workers have certain means of action available, which are approved methods in founding support. These are either requested by the national Federal Agency of Employment (such as the certificate confirming the viability of the enterprise), or by the local "Jobcenter" (e.g. assessment center), or they are methods inspired by start-up counselling (e.g. business plan). These procedures can be used to substantiate founding projects, because certain aspects function as binding and verifiable requirements. These are personal skills, legal conditions, market analyses or confirmed access to resources. Substantiation also includes the possibility to verify the seriousness of founding projects regularly. The questions imposed by the case workers, as well as their suggestions and assignments can be seen as instruments to control how serious a

client is about his aim to become self-employed. In the observed cases the amount and kind of substantiating requirements are negotiated in varied ways.

During the talk between the IT developer (B07) and his case worker, the disciplining character of bureaucratic requirements becomes increasingly dominant. Case worker and client cannot clarify the business idea and as the case worker's impression is reinforced that the founding idea is not proceeding, he takes over the initiative with recourse to the bureaucratic rules and requirements of the formal support. The change of subject leads to a defensive pose of the client; relating to formal requirements the case worker binds the client to substantiating steps. Formal proceedings, which include legal rights and obligations, can fulfil a dual function for the case worker. On the one hand, they can function as a support for the development of the business idea and its market potential. On the other hand, they can be used as techniques to discipline the founder's course of action.

Not in all cases are bureaucratic requirements applied to discipline the client, but they are used to prove the seriousness of a business intention. Process-oriented questions, recommendations and instructions of the case workers can be understood as a test of how dedicated the founders are. For example, the founder who wants to import food (B04) is asked to deliver evidence of some tariff regulations and health policies; in a similar way the demand for written agreements with business partners, which the case worker requests from the energy-plant operator (B05), is used to prove the seriousness of the undertaking as well as serving as an encouragement to develop the business concept. Whenever the business idea appears to be unspecific, the case workers react with formal and practical requirements. Formal rules are also used to legitimise an early conclusion of the application process: the request for start-up support by the client wanting to provide mobile services (B02) is rejected because of his need to improve his language skills.

In some observed interactions the recurring request for formal obligations shows a ritual character, especially when founders are not able to establish a fiction on their business idea in line with what is expected in the business plan. It becomes obvious that all requests for substantiation come to nothing when there are no fictionalised business ideas: The tattoo artist (B01), for instance, is not only repeatedly asked for some certificates, but also advised on how to get them. As he is does not respond to that either, the case worker asks him to go to an external business consultant.

In all these cases, the business founders have perceived the substantiating requirements as barriers in their founding process. This is different in cases where the founding idea appears to be clarified on both sides. The founders use the formal procedure for their own sake and contribute their own ideas to it. Instead of being discouraged by the outlook of attending business classes and starting his snack bar at the same time, the client (B03) suggests creative alternatives on how to manage both. The lecturer sees it as his duty to fulfil all formal requirements. Both clients (B01 and B03) support the formal procedure by trying to understand the bureaucratic logic of the start-up support. Thus, the procedure can be implemented more quickly and more easily, and the founders manage to motivate the case workers to use their leeway in decision-making in favour of the clients.

The formal handling of the institutional procedure to substantiate business ideas therefore helps the case worker to specify the business idea, it allows to discipline the founding person and it also enables the case worker to ensure his/her own approach. Missing forms or certificates can be used as a justification to end the application process and on the other hand, existing documents can legitimise the continuation of the process. Since case workers only have little time to talk to clients, the formalised steps offer an indication of how to proceed and reach a decision. In general, these formalised documents enable assurance.

We can see that the observations reveal three typical constellations of interaction: (1) Some interactions can be characterised as a smooth interplay between case worker and founder. In these cases the entrepreneurial concept seemed clarified for both, client and case worker; there was no need for further fictionalisation and substantiation; all formal expectations were met by the client. (2) Other interactions proceeded in a less consistent way; the cooperation was rather restricted. Although the clients were committed and the case workers were willing to support, the founders and case workers had different conceptions of fictionalising and substantiating strategies in the business concept. (3) Other situations revealed constellations of latent conflict. This was the case when the fictionalised project appeared either too vague or too overdrawn. The case workers then insisted even more on substantiating actions. They used the formal procedural requirements in order to stay in charge of the situation. At the same time, they were willing to negotiate and find individual solutions, if they perceived cooperation on the part of the client.

5 Conclusion

To fictionalise and to substantiate are strategic options, which enable decision-making and cooperation in entrepreneurial processes (cf. Steyaert 2007). The ability of clients to fictionalise their entrepreneurial future varies. This ability should be considered as an entrepreneurial skill. In order to substantiate a fictionalised founding project, case workers can refer to formal procedural requirements and use them for overdrawn as well as for hesitant founding ideas.

These empirical findings show that, when planning a business, practices of fictionalisation and substantiation complement each other. Through both practices the problem of uncertainty can be managed as part of interactive negotiations. General uncertainties of market demands are transformed into smaller and manageable planning steps. Not always does that involve a reduction of uncertainty, but they are a prerequisite and strengthen the personal security.

Further, the case studies on interaction reveal a characteristic interplay of fictionalising and substantiating strategies during the founding process. Fictional elements created the need for substantiation and specifying substance was then again questioned with regard to its entrepreneurial fiction. All stages of planning a business contained elements of fictionalisation and substantiation; we could not observe a certain pattern of fictionalising or substantiating strategies, both occurred

on various occasions when the situation afforded them. We were surprised to observe how flexibly both practices were implemented in various contexts and how strong their mutual influence was.

We interpret this as a particular dynamic of business planning. This can be demonstrated in contrast to models of instrumental decision-making, which are advocated in management literature. The processes described there promote a certain sequence of action, comparable to feedback control loops: a baseline study, goal determination, choice of means, implementation process and control (the latter may lead to new goal determinations). Surely the idea of feedback loops is integrated in the model, but all procedural steps are separated from each other. In contrast, the interplay of fiction and substance is not to be understood as a sequence of controlling circuits, but as an oscillating movement. Indeed, fiction and substance tend to become more similar, the more specific a business concept is, but still their interplay remains. The oscillating rhythm during the planning process does not overcome uncertainty, but it keeps it manageable while allowing actors to stay flexible and maintain room for further development. The business plan serves as reference point for action and decision-making, but can only temporarily reduce the dynamic developments.

We presume that the observed interplay of fictionalising and substantiating practices is a distinctive logic of planning in economic actions. It occurs simultaneously to other modes of planning, such as rational (cf. Beckert 2013, p. 220ff), incremental (Lindblom 1959) or discursive (Fischer and Forester 1993) planning procedures, but remains relatively independent. It answers especially to problems concerning uncertainties in market action. Fiction and substance are constituent principles of an oscillating dynamic of planning a business. The dynamic itself delivers orientation when dealing with the uncertainties of market action. In comparison to rational decision-making, this planning process can be designed to be rather open and flexible, but it also enables more determined actions than incremental planning does. Although the process may be part of "collaborative planning" (Healey 1996) (for instance in consultation), practices of fictionalisation and substantiation remain correlated and need to be adjusted.

Due to structural similarities between business start ups and other kinds of entrepreneurial projects the planning mode of fiction and substance may be relevant for the latter as well. Its specific efficiency lies in the interplay of fiction and substance, which does not suggest a simple instrumental planning mode promising reliable transformations of entrepreneurial goals. Instead, the gains through substantiating practices suggest further fictionalisation, which again needs substantiation. Dealing with the uncertainties of economic action involves an ongoing tense interplay of fictionalising and substantiating strategies.

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Establishing Ethical Values in Entrepreneurial Decision Making: The Justification for a Cognitive Network

Bernard Cadet, Alina Gomez Mejia, and Isabel Cuadrado-Gordillo

Abstract

Entrepreneurship, which mainly aims at creating values and goods, cannot be further conceived without referring to some ethics principles, which, despite being of a general nature, are to be made visible and socially assessable when decisions are made (strategic choices). This article is dedicated to ethics in the realm of entrepreneurship and is organized in three parts. In the first part, the difference between two forms of implementation of ethics is stressed: the traditional form, which is transcendental, universal and applicable in all circumstances, and a second form, which refers to some more specific and recent cases, and varies with the type of activity and the circumstances. The latter includes the ethics of entrepreneurship. The second part of this article analyses entrepreneurial ethics as a finalized cognitive activity entailing opposite

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objectives ruled by the uneasy realization of a compromise in a context of uncertainty. The last part underlines the advantages of a change of paradigm. The sciences of complexity cover a group of properties specific to evolutionary systems, which show that entrepreneurial ethics result from the activation of a cognitive network.

Keywords
Entrepreneurial ethics • Professional ethics • Ethical decision-making • Complex systems • Cognitive networks

1 Introduction

In the course of its lengthy history—which began with ancient Greek philosophy and is still very much alive today—the concept of ethics has undergone very many changes as to its nature, its content, and the ways in which it is put into practice. Even though current forms of ethics can quite legitimately claim to be descended from those prevalent in previous centuries, their relationship to the latter is very remote, given that they are structured around entirely different points of reference (Osborne 2005).

It is nonetheless the case that, all through these developments, one almost constant characteristic feature can be observed: *ethics* is linked to *action*. For it to be acceptable, a decision that is enacted must integrate and conform to ethical principles, i.e. to values acknowledged as such by a social community to which the decision maker, whether an individual or an organization, belongs. The task ascribed is that of making a strategic decision, i.e. of choosing from a set of available options one that is to be preferred and then implemented. This implies something that is both active—dealing with the actual situation—and prospective—evaluating the consequences of the particular choice that is made.

In this presentation, we shall focus on the analysis of the process of reaching an ethically acceptable decision in one specific field: that of entrepreneurship, which has become important in the achievement of both individual and social needs.

We shall discuss this topic under three main headings: firstly, a brief conceptual description of the evolution of ethics with particular emphasis on its current forms; secondly, an analysis of the concept of entrepreneurial ethics; and thirdly, the cognitive ways in which entrepreneurial ethics can be performed.

2 Transcendental Ethics and Sectorial Ethics

Ethics and action are so closely interlinked that this combination in itself could well be looked upon as one of the fundamental criteria of decision-making. Nevertheless, the relationship between ethics and action is not easy to conceptualize, given the existence of several kinds of ethics.

2.1 Transcendental Ethics

In philosophy, which for centuries long was the discipline to which it was related, ethics was often thought of as being transcendental, not only by philosophers in antiquity, but also in the works of the two main thinkers of the movement known as "German idealism": Kant (1724–1804) and his most energetic and unpredictable follower, Johann Gottlieb Fichte (1762–1814). Fichte claimed to be more Kantian than Kant himself and saw himself as the only thinker to have completely understood Kant's *oeuvre* (Rockmore 2011). The pupil's admiration for the master, which corresponds to the classic process of identification with a father figure as described by Sigmund Freud, led inevitably to confrontation—to put it more precisely, to the symbolic "murder of the father". The reason for this had to do with ethics (which, it must be said, is a somewhat unexpected alibi for a "murder"!).

To put it very concisely, we could say that these two authors, both of whom admired the beginnings of the French Revolution and the overall value system that it sought to promote, viewed ethics as a transcendental value, as a moral kind of value that is "universal". It applies whenever a decision is made, in every domain, to every action and in all circumstances; it follows that nothing specific to the person involved or to the given situation is to be taken into account.

The human being is the origin of this, as Picardi (Webography: document 1) points out, though he follows different modalities. "Kant makes a fundamental change in the basis for moral obligation [by transferring it] from an external theological or legal dimension to the completely internal one of self-legislation by practical pure reason" (Picardi, p. 1) Kant brought about "the elimination of the material basis of duty [. . .], indicating that the sole possible basis [. . .] is the form of the law" (ibid). Kant made a distinction between man and nature, so that man can therefore act upon nature. This perspective has been described as "rigoristic", given man's inevitable submission to "categorical imperatives" dictated by duty, thanks to which, in the end, he can become free. Schiller (1759–1805) was unreservedly critical of that powerful need for submission, arguing that it "transformed the strongest manifestation of moral freedom into nothing but a more specific kind of servitude" (quoted by Picardi, p. 2).

In the face of Kant's "pure reason", "sensitivity" (wishes, motivation, etc.) was re-introduced in Fichte's conception, which was described as "idealistic". For Fichte, man and the universe are not in opposition to each other. Influenced as he was by Romantic ideas, he saw man as being *part of* the universe. Nowadays, we would say one element of a system participating in the context of the decision situation. It is in this situation that knowledge, wishes and needs are also brought into play, leading to the conception of ethics in terms of a system (Fichte 2000).

Therefore these global ethics, in their different forms—the one structured by reason, the other by feelings—represent a guide for action, one that can be transposed from one situation to another while retaining their global nature. It is precisely this general aspect that modern conceptions of ethics call into question via the introduction of sectorial ethics.

2.2 Sectorial Ethics

A characteristic feature of the second half of the twentieth century was the arrival and subsequent proliferation of sectorial ethics, i.e. "those particular to the domains in which human activity is deployed" (Gomez Mejia and Cadet 2013). Medicine, scientific research, education, economics, entrepreneurship, the engineering sciences, etc. have all drawn up specific ethical codes that go far beyond the professional codes of the past. Such a proliferation has two great qualities, one of which is practical, the other theoretical. The former highlights the necessary reference to the ethical dimension when some degree of "professional" choice as to an action involving consequences for the future is to be made. The latter raises fundamental epistemological and methodological questions that are detailed below.

2.3 Epistemological and Methodological Questions

The epistemological questions are about the nature of ethics: "Is it enough simply to *adopt* an ethical approach and transpose it [to various fields. . .] or must it be *adapted* in accordance with the specific characteristics of each discipline?" (Gomez Mejia and Cadet 2013, p. 23). The methodological question is about how to create and assess the ethical value of a *particular* action when using *general* ethical principles. These operations are difficult because the links, whatever their nature, between general ethical principles (as expressed by transcendental ethics) and concrete ethical decision-making (as required by sectorial ethics), are very loose. The supply does not fit to the demand: generic ethical values, because of their extreme generality, are not directly related to real situations, and reliance on general ethical rules does not guarantee that a particular chosen action is really an ethical one. This may lead to making a distinction between theory and practices of ethics (Velasquez and Rostankowski 1985), but can also open other paths for exploration. One of them, which has been poorly worked, is knowing the cognitive work, which allows the "adaptation" and "implementation" of general values in pre-existing contexts, the characteristics of which are not identical. A widely known but difficult instance of this kind of situation is the ethics of entrepreneurship.

3 The Ethics of Entrepreneurship

In a very wide-ranging sense, the ethics of entrepreneurship is one of the sectorial ethics that have been the object of much research over the past few decades (Hicks 2013; Luetge 2014), focusing on new ventures being set up or on already-existing businesses being restructured as a result, for example, of some major technological innovation.

3.1 Entrepreneurship as a Finalized Activity

There are many ways—often quite dissimilar—of looking at entrepreneurship. Shane and Venkataraman (2000, p. 18) define it thus: "the scholarly examination of how goods and services are discovered, evaluated and exploited. . .. . .the study of *sources*[1] of opportunity, the *processes* of discovery of individuals who discover, evaluate and exploit them". Baucus and Cochran (2009) emphasize the generality (which could be described as operational) of that definition, which can be applied both to the creation of a new enterprise and to the taking over of an existing one. It is for a quite different reason that we have chosen it. Its generality is due also to the fact that it treats entrepreneurship as a set of mental (more precisely, cognitive) operations dealing with the search for and processing of information in a finalized perspective: that of enabling the enterprise to function in the best possible manner. This implies that the entrepreneur's cognitive activity follows an "intentional map" (Andersen and Buneo, 2002) and that the enterprise architecture is a complex one (Rabaey 2014).

3.2 Ethics and Entrepreneurship

What relationships between ethics and entrepreneurship will contribute to this optimal level of functioning? Venkataraman's (2005) analysis of this aspect takes as its mainspring the idea of value creation. On the one hand, "entrepreneurship is concerned with how the opportunity to create 'value' in society is discovered or imagined and acted upon by some people" (Venkataraman 2005, p. 170). "The field of business ethics, on the other hand, is concerned with the fairness of methods used to create this 'value', and the ensuing distribution of the value among various stakeholders to the enterprise." (ibid.) "Entrepreneurship and ethics [. . .] together seek to describe, explain, predict, and prescribe how value is discovered, created, distributed, and perhaps destroyed." (ibid.) Venkataraman draws the conclusion that these "represent two sides of the same coin: the coin of value creation and sharing" (op. cit., p. 171).

3.3 Ethics and Entrepreneurship: The Search for a Compromise

Combining ethics and entrepreneurship in a real-life situation, at the level of the choice of what action to undertake, would nonetheless immediately seem to be more complicated, given the presence of two constraints in the actual situation—one by default, the other through excess. On the one hand, if no ethical markers can be identified, the decision will be looked upon as unacceptable and perhaps even vilified and condemned. Alizul's blog (Webography: document 2) highlights

[1] Italics in the original.

various kinds of major ethical deficiencies, some of which are repetitive, that have been identified in ten multinational corporations. On the other hand—a somewhat hypothetical case—any decision to undertake an action based exclusively on ethical grounds would inevitably bring ruin upon the corporation in which that decision was made: producing ethics is not, after all, the primary aim of any company or organization. Businesses are there to produce goods and services in a given economic climate that is subject to change.

Ordinary representations of the entrepreneur/decision maker do indeed refer to the idea of creating value, the cornerstone of Venkataraman's analysis. It is nevertheless relevant to argue that the meanings that this notion may take on are not as spontaneously complementary as Venkataraman would have us believe. If we extend the comparison that we have just suggested, it would be more correct to say that they represent the obverse and reverse of the same coin (in this particular case, of the same situation). The obverse represents the monetary value V, expressed as the financial profit; the reverse is the ethical value E, represented by the satisfaction gained from having made a decision that takes into account various moral principles that are thought of as being fundamental (fairness, transparency, freedom, respect, the positive nature of the outcome, etc.).

The difficulty in making a decision thus lies in the fact that these two sets of values are usually contradictory, in the sense that an increase in the one brings about a decrease in the other. In economics, that conflict was identified very early on. Just for the record, from the point of view of a radical form of capitalism initiated by Milton Friedman (1962), it was argued that economic activity has its own rules, such as of profit-making, and that ethics are superfluous, given that they impose restrictive rules on the objective: the maximization of profit. One of Friedman's best-known articles carries the title "The Social Responsibility of Business is to Increase its Profits" (Friedman 1970). Since then, the evolution of social values and developments in science and technology have given rise to "ethical needs" (Gomez Mejia and Cadet 2013). Maximum profit as the main objective can no longer by itself justify any particular decision; hence, the rejection of that kind of radical theory.

Nonetheless, having to deal with situations in which profit and ethics are in mutual conflict may still be very much an issue in present-day circumstances, some of which have been described by Bishop (2000)—globalization, ecology, corporate social responsibility, sustainable development, respect for minority cultures, etc. How are we to reconcile the fact that capitalism, an efficient system for the production of goods, can coexist with poverty, destitution and inequality? This can only be the result of the complete absence of ethical values. Bishop (2000) argues in favour of the search for some compromise, which is in itself a challenge, "[addressing] the question of ensuring ethical and just societies without sacrificing capitalism's productivity" (extract from the publisher's presentation of Bishop's book). In the same way, Kuratko (2014) underlines that "ethics may outline moral duty and obligations . . . for conducting activity in an acceptable manner".

3.4 Reaching a Compromise: Cognitive Problems

The ethical entrepreneur has therefore to find a solution to a complicated question—that of achieving some sort of compromise or adjustment between the values V and E, which relate to opposing demands. This is all the more complicated, in that one of them (ethics) is defined conceptually rather than quantitatively; each has an impact on the other, and what is more, they have to be combined in order for an actual decision to be made—one that will be validated only by the results obtained, which themselves depend on external circumstances (the state of the market)!

Working out such a compromise is a matter of processing information (i.e. a cognitive activity); this brings into play many different activities, which, in addition, must be coordinated. There are different aspects to this: the search for information, memory recall, evaluating and weighting various items, integrating the different sources, choosing and planning the correct decision, and forecasting its impact Ferrell et al. (2014). These are high-level cognitive activities (Wu 2008), so the mental burden (Kirchner and Kirchner 2012) involved is considerable.

There are noticeable difficulties in obtaining information, either when a corporation is being set up, or in the case of the choices to be made in order for it to function properly. According to Venkataraman (2005, pp. 171–172), "the process of creating products and markets implies that much of the information required by potential stakeholders—for example, technology, price, quantity, tastes, supplier networks, distributor networks and strategy—are not reliably available". The task is all the more complicated in that not all the kinds of information that we have enumerated (and the list is far from exhaustive) are of equal importance, therefore some items will have to be weighted by "coefficients of importance" (beta-coefficients in the case of linear regression), which will give more importance to those elements that are felt to be fundamental. That said, the work of ethical entrepreneurial decision-making is not yet over, because the entrepreneur has to take into account the specific characteristics of the context. The information appearing on the entrepreneur's decision-making plan of action will interact with the actual contextual situation, which, in many cases, will be the current state and characteristics of the market. In all cases, carrying out ethical decision-making ends up being a "challenge" (Kuratko 2014).

3.5 Uncertainty and the Forms It Takes in Ethics

At every stage of that work, the cognitive aspect that is most present, is uncertainty. This had been analysed very early on with regard to the role it plays in entrepreneurship, where it can give rise to a negative impact on the decision-making process (Knight 1957/1921)—for example, hesitation, missed opportunities, putting-off making a decision. Recent analyses, however, have shown that it may have a more positive impact within the entrepreneurial field itself (McMullen and Shepherd 2006)—postponing the need for action in order to examine other available options, the opening up of new markets, creating wealth, etc.

Uncertainty in ethics results from variability and unsteadiness of relationships between theories, principles and actions and from the difficulty of finding appropriate applications of well-defined theoretical values (nearly always the same) in various contexts (nearly always different). One way of looking at this nowadays readily acknowledges that this generic designation is too wide-ranging; it covers several different conceptions. Rubin and Meiran (2005) draw a distinction between uncertainty linked to the task itself (task uncertainty)—and therefore to the system—and uncertainly linked specifically to the choice of action (outcome uncertainty).

In ethics, both kinds of uncertainty coexist. It could be said that an experienced entrepreneur, given his/her previous empirical knowledge, can correctly control the uncertainty of the task with the help of finalized mental representations called, as we mentioned earlier, "intentional maps" (Andersen and Buneo 2002); the ethical relevance of the options adopted will be evaluated with respect to the choice of action. At that level, however, as we have seen, the interactions with the characteristics of the environment are many in number and quite specific, thereby making the presence of the desired ethical effects *unstable*. In order to be ethical in actual fact, it is not enough simply to *want* to be ethical—only the results recorded in the actual situation, after content validation (Slavec and Drnovsek 2012) will enable some conclusion to be drawn as to the validity or otherwise of the compromise that has been reached.

From a cognitive point of view, when the degree of experienced uncertainty is conceived of in a dynamic manner, it is seen as the result of not perceiving and/or of not being aware of certain elements of the situation that are in fact in operation but are not part of the decision maker's representation of the task. These will determine the states towards which the business enterprise might evolve, outside of the entrepreneur's control. The term "cognitive control" (Botvinick et al. 2001) has been used to designate the degree to which every decision maker manages the situation in a voluntarist way. Generally speaking, uncertainty and cognitive control are looked upon as being in an inverse relationship: when one increases, the other diminishes. Since neither can reach an absolute level, some degree of compromise must once again be found.

4 Ethical Entrepreneurial Decisions: How a Cognitive Network Functions

4.1 A Change of Paradigm

Earlier in this presentation, we emphasized the weaknesses in the manner in which human beings perform in processing information whenever uncertainty is a factor. At that point, bias and mistakes in their decisions are by no means uncommon (Hogarth 1987), a conclusion that emerged from a significant number of research studies carried out in the 1980s. Those results were mainly based on laboratory research, which made use of *formally defined criteria* and processed data by means

of the *experimental paradigm* then prevalent in the laboratory. *Mutatis mutandis*, the same criticism could be directed to quasi experimental treatments in field studies (Harris et al. 2006).

From 2000 on, the perspective adopted in these research projects changed. Performance began to be assessed in terms of *real-life situations*—what was actually being done under natural conditions described by Brunswik (1952) as ecological (in the etymological sense of the word). The tasks that are now being investigated are complex situations (setting-up of businesses, piloting aircraft, managing nuclear sites, financial investment, political decisions, etc.) that cannot be reduced to a small number of variables, as the experimental paradigm requires. That epistemological transformation, which has its roots in physics and astrophysics (Prigogine and Stengers 1986), is characteristic of the *paradigm of complexity sciences* and gives more weight to the idea of *system* than to that of the variable as its unit of analysis.

Moving from the first to the second kind of paradigm has less to do with choice than with an epistemological requirement that necessitates an increase in the validity of predictions (via more appropriate conceptualizations) in order to act more efficiently on the world in terms of what is being aimed for. That transformation is an example of what Kuhn (1962), called a "paradigmatic shift", i.e. one that became inevitable because the earlier version was found to be inadequate.

4.2 The Impact of This Paradigmatic Shift on Determining Entrepreneurial Ethical Values

In entrepreneurial ethics, the shortcomings of the experimental paradigm are due to two obstacles: reductionism (the limited number of variables) and indicialization (employing a restricted number of typical indicators). These two elements tend towards the valorization of the general and permanent nature of the decision criteria, whereas ethical value is specific to the business concerned and the context (economic, social, temporal, circumstantial, etc.) in which that decision will be implemented. What, therefore, has to be taken into account above all are the specific and distinctive elements, not the general, permanent ones.

There follows from this an epistemological option: in order to establish an ethical approach that is responsive to fluctuations and particular situations (which thus become the characteristics that must, above all, be taken into account and processed), it is no longer enough to attempt to set up the kind of ethics that draws simply upon conceptual and abstract points of reference within a globalizing perspective. A more adapted strategy consists in advocating some "re-investing in data derived from the actual domain that is being studied" (Cadet 2010)—in this case, the business and its environment; that strategy will therefore be based upon substantive data rather than on general theoretical ideas.

This choice implies that the person who decides what ethical action is to be taken sees that substantive data as a highly valid source of information; if the entrepreneur dares (the use of that word is by no means an exaggeration) to follow that path,

he/she will have to distance him/herself from any approach that aims to isolate the variables in the situation in order to adopt an overall interpretative schema in terms of complex systems.

Applying the complexity paradigm to determine ethical values in corporate governance gives rise to two sorts of question, which we shall explore one after the other: whether businesses are to be looked upon as complex systems (Sect. 4.3) and what kind of human performance is implied in working with complex systems (Sect. 4.4).

4.3 Businesses Viewed as Complex Systems

In studying this first element, it would be helpful to review the characteristics of complex systems and to try to figure out if they are indeed applicable to businesses and corporations. Cilliers (1998, pp. 6–7) sets out ten characteristic features of complex systems. For the sake of succinctness, we shall group these under three headings. The first is made up of information data and their characteristic features—they are many in number, active, have a mutual impact on one another, and interact according to non-linear modalities, thereby making forecasting difficult. The second brings together the properties of the system itself: it has its own forces, which set up dynamic movements that enable it to evolve. That evolution may depend on the actions taken by the decision maker in order to reach some objective or other (in the present case, actions that lead to an ethical decision) or on some degree of self-organization (*autopoïesis*) that enables a kind of equilibrium to be reached. An item of information that was earlier thought of as being of little importance may in fact turn out to have a significant impact, because of the prevalent conditions that suddenly turn powerful ethics into something much weaker. Thirdly, these kinds of equilibrium are not in any way permanent; under the influence of the environment, the system may swing completely towards some other kind. Also, every complex system is open-ended and can modify its frontiers. Influencing and managing its course of action by an agent (the entrepreneur) require him/her to be aware of its *original state* and its *developmental history*, two elements of information that play a major role in reducing uncertainty.

Applying these generic descriptions to situations of corporate governance does not give rise to any particular problem, because they evoke situations that are actually experienced and are indicative of observations and facts that are easy to carry out. Applying face validity and content validity, carried out efficiently in the management of another complex system—health care (Cantrill et al. 1998)—leads to the conclusion that it is heuristic to conceptualize the search for ethical values in entrepreneurship by referring to that paradigm.

4.4 Human Performance and Complex Systems

The terms "human performance" and "complexity" would seem *a priori* to be in an inverse relationship with each other, as we pointed out earlier. We should nevertheless take into account the fact that statements such as "complexity reduces human performance" always arise from studies based on the experimental paradigm. What becomes of human performance when it is assessed in the context of the complexity paradigm?

What we can observe here is completely counterintuitive but is no less real because of that: under certain conditions of learning and familiarization that increase "cognitive control", human beings are able to make decisions that are usually well-adapted and pertinent in all kinds of complex systems. That said, they often find it difficult to explain analytically and in detail the cognitive process that they followed, to the extent that some specialists have spoken of a cognitive unconscious (Kihlstrom 1987) and others of automatic processes (Shiffrin and Schneider 1984) that "work" efficiently outside of any conscious control and whose contribution is added to that of conscious processes. Recently, Mushtaq et al. (2011, p. 1) have argued that "humans are able to effectively handle uncertainties [...] to predict future events and make appropriate decisions", although they do regret the fact that "the models [applied] tend to be largely agnostic regarding the specific cognitive mechanisms recruited for this successful adaptation".

4.5 The Paradoxical Efficiency of Complexity

All things being more or less equal, the human decision maker would seem to be more efficient when he/she processes data in a real life situation and in a natural environment (the complexity paradigm) than when he/she has to process data that have been selected within an artificially simplified context (the experimental paradigm). Many studies lend weight to this *paradoxical efficiency of complexity*, which implies that, in a complex situation, the human operator seems to make more pertinent decisions than in neatly filtered situations in which only selected variables are present. Over and beyond our initial surprise at this, we could say that a greater number of sources of information is mobilized in complex approaches that to a significant degree involve the reality of situations, as well as the modalities of processing them that are brought into play. Motivation and personality (Bonnet et al. 2011), affectivity and feelings, the degree of involvement in the task, the requirements of the corporation, the cognitive means devoted to the task, etc.—all of these are essential sources of information that are systematically excluded from any form of treatment because of the strict control of the situation that the experimental paradigm sets up. One of its fundamental rules consists in "cutting up" reality in such a way as to take into account only those independent variables (to the exclusion of all others) that have been retained after an initial choice based simply

on the belief (i.e. the hypothesis) that the variables processed contain a high degree of explanatory potential that may even be deterministic.

In complex approaches, which operate in the natural environment, no initial reduction is made; on the contrary, an attempt is made to take into consideration the whole set of data—not in a fragmented way, but by constructing *highly active networks* that link the data together and in so doing structure the situation. Hebb's law (Hebb 1949), with its connection to the idea of neural networks makes this explicit. Each network is made up of neurons that are inter-related because of previous exercises, and the repetition of exercises strengthens the links between these nodes (facilitation), the same rule being "conceptually" efficient in entrepreneurship (Chang et al. 2008).

4.6 Entrepreneurial Ethics Seen as the Activation of a Complex Cognitive Network

The idea of a neural network, in its primary sense of a mode of organization of the nervous system, has become more widespread and now includes several kinds of network that are made use of in artificial intelligence and cognitive psychology.

It is now possible to deduce what processes are at work in the construction of an ethical decision, thanks to the notion of *cognitive network*, which, at the time Cillier's paper was published in 1998, was fairly rudimentary, but which has now, thanks to the idea of artificial intelligence (Thomas et al. 2006), evidenced many functionalities. A cognitive network is a transposition in terms of data processing of the principles according to which a neural network functions. Such a network represents an integrated set of relationships set up between data elements that are present in a given situation and that the ethical entrepreneur sees as valid so that he/she will process them in order to reach a decision with respect to the action to be undertaken.

That kind of network is indeed "cognitive", and this is for two reasons: firstly, because of its aim—a decision has to be *constructed*—and secondly because of its capacity for *adaptation*. A cognitive network is dynamic and open-ended: its states and frontiers evolve, it reaches its own kind of equilibrium, decides on its behaviour and on how it is to be controlled; it possesses its own energy, integrates past experience and constantly updates its knowledge base. It is enhanced by previous situations that enable it to process a new set of circumstances with increased efficiency. In human beings, this involves an increase in their expertise; in artificial intelligence, that characteristic has been systematically searched for in the construction of "feed-forward networks" (Bebis and Georgiopoulos 1994), the overall efficiency of which increases in accordance with the results obtained in previous implementations. "Feedback" thus contributes to modifying the network in terms of three aspects of cognitive functioning: it increases its validity by setting up procedures that highlight fundamental items of information (indications relevant to an ethical decision); it focuses the cognitive work on a specific domain and a distinctive object (in this case, entrepreneurial ethics), thereby enabling the

eventual building-up of a database; and it restricts the expansion of the network, which "retracts" and reaches a dimension that will enable it to be put into practice, with cognitive loads that the human operator is able to manage (the technique known as "pruning").

4.7 Inferring That a Complex Network Is at Work

What indicators enable us to infer that these constructed networks are complex in nature? Three elements argue in favour of that idea:

- The intensity of the resulting effects is not in a relationship of proportionality to the elements that trigger them: this is an example of Lorenz's famous metaphor of the butterfly flapping its wings;
- The interactions are *non-linear* (Sulis and Combs 1996), thus making it difficult to predict the outcome and creating uncertainty;
- The results, weak or significant, of the same activation process depend on the initial state of the system and on the conditions encountered in the environment.

The successful construction of an ethical decision in a business or corporation depends on a number of constraints and parameters that are processed more efficiently through the establishment of global systems, which can go on evolving and are governed by networks, than through any analytical procedure. It is true that much more work will have to be done, if we are to increase our knowledge of these and characterize them in more detail; nevertheless, it is probably with that kind of perspective in mind that we should develop future research.

5 By Way of Conclusion

In this presentation, we have attempted to show that, in corporate governance, an ethical decision is the outcome of the activation of a network that brings together items of information (cognitive network) processed by an entrepreneur/decision maker. On a theoretical level, that option involves two aspects: on the one hand, constructivism (building the network) and on the other, connectionism (activating the network). In other words, entrepreneurial ethics is constructed by each entrepreneur for a given context, and cognitive activities enabling the assessment of its value result from the activation of inter-connected networks.

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The Development of Entrepreneurial Culture in a Transition Economy: An Empirical Model Discussion

Renata Osowska

Abstract

This conceptual paper will focus on the presentation of the model developed from empirical, qualitative research covering 20 years of analysis on the relationship between culture and entrepreneurship in Poland. It is aimed at proposing a comprehensive framework that describes the development of entrepreneurial culture.

In this empirical model culture is understood as a set of values and beliefs held by a social group that endorse and are conducive to entrepreneurial behaviour; while entrepreneurial behaviour is treated as an expected outcome and narrowed down to opening the company. The model proves that the differentiation between entrepreneurship (behaviour) and entrepreneurs (who demonstrate this behaviour) needs to be recognised in future research.

The case of Poland offers a historical example, which can shed more light on the process of cultural change and the role of entrepreneurship and entrepreneurs in the development of entrepreneurial culture. In the case presented, the behaviour of entrepreneurs has been identified as the key factor leading to further development.

Keywords

Entrepreneurial culture • Empirical model • Cultural change • Poland

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1 Introduction

Although the general literature on entrepreneurship does not devote much space to strictly cultural issues, over time a consensus was established that culture has a great impact on entrepreneurship within society (George and Zahra 2002). It could be argued that all individuals' personalities and behaviours, political or legal systems, economic conditions, and social mores originate from the national culture around them (Berger 1991). Therefore, researchers such as Lee and Peterson (2000) have proposed the development of a comprehensive model of entrepreneurship under a cultural umbrella. Nevertheless, Hayton et al. (2002) in their broad review of empirical studies examining the associations between national culture and entrepreneurship, highlighted many conceptual and methodological obstacles, which still needed to be overcome.

Despite increasing empirical interest in the topic, the limitations in assessing the relationship between cultural values and entrepreneurship remain clear (Thurik and Dejardin 2011). In most research, there is an issue with the low amount of aggregate data available, which makes it difficult to assess which cultural variables have a tangible effect on entrepreneurship. Nevertheless, the cultural context is important in understanding how and why entrepreneurship happens and who becomes involved. Thus, if a society wishes to understand the behaviour and choices of its individuals and how to shape these preferences, it needs to look at the population, and at its culture (Hull 2003).

In this paper entrepreneurial culture will be defined as a set of commonly shared values and beliefs, which shape an 'expected' behaviour (Osowska 2010; Hayton et al. 2002). Applying this definition will enable the author to focus on those key dimensions of culture that can identify a causal effect between culture and entrepreneurial behaviour, which (based on the consistency in sampling conducted over time) will be understood as opening a company (in this case, an SME). Furthermore, a qualitative and pragmatic temporal approach has been chosen in order to observe the causality between entrepreneurial value, beliefs, and behaviour. Hence, it has been assumed that the co-evolution of culture and entrepreneurship can be analysed by looking more closely at the prevailing values and beliefs as representations of culture, and viewing start-up behaviour as the entrepreneurial individual's response to them. Therefore, the relationship between national culture (a collective-level construct) and start-up behaviour (an individual-level construct) will be acknowledged.

For many studies (e.g. Roland 2004; Portes 2006; Williams 2007), cultural change (especially in terms of values) is assumed to be very slow. However, sociologists admit there may be circumstances under which the cultural values are prone to faster change. An example of such an event is the collapse of Communism in the countries of Central and Eastern Europe (CEE) in 1989. This change was strongly connected to systemic and economic transformation and therefore provides evidence from both cultural and economic perspectives. The analysis of this environment provided a vast amount of data, which permitted a

creation of a comprehensive model of entrepreneurial culture development, which will be discussed in this paper, with particular focus on the case of Poland.

The structure of this paper is as follows. First, it introduces an empirical model of cultural change derived from the results of the research conducted in Poland (Osowska 2014). This model is then discussed in the following subsections, focusing on: the actors and forces of cultural change, and the identification of the direction of that change. Next, Sects. 3 and 4 recognise the role of culture and entrepreneurship in the overall process. The presentation of the model also expands upon numerous prior studies for an exhaustive explanation of its applicability. Section 5 focuses on the meaning of entrepreneurship, while Sect. 6 expands on the contribution to knowledge and the final Sect. 7 lists areas for further exploration of the model presented.

2 The Model of Cultural Development/Change Mechanism

Even though the modelling of complicated processes is a challenging task and may involve a classic trade-off of factors like simplicity, accuracy and generality (Weick 1979), the use of a soundly constructed model helps to better understand real-life situations (Bygrave 1989). The empirical model developed during the study performed in Poland differs substantially from others, as it shows the processes of interaction and the causal relationship, which exist between entrepreneurship and selected cultural variables over time. Furthermore, by focusing only on those elements of culture related to entrepreneurship, the model makes it possible to observe the process of cultural change in a dynamic way. In contrast, other models focus either on more general cultural change (e.g. Portes 2006) or on treating culture as an element of the environment (e.g. Williams 2007) without a clear definition of the concepts that had been applied.

In the research conducted, values and beliefs were treated as elements of social perception, whereas behaviour was taken to represent the individual action of each human. This approach allowed for investigating the social reality whilst developing an understanding of the start-up experience from the perspective of both individual entrepreneurs and society. Furthermore, each of the methods selected was focussed on different elements of entrepreneurial culture from the definition applied. Unless otherwise stated, all values were derived from the analysis of 129 newspaper articles, beliefs from eight public opinion surveys, and the findings concerning behaviour were drawn from 30 interviews. All data was sampled from the years 1990, 2000 and 2010. This study was built on an embedded case study methodology bringing together qualitative and historical/longitudinal data analysis. The multi-method and multi-level approach allowed for the triangulation of qualitative data, providing complementary levels of analysis.

2.1 The Empirical Model Description

The study conducted in Poland (Osowska 2014) permitted the construction of an empirically based model of cultural change in the setting of a transforming society, which also can be widely applied to different settings. The main framework of this model is based on the definition of culture as representing a set of values (2.3) and beliefs (2.2) held by a social group that endorse and are conducive to entrepreneurial behaviour (2.1). Thus values, beliefs and behaviour are used as key elements of entrepreneurial culture, where interactions between social and individual perceptions framed the entire concept of entrepreneurial culture development and helped to assess the role of culture and entrepreneurship/entrepreneurs in constructing entrepreneurial culture in Poland. Individual perception starts from the individual behaviour of entrepreneurs, while social perception originates from social value. In this construction, beliefs act as moderators between both values and behaviour (see Fig. 1).

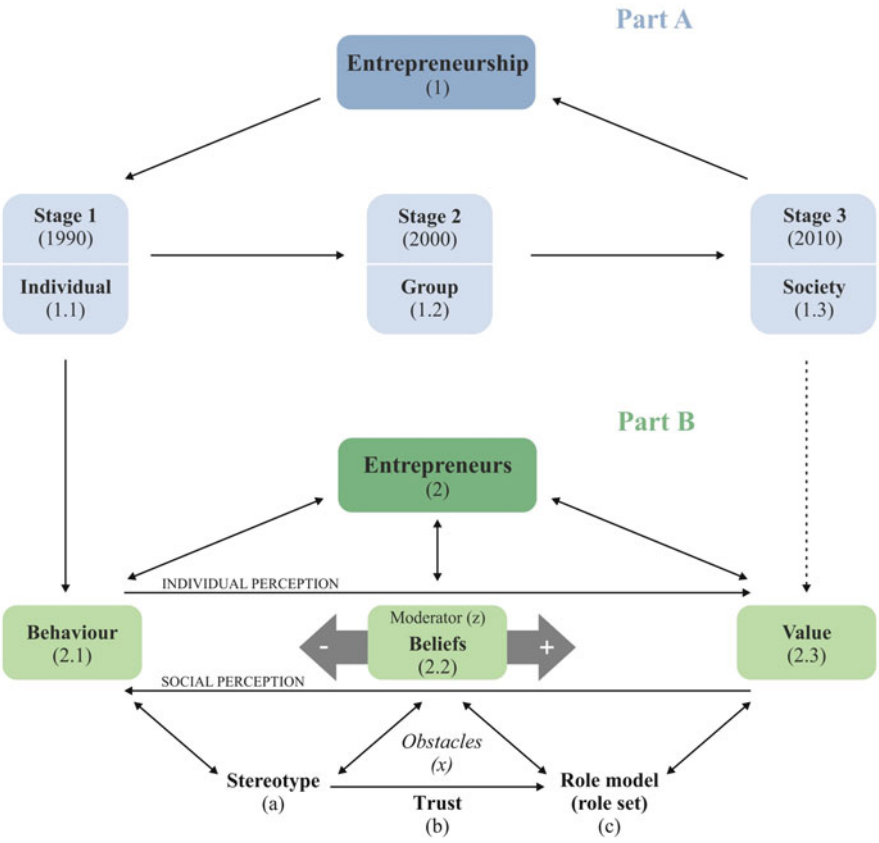

Fig. 1 Cultural change mechanism model

This model is divided into two parts (A and B). Part A focuses on the value and recognition of entrepreneurship (understood as behaviour). Part B explains the role of entrepreneurs in the process of cultural change. Both parts of the model are connected to each other by two arrows, one of which is dotted, suggesting that the transmission of social value perception between entrepreneurship and entrepreneurs was still missing in the case of Poland.

2.2 The Empirical Model Presentation

The arrows in Fig. 1 indicate the movements and interactions between each element of the model, and are discussed in this section, together with the research findings and the relevant literature, with regard to the actors/ forces of change, the role of culture and the role of entrepreneurship/entrepreneurs.

2.2.1 The Actors/Forces of Change

The model (Fig. 1) presents the actors and forces of change in the part A related to entrepreneurship, which shows its three stages of development and the actors of change. The figure indicates that during each stage, different entities introduced and followed the change, beginning with individuals and finishing at the social level. Moreover, the research, as shown in the model, has demonstrated that over the 20 years of the study period, the change in the cultural perception of entrepreneurship in Poland has progressed from adopting an individual perspective (Fig. 1; 1.1), towards that of a group (Fig. 1; 1.2) before moving on to a social perspective (Fig. 1; 1.3). In addition, this part of the model also compares the effects of systemic transformation and EU accession in order to investigate the direction of the cultural change, which was imposed by changing political and economic conditions in Poland.

When analysing the change mechanisms, it could be observed, based on the findings, that at the beginning of systemic transformation in 1990, the main change occurred due to the elimination of normative constraints, which had previously made private entrepreneurship difficult under the communist system. This enabled entrepreneurs to prosper (Fig. 1; stage 1). Thus, the systemic transformation enabled individuals to change their career paths and their new behaviour expressed itself in starting up private companies, because the specific conditions that had occurred as a result of the transformation enabled the rapid socio-economic promotion of those who decided to change their behaviour in an entrepreneurial way (Fig. 1; 1.1). Moreover, the examples derived from 11 interviews conducted in the Lower Silesia Region with the entrepreneurs who started their businesses during that time suggested that, although the motivation of individuals was varied, entrepreneurs could generally be regarded as the actors of cultural change in this period. By introducing a new type of economic behaviour, they influenced both the values and beliefs of their society (hence the arrow in Fig. 1, linking part A to part B in terms of behaviour).

The study also confirmed that, against a background of generally hostile attitudes to small businesses, entrepreneurs exhibited scepticism towards the national government's ability to support (or simply to desist from interfering with) private business development, thereby at the same time demonstrating confidence in their own abilities (Aidis et al. 2008). Thus, by the year 2000 (see stage 2 on Fig. 1), entrepreneurs could be regarded as a separate group in society (Fig. 1; 1.2). Moreover, during the time of transition, this group developed and applied specific 'strategies' to compensate for the environmental deficiencies (Gardawski 2001; Welter and Smallbone 2003), including a strong reliance on informal networks and the adoption of various 'evasion strategies', which in turn strengthened the negative stereotype and to some extent closed the group off from society (Fig. 1; 1.2). It can be concluded that, although entrepreneurs managed to introduce a change in the pattern of 'expected' behaviour (Fig. 1; 2.1), the lack of fundamental free-economy business values (Fig. 1; 2.3) resulted in negative social beliefs (Fig. 1; 2.2) being held about them. This also led to the evolution of a negative stereotype (Fig. 1; a), which was inherited from the country's communist past.

In comparison to the systemic change and the time of transformation, Poland's EU accession in 2004 initiated different changes in the value of, and beliefs about, entrepreneurship. Through integration with other EU countries, the phenomenon of entrepreneurship became a societal concept (see stage 3 on Fig. 1). Furthermore, the incorporation of European policies also affected entrepreneurs' behaviour. Polish entrepreneurs needed to adapt to the European single market environment by incorporating the necessary behavioural patterns to open and run businesses in changing circumstances. Moreover, the results show that the most important impact of EU membership was to diminish the financial barriers to market entry. It is also possible that the increased visual social legitimation of entrepreneurship (Etzioni 1987), also observed in the dominant codes (Habiby and Polak 2012), created a platform for future development. Thus, at the last stage (Fig. 1; stage 3), entrepreneurship could be regarded as an example of social integration, which has helped the culture to adapt to its changing environment.

Nevertheless, even though the importance of entrepreneurship in the EU helped to develop a pro-entrepreneurial attitude in Poland after accession, the recognition of entrepreneurs as prospective role models by nascent entrepreneurs was still rare, thus disturbing the continuation of previously established entrepreneurial behaviour. The time-oriented results (Osowska 2014) suggest that entrepreneurial identity had to be created from scratch, which implies a very weak entrepreneurial identification with other entrepreneurs over time, and the lack of a suitable role set (Fig. 1; c).

3 The Role of Culture

In regard to the role of culture in enterprise development the cultural change model shows that most of the time, cultural values (Fig. 1; 2.3) and beliefs (Fig. 1; 2.2) can be treated as the main determinants enforcing or shaping individual behaviour

(Fig. 1; 2.1) through the social perceptions of beliefs and common values. This is related mainly to the ways in which culture is acquired by the individual; by transmitting certain values and beliefs between individuals, it can have a significant impact on individual behaviour and decision processes. In this sense, the definition of culture as a set of values and beliefs, which imposes certain behaviour on individuals in society, has been used to assess the role of culture in entrepreneurship. Moreover, this research has focused on analysing whether or not these elements meaningfully interact and, if so, examining the results of that interaction. Thus, entrepreneurship has been operationalised as an entrepreneurial (start-up) behaviour, which reflects the existing values and beliefs of society and which, based on the empirical findings, has been developed into a highly complicated framework describing the development of entrepreneurial culture in Poland.

3.1 The Meaning and Development of Entrepreneurial Culture: A Polish Case

The findings primarily acknowledged the existence of entrepreneurial values under Communism, which were also visible in networks from that time and in role models which existed prior to 1989. Notwithstanding these, the study indicated that, in the context of a transition economy, an important difference can exist between the social acceptance of owning a business and the general public's evaluation and appreciation of an entrepreneurs' contribution to society. In this respect, the empirical results proved that the social acceptance of running one's own business is not related to the social recognition of the personal contribution of entrepreneurs. This highlights the fact that Polish entrepreneurial culture was characterised by a division between a positive social evaluation of entrepreneurship (Fig. 1; 1) and a negative social evaluation of entrepreneurs themselves (Fig. 1; 2). Given that these social attitudes were also characteristic among the interviewed entrepreneurs, the entrepreneurial culture may hinder the development of productive, long-term entrepreneurship in favour of short-term activities, which are purely profit oriented (including rent seeking). This may well discourage individuals who would otherwise be willing to pursue a productive entrepreneurial path (Baumol 1990). Although similar observations related to the strategies adopted by entrepreneurs have been presented in the literature (e.g. Gardawski 2001), what is critical in the context of this study is that these aspect of social attitudes were even more visible after another decade had passed. Thus, further results confirm that the values and beliefs of society can shape entrepreneurial behaviour, which in turn can have an impact on the shape of entrepreneurial culture. Furthermore, the recognition of differentiation in attitudes towards entrepreneurship and entrepreneurs could also have been influenced by the environmental precondition.

3.2 The External Environment Perspective

Numerous authors, such as Gnyawali and Fogel (1994), Hayton et al. (2002) and Shane (2003) have already stressed the importance of social acceptance to, and wide support for, entrepreneurial activities. In line with this view, consideration should be given to the concept of a suitable environment for entrepreneurship (see Fig. 1, part A on the effect of the environmental change).

While this topic overlaps with the notion of entrepreneurial culture, the environment for entrepreneurship implies the existence of external factors that influence the number of start-ups. This is an interesting proposition, but it is difficult to discuss conceptually in detail, because evidence is often time- and place-specific. Although selecting a particular aspect of the environment and studying its impact on entrepreneurs might provide some interesting outcomes, incorporating these results into a universal conceptual framework is rather difficult, because of the relevance and characteristics of certain factors (such as systemic transformation (leading to stage 1, see Fig. 1) and EU accession (leading to stage 3, Fig. 1)). Moreover, the influences of different contexts related to these factors are complex, without having to take into account that they complement and often contradict each other. The findings of the study, for instance, proved the ineffectiveness of the institutional influence on the development of entrepreneurship (Manolova and Yan 2002) only during the second stage (Fig. 1).

Furthermore, the limitations in the prior literature (related mainly to a lack of discussion comparing environmental shifts or an explanation of which attitudes should be examined) need to be acknowledged. These limitations formed an even greater drawback when investigating the development of entrepreneurial activities in transition economies, because of the possibility of the simultaneous persistence of norms and beliefs originating from the communist past alongside those emerging during the transition and after EU accession and, ultimately, their co-existence with the norms and beliefs, which characterise every society. Consequently, the results show that the future of the environmental approach in the field of entrepreneurship lies in place- and time-specific studies, which address place- and time-specific challenges. Nevertheless, such an attempt adds depth to the understanding of the whole phenomenon and certainly has implications for the way that the entrepreneurship is conceptualised. The main argument of this paper is that society (as has been shown in the specific case of Poland) is not culturally independent from its context but, rather, that it shares similarities with the wider context within which it is embedded.

The results of research also imply that the prior literature (especially studies dealing with the time of transition in Poland) has under-valued or even in some cases ignored the varied social perceptions of different types of entrepreneurs who originated in different periods. It is evident that such a disparity might exist because of significant differences in the social evaluations of entrepreneurs' behaviour and the evaluations of entrepreneurs' characteristics over time. Paradoxically, it seems that in Poland, the increase in the value of entrepreneurship (Fig. 1; 1) was gained due to strategies affecting entrepreneurs' (Fig. 1; 2) recognition and status.

4 The Role of Entrepreneurship: Entrepreneurs

The model also shows that, despite the unquestionable contribution of entrepreneurship to the Polish economic transition, the beliefs that surrounded this phenomenon have created a culture that, most of the time, did not support or endorse entrepreneurs. Moreover, many of the social attitudes prevalent in Poland were still deeply rooted in the old system (e.g. that of a dependency culture). Therefore, the model proposes that, in order to assess the impact of cultural attitudes in the context of entrepreneurship in a transition economy, it is vital to consider how potential entrepreneurs responded and adapted to the existing environment.

An investigation of the impact of the surrounding socio-cultural environment (Shane 2003) on prospective entrepreneurs requires insight into how their motivations may be influenced by existing entrepreneurs. On a more general level, consideration should be given to the concept of the cultural environment within which entrepreneurs act (see Fig. 1, part B). Such arguments certainly draw attention to the issue of possible causes of social attitudes towards entrepreneurship and entrepreneurs. The evidence from the research suggests two origins of the prevailing negative stereotype. Thus, the model focuses mostly on the role of this stereotype in influencing the perceptions of entrepreneurship. It is argued that the behaviour of entrepreneurs may play an important part in identifying the missing elements of successful cultural change adaptation, based on the structure provided by Portes (2006).

4.1 The Dominant Stereotype

It could be said that a positive stereotype, as well as the high status of the entrepreneur in society, boosts the legitimisation of entrepreneurial behaviour. Based on Fig. 1, it can also be argued that stereotype (Fig. 1; a) of the entrepreneur, primarily in the context of the relevant ethical values (Fig. 1; 2.1), can decrease or increase the personal and institutional levels of trust (Fig. 1; b). Finally, the positive stereotype of the entrepreneur strengthens the possible exchange of entrepreneurial role models (Fig. 1; c). Thus, attitudes to trust (Fig. 1; b) and to role models (Fig. 1; c), have been linked to the common stereotype (Fig. 1; a), in the Polish setting. Looking at this from the transition perspective, another negative stereotype has been formed by the behaviour of those entrepreneurs (Fig. 1; 2) who opened their companies after the systemic change. Thus, the results which arise from the study suggested the evolution of a negative stereotype (Fig. 1; a), which after the systemic change affected the level of trust (Fig. 1; b) between individual entrepreneurs as well as the development of entrepreneurial role models (Fig. 1; c).

4.2 The Role of a Role Model

A role model could be defined as an individual who sets a good example and who may stimulate or inspire others to make certain decisions and achieve certain goals (Basow and Howe 1980; Shapiro et al. 1978). The presence of entrepreneurial role models is an important factor in the development of entrepreneurship, because many of the aspects of knowledge, skills, and practice required for entrepreneurial behaviour (see Fig. 1; 2.3) are often transmitted horizontally from entrepreneurs (Fig. 1; 2) to other members of society, who may in turn become entrepreneurs themselves.

From the Polish perspective, the negative beliefs (Fig. 1; 2.2) about entrepreneurs were mostly influenced by the negative stereotype (Fig. 1; a) on the one hand, and a lack of interest in mentoring within a network, which could be influenced by the lack of trust (Fig. 1; b) among entrepreneurs on the other, resulting in the underdevelopment of the concept of an entrepreneurial role set (Fig. 1; c). What is more, although the CBOS[1] report (2009) suggested the appreciation of a role model 'role' in everyday life, this approach did not seem to be applied to entrepreneurial behaviour itself.

As has been argued, the perception of the legitimacy and attractiveness of running a business, shared between entrepreneurs and non-entrepreneurs, may be flawed due to the negative stereotype (Fig. 1; a) and the lack of trust (Fig. 1; b) felt towards entrepreneurs. The empirical evidence concerning the perceived consequences of the prevalent social attitudes shows that such a message would most probably discourage others, or would, at any rate, lead to negligible entrepreneurial identification. Moreover, the low level of occupational prestige of a 'typical entrepreneur' could affect the potential positive impact of existing entrepreneurial role models on the rest of society. In this sense, a more detailed analysis of the stereotype of Polish entrepreneurs (Fig. 1; a) leads to somewhat ambiguous conclusions. On the one hand, the wealth, influence and good education that characterise the stereotype are the factors that are most likely to encourage non-entrepreneurs to exploit opportunities. On the other hand, the remaining aspects of the stereotype and the behaviour of entrepreneurs seem to play an opposite role, that is, one of discouragement. In particular, when we analyse the results of surveys (e.g. CBOS 2010), it is clear that the stereotype is quite different from the reality of an ordinary entrepreneur. This could also be influenced by a false recognition of role models (Fig. 1; c), leading to the introduction of an erroneous negative role model by the media. This lack of recognition may also be the missing perspective, which could increase both the value of entrepreneurship (Fig. 1; 2.3) and entrepreneurial best-practice development.

[1] CBOS—Public Opinion Research Centre

5 The Meaning of Entrepreneurship

As has been illustrated by the empirical model and the previous discussion, the negative impact on enterprise culture in Poland cannot be entirely attributed to factors beyond the entrepreneurs' sphere of influence. In this sense, the results of this study point towards the role that entrepreneurs themselves can play in order to improve social attitudes (see model on Fig. 1, part B). For example, the existence of a culture of 'wheeling and dealing' was an outcome of many factors, among which the most evident were the cultural legacies of the past and patterns of behaviour, which may have been prevalent during the time of transition.

According to Casson (1995), trust facilitates cooperation between entrepreneurs and is the most important aspect of business culture. It can be developed by the establishment of routines, leading to collaboration. Trust also helps to eliminate opportunistic behaviour and misbehaviour, as it supports the establishment of enterprise networks, which can also be understood as a community of practice. Many aspects of entrepreneurship rely on cooperation in the social milieu. Hence, trust is an essential prerequisite for entrepreneurship, but trust throughout Polish society was severely damaged during and after the command economy period, and since then it has only gradually recovered (CBOS 2012).

It is argued in this model that, in the contemporary context, entrepreneurs in Poland can play an active role in fighting old and destructive habits, which had, as the empirical results made clear, been widespread. Such action needs to be undertaken by individual entrepreneurs and by those representing entrepreneurs, thereby leading to the development of best practice in entrepreneurship. The introduction of basic business ethics in the shape of a business etiquette, which was particularly observable among the young organisations approached in the year 2010, could serve as a good example of creating a community of practice.

Based on the role model and trust arguments set out above, it is furthermore proposed that entrepreneurship could serve as an example of the relationships, which have persisted within a transforming society. The analysis of the institutional perspective with regard to the fieldwork also suggests that when entrepreneurship becomes acknowledged as an institution, it plays an important role in affecting social perceptions, thereby improving the development of entrepreneurial culture. In 2010, having a company was treated as valuable and natural to most of the interviewees, suggesting that social acceptance for this behaviour had been established. Nevertheless, the continuity perspective suggested by Brandl and Bullinger (2009) was still missing, which could be ascribed to the persistence of inaccurate beliefs regarding, and stereotypes of, entrepreneurs.

The idea that entrepreneurship affects culture by helping to shape other institutions has been confirmed by the process of entrepreneurial strategies of adaptation. The environmental change in Poland was a very challenging and comprehensive one, and the interplay between entrepreneurial behaviour and the external environment during the transition stage suggests that entrepreneurship helped the country's culture to undergo the transition. Nevertheless, there remains an absence of the concept of real-life role models in the start-up process

environment, leading to the need for a role set and community development, which could link both perspectives together in terms of value transmission between entrepreneurship and entrepreneurs (for a representation of value transmission, see Fig. 1).

6 Implications of the Model and Its Contribution to Knowledge

The main contribution of the empirical model presented is its temporal approach, which, considering the accompanying circumstances, can give new insight in the understanding of entrepreneurial culture development, showing how entrepreneurship takes different forms in different time periods, with the use of concepts that can explain and/or interpret those changes. The theoretical implications could be organised in two main themes: the role of culture and the perception of entrepreneurship.

6.1 The Role of Culture

So far, the inconsistent identification of cultural characteristics or treatment of cultural variables as moderating entrepreneurial outcomes (Hayton et al. 2002) have prevented existing theories from understanding the temporal relationship between culture and entrepreneurship. There has also been a failure to identify the interactions among cultural dimensions and to construct a conception of culture, which allows for a greater complexity. By developing the model, it was possible to observe the process of change and discover the key elements of adaptation. Based on the context applied, this is related to beliefs. In fact, Polish entrepreneurs were strongly influenced by certain fixed patterns and stereotypes present in Polish culture, which 'interfered' with the implementation of a cultural vision of enterprise.

By observing a society in transformation, it was possible to detect the process of cultural change. This gives the potential to expand the general understanding of the development of entrepreneurship and to portray the prospective reaction within the existing culture, which should also be considered in the case of any new policy introduction aimed at entrepreneurs.

6.2 The Perception of Entrepreneurship

A further contribution of this model is that it indicates the significance of the recognition of entrepreneurs, who introduce entrepreneurial activities through their behaviour. It was also shown that the changes in values, beliefs and behaviour underwent different paths of development from one another, and that this lack of convergence resulted in a differentiation of attitudes towards entrepreneurship and

entrepreneurs. Moreover, the process of contrasting secondary evidence with theoretical concepts also indicated that the literature concerning enterprise culture should take into account the difference between social perceptions of entrepreneurs' conduct and their actual personal characteristics. Although the goals of entrepreneurship perceived by society were deemed to be of high value, the means through which entrepreneurs achieved their goals did not share this esteem. These findings suggest that the differentiation between entrepreneurship and entrepreneurs might hinder further adaptation.

It has also been shown that entrepreneurship could help culture to smooth the inevitable problems of transition, but that entrepreneurs need to be considered as an important part of cultural transmission affecting the development of entrepreneurial culture. Even though Poland's EU accession introduced changes, by moving the whole concept to the societal perspective, entrepreneurial activity still lacked an impression of continuity. This finding is associated with a slower adaptation of beliefs about entrepreneurs, including negative stereotypes. In general, this conclusion is consistent with the perspective of institutional economics, as exemplified by North (1990). While initiating dramatic changes in formal institutions may be difficult, implementation at one level can be relatively quick. It is far more difficult to get those formal institutions working well, because they are conditioned by the prevailing social attitudes. Entrepreneurship may therefore provide an interesting example of that phenomenon, creating an exciting avenue for institutional entrepreneurship (DiMaggio 1988).

7 Summary and Further Research Recommendations

The model presented in this paper contributes robust developments to existing theory by providing significant evidence to the continuing debate about the meaning and development of entrepreneurial culture. However, when considering the concept of cultural transition in a wider cultural context, some areas for further research can be proposed, and the suggestions which follow for the direction of future research mainly originate from the limitations of the empirical study.

First, the scope of this study can certainly be expanded to other settings in terms of the applicability of the chosen definition of entrepreneurial culture and to test the proposed model of cultural change. Following such a line of enquiry, emphasis could be put on other countries, including those in Western Europe, which are characterised by a long-standing private enterprise tradition. It would be interesting to identify their level of entrepreneurial culture and assess the role of their entrepreneurs. The adoption of such a perspective would permit an examination of the contrast between the attitudes of the society and the attitudes of entrepreneurs between various countries and an investigation of which of the factors can be attributed to the communist legacy, which to EU integration, and which seem to be more universal.

Second, in order to observe the further development of entrepreneurial culture in the Polish setting, a recreation of the approach presented within this study after

another decade is recommended. As this research has demonstrated, the human aspect of entrepreneurship is constantly evolving. Thus, future studies of this kind will provide new and updated snapshots of entrepreneurial culture in Poland. It will therefore be possible to trace the impact of this factor on the socio-economic development.

Third, while this study has focused only on the analysis of SMEs, a gap remains in the literature concerning more direct comparisons between perceptions of big business, SMEs and self-employed people. Such a study might shed light on the extent to which the patterns and problems of entrepreneurial behaviour occur across different levels of business. This might in turn provide insight into how the particular relationships between different sizes of business have influenced the development of entrepreneurial culture. This kind of study would also take the concept of entrepreneurial culture in a new direction, by investigating entrepreneurship at different levels.

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Business Angels, Social Networks, and Radical Innovation

Catherine Deffains-Crapsky and Peter G. Klein

Abstract

Innovation is critical for firm and national competitiveness. However, financing innovation is increasingly difficult for early-stage, high-risk projects, as banks and venture capital firms are focusing on later-stage, less risky projects. To fill this gap, US and European entrepreneurs are turning for seed funding to Business Angels (BAs) and Business Angel Networks (BANs). We describe the role of BAs and BANs in the US and Europe from the perspectives of entrepreneurship theory and social network theory. We show how BANs can strengthen ties between entrepreneurs and individual investors under highly uncertain conditions. We also study the links between formal and informal private equity finance, raising wider questions about the funding and performance of clusters of innovation. Finally, we suggest that differences in network characteristics, rather than the availability of projects, explain the large differences in the size and performance of the BA sectors in the US and Europe.

Keywords

Innovation • Social networks • Uncertainty • Venture capital • Business Angel

JEL codes

G32 • M13

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1 Introduction

Entrepreneurship and innovation are vital to a globalized economy in which intangible capital plays an increasing role in value creation. Schumpeter (1911) famously linked entrepreneurial innovation to economic growth, and the burgeoning entrepreneurship literatures in economics, management, and finance testify to the growing importance of entrepreneurship among scholars and practitioners. Moreover, while Kirzner's (1973, 1985, 1997) influential work sharply separated the entrepreneur from the financier, more recent work assigns the entrepreneurial qualities of alertness, innovation, and judgment to investors as well as inventors and proprietors (Kaplan and Strömberg 2003; Foss and Klein 2010, 2012). Hence a dynamic, entrepreneurial economy needs a reliable supply of funding for highly risky, early-stage projects. In this context the role of private equity, early-stage venture capital in particular, becomes critical.

As the venture-capital sector has grown over the last few decades, as discussed later, venture capitalists have been devoting relatively less attention to the earliest-stage projects, tending to focus on activities and firms that are farther along in the development process. Increasingly, very early-stage projects are being funded by wealthy individuals, often former entrepreneurs, who take equity stakes and play active roles in the management and governance of their portfolio companies. These "angel investors" or "business angels" (BAs) are playing an increasingly important role in the establishment, growth, and evolution of new enterprises. As such, they are a key aspect of an innovative, successful market economy.

While the BA sector is attracting increasing attention (Wilson 2011; De Clercq et al. 2012), there is little systematic evidence on how it works. How do angels select projects? How do prospective founders of new ventures find funders? How do angels interact with each other? An important stylized fact about angel investing is that more and more BAs are part of a Business Angel Network (BAN). Moreover, many observers have identified an "equity gap"—also called the "valley of death"—between the early-stage seed capital provided by friends, family, and the founder's personal savings and the professional, profit-seeking venture capital needed by businesses in the priming or launching phase. This problem exists throughout OECD countries (Wilson 2011; EBAN 2010) and was exacerbated by the financial crisis (Litan and Robb 2012). Can a larger and stronger BA sector help fill the equity gap?

This paper examines the nature and role of angels and angel networks from the perspective of social network theory. Does a viable BA sector increase the likelihood that good projects can be financed and developed through the financing chain? If so, how are BA groups best organized to facilitate innovation? Do BA networks fill a "structural hole" between firm founders and private equity funders? Because we are ultimately interested in innovation, and the US economy appears to be more innovative than the European one, our analysis includes a comparison between the US and Europe, especially France. Concerning the "equity-gap" as a structural hole, we suggest that differences in network characteristics, rather than the availability of

projects, explain the large differences in the size and performance of the BA sectors in the US and Europe.

The paper is organized as follows. First, we describe different sources of uncertainty associated with angel finance across different project stages. Second, following Ferrary (2001, 2006), we examine the role of social networks in financing innovative projects through formal and informal venture capital (BAs). We show how exchanges of information within the networks can determine which projects are financed. We focus on the particular role of BAs in the financing chain. In the third part of our research we investigate both the organization of BAs through setting up BA networks and their integration into an innovation network. We conclude with some proposals for future research.

2 Radical Innovation in an Entrepreneurial Context: Financing with Shareholders' Equity

"Innovation" can describe several different business activities including the introduction of new products and services, the use of new production methods, the opening of new sources of supply, the opening of new markets, and the establishment of new business practices (Schumpeter 1911); it can be sustaining or disruptive (Christensen 1994), modular or systemic (Baldwin and Clark 2000), or, more generally, radical versus incremental. We focus here on projects involving really new products or radical changes, the nature of which can impose asymmetric information between entrepreneurs and investors that seems to be involuntary.

The main characteristic of such a project is a very uncertain, not simply risky, return on investments (Knight 1921).[1] The problem of the asymmetric information between the potential financial backers and the project carriers is further heightened by the need for confidentiality (innovation is a strategic asset which should be protected) and the importance of the non-material component, which rarely figures into the value of the business in case of liquidation.[2] Indeed, by their nature these are assets about which there is typically no historical information, either in terms of quality or quantity. Moreover, the initial stages of a business project often generate negative returns and the greatest part of the project's value is embodied in intangible assets and human capital.

During the launching phase, financial needs are particularly great.[3] But the funder is looking at a highly uncertain, illiquid investment that might generate a high return. Early-stage funding from family and friends is often critical, but

[1] This uncertainty comes from the difficulty at this time ($t = 0$) in establishing all the development alternatives possible and determining the probability of each.

[2] Startup funding must deal with the same problems facing business finance more generally, namely agency costs and other problems associated with asymmetric information (Denis 2004). These problems are exacerbated during the creation phase.

[3] Grants and subsidies include explicit transfers such as US Small Business Innovation Research grants and the various local and regional grants and subsidies provided in Europe, as well as

limited in amount, even though they can help the innovator with brainstorming and partnership research fees. Highly illiquid, firm-specific assets are also difficult to finance with debt (Williamson 1988; Mondelli and Klein 2012). Innovative startup firms are thus dependent on self-finance (e.g., "bootstrap" funding) or, for larger projects, external equity.

External equity finance comes into play after grants and subsidies have been exhausted and involves different participants. In terms of a project life cycle, the first capital investors are inner-circle shareholders, that is family and friends ("love money").[4] They finance the pre-launch phase, which involves feasibility studies (R&D and economic and financial studies). As we claim above, their help rapidly runs dry. Next, while cash flow is typically still negative, BAs make their appearance and finance the first phase of development. This is what we call the first round of financing. If the project is viable, greater growth should be financed quickly (12–24 months). It is generally only at this point that venture capital funds begin to participate in the financing of the business. In the next phase the project has become a business approaching its maturity and now needs to make finance decisions just like any other business to ensure its own development and durability.

In order to stand the test of time and move through each of these stages, a project must first be identified as capable of creating value at the beginning of its launching phase. Although financial evaluation is part of the financing process, it does not seem to be a part of the identification process. The information given by the innovator is subjective and may not be reliable. Indeed, evaluation using traditional methods such as discounted cash flow (DCF) analysis, designed for analyzing mature companies with stable cash flows, has proven difficult due to the uncertainty surrounding new projects. The discount rate is the cost of capital, which is difficult to estimate and would in fact be a minimum required rate of return. This minimum rate would be high compared to a traditional cost of capital of a mature firm and the actual value would be diminished. Thus applying the DCF method to innovative projects evolving in an uncertain environment may give a distorted view. Although evaluation via real options seems more promising, it remains insufficient particularly when applied in a purely financial approach. This also requires models which can quickly become very complex and require a great number of parameters to be estimated. Lastly, although the evaluation of simple options is supposed to use a single rate without risk, evaluating the whole project involves determining a discount rate including a risk premium (Deffains-Crapsky 2002, 2010).

Although finance theory helps us gain a clear definition of the characteristics of innovative projects and justify their mode of financing, a purely financial approach obscures how a project is identified by a financer and what can allow a continuous financing chain without equity gaps. For this, we need a better understanding of the

indirect assistance provided by publicly funded or university provided incubators and research parks.

[4] A popular aphorism describes these as the "three Fs" (friends, family and fools).

behavior and expectations of the entrepreneur, and the formal and informal venture capital markets.

3 Participants' Behavior and Expectations of Formal and Informal Venture Capitalists

The quality of the business model is extremely important when seeking finance and studying this is part of the identification process. The specific nature of an innovative project is such that the social network appears a necessary yet insufficient prerequisite.

3.1 The Role of Social Networks in Entrepreneurial Finance

Social network theory is widely cited in the literature on entrepreneurship and innovation (Hoang and Antonic 2003). Certain researchers are interested in the traits of the entrepreneur and their ability to mobilize social networks. Others analyze the impact of certain structures auxiliary to such projects and their influence on mobilizing social networks. In this second group, however, very few studies have looked at the role played by financial investors during the launching phase.

In the field of entrepreneurial behavior, the works of Granovetter (1995), Coleman (1988) and Burt (1992) are central. Networks of entrepreneurs, funders, and other stakeholders are critical for information sharing. The creation of the enterprise is thus explained through the behavior of the entrepreneur. This strand of literature also explores the role of environmental factors, such as government assistance in building the social network.

The second stream of analysis considers social networks, as a form of organization (Powell 1990), which influences the coordination of economic players and the circulation of assets. In the context of BAs funding early-stage ventures, we must consider the dynamic of the information exchanges which condition the decision to finance using external shareholders' equity, and the connection between financial investors and the innovative project entrepreneur.

Financing the pre-launch phase and especially the launching phase appears to be fundamental in a reticular analysis of financing innovation. Potential providers of funds rely on different networks, professionals, and acquaintances to collect enough information to evaluate uncertainty levels subjectively. In the face of tacit knowledge (Hayek 1945) about the project and the entrepreneur, funders rely on judgment (Foss and Klein 2012) to evaluate the different sources of uncertainty and thus form their opinion on the project in question's potential to create value. These relationships outside the investor-entrepreneur relationship are fundamental. Indeed, Ferrary (2001), based on a study of exchange within networks, states that venture capitalists will only consider a project if it is strongly recommended to them by someone within their network. In recommending a project, the members of their

network reduce the uncertainty since their action effectively evaluates the risk of the project and the entrepreneur's abilities.[5]

Once a potential investor is interested in the project, links will be activated between the investor and the entrepreneur. These links vary depending on the level of uncertainty. The first round of investment is interpreted as a "contractual system allowing an investor to create a strong connection with the business creator in order to obtain the information necessary to reduce any uncertainties" (Ferrary 2006).

When this first external finance is obtained and if the collaboration between the financer and the entrepreneur permits a relationship of trust to become established, the project can be considered less uncertain. The venture capitalist choosing to finance a given project sends a signal to the rest of the members of their network that this project is viable. A second round of financing can begin if the project is evolving positively since the first influx of finance. The links between these investors and the entrepreneur are not as strong. We note that this sequential analysis is present in the study by Larson and Starr (1993) when they explain the evolution of relationships activated in the entrepreneurial process according to the project's stage of development. This line of thought refers back to Granovetter's work (1995) on the influence of strong ties and weak ties as well as their connections via a dynamic of embedding and un-embedding with the aim of ensuring the viability of the business created.

In the follow-up to these studies, Ferrary and Granovetter (2009) propose an in-depth analysis of the different roles played by venture capital in the complex innovation network of Silicon Valley. Unfortunately, although their analysis works well with this particular American example, this is less true in Europe (particularly in France) since, for both economic and structural reasons, operators in venture capital rarely participate in the first round of financing.[6] Nevertheless, a lack of investors at a stage of development can create a break in the financing chain and then reduce the forecasts return of the project. How can such equity gaps be avoided?

3.2 The Equity Gap as a Structural Hole and the BA as the "Network Entrepreneur"

The notion of a structural hole was introduced by Burt (1992). Structural holes exist in a system where there are gaps between various subsystems (Ahuja 2000). Actors who manage to build links with each of these subunits will have informational advantages and can play a bridging role. Such actors have been described as

[5] "Reputation becomes an economic asset which individuals preserve by refusing to co-opt economic players they don't deem reliable into their networks," in Ferrary (2001). At the same time, reliance on within-network information can potentially lead to herd behavior (Parker 2008).

[6] "Closing gaps and moving up a gear: The next stage of venture capital's evolution in Europe", EVCA Venture Capital White Paper, Brussels, 2 march 2010.

"network entrepreneurs" who can benefit greatly from their privileged informational position (Burt et al. 2000). In the context of early-stage project finance, this network entrepreneur can reduce the uncertainty around new projects by coproducing relevant information which will then be transmitted to the other actors, so improving the coordination on the financing chain.

The financial gap can be considered as a structural hole because venture capital funds and entrepreneurs are essential partners in the development of innovation, though they sometimes cannot connect due to information asymmetries. Today venture capital funds are forced to focus on investments where uncertainties are replaced by quantifiable and diversifiable risks. Besides capital, the entrepreneur may need guidance and monitoring from a sponsor who knows the product and industry, who has valuable social capital, and whose embededdeness can reduce upstream and downstream uncertainties. Venture capitalists are no longer playing this role, as their own investors care only about financial returns, rather than the intangible benefits of helping new ventures (Sullivan and Miller 1996). Moreover, venture capitalists maintain several links at the same time (to diversify their risk), which hinders the creation of the strong ties needed for exchanges of private information between venture capitalists and entrepreneurs (Uzzi 1999; Ferrary 1999).

To complete the chain of financing for new ventures, this structural hole must be filled. Silicon Valley, with its dense network of complementary players, has fewer such holes. More generally, venture capitalists are at the center of innovation networks (Ferrary and Granovetter 2009). The venture capitalist is closest to all other actors and facilitates the interaction between them. In Europe, particularly in France, no one seems to be filling this central role. However, recognizing the existence of a structural hole does not tell us much about the characteristics of the agent who fills it. McFadyen et al. (2009) suggest integrating social capital and structural holes theory with Coleman's (1988) analysis of the broker's specific ties. Ferrary and Dibiaggio (2003) analyze the nature of the social embedding of the intermediary and the other disconnected actors in the same social network.

Social embedding between the intermediary and the disconnected actors is thus a first condition for an effective brokering. For McFadyen et al. (2009), the optimal structure of the links around the intermediary is a dense network that is characterized by structural holes and strong ties between the actor bridging the hole and each of the components of this network. So, by creating strong and reliable ties with the entrepreneur from the beginning of the project, the intermediary will co-create tacit information about the validity of the project and the capacities of the entrepreneur. The homophily between both actors facilitates even more the collaboration (Ferrary 2006). The embedding here is cognitive (the same interpretation of the reality of the innovative companies) and structural (transitivity and phenomenon of recommendation between the peers) (Uzzi 1996). Thanks to the intermediary, the entrepreneur sees in the person of the venture capitalist an actor sharing his concerns. More generally, the entrepreneurs, formal venture capitalists, and these new intermediaries are part of what Baum et al. (2003) call the same "small world." The intermediary has to be an actor who in his past had a similar activity or

developed very strong ties with each of the disconnected groups to play better the role of bridge.

Given the characteristics necessary for effective intermediation, the BA seems particularly well suited for the role. BAs are motivated by economic returns, but also influenced by hedonism and altruism (Sullivan and Miller 1996). BAs are often socially embedded among entrepreneurs because they often invest in limited geographical zones. The embedding with the entrepreneur is also cognitive because the BAs are themselves former entrepreneurs, and many are experts on venture capital funds or investment banks. They invest in few projects at the same time, which creates trust with the entrepreneur and allows reciprocity and sharing of relevant information.

Having justified our desire to qualify the financial gap as a structural hole and also the capacity which the BA takes on to be able to cover this hole and how, we will now describe in a comparative way the BAs and their organization in Europe and in the USA. The objective is to check how this representation meets the reality in each continent. Then it will be possible to discuss the remaining questions concerning BA organization and BANs, especially in France.

4 How Should Informal Venture Capital Be Organized?

To understand the growing importance attributed to BAs, we must first give some figures, define what they do and their motivations, as well as the measures put in place by governmental authorities and recommendations made by national associations of BAs. It is then possible to show how their presence can create or reinforce the social link between all the economic players involved. We may then look at the way they are organized internally.

Definitions of BAs vary (Ibrahim 2010), but a BA is commonly described as "a high net worth individual, acting alone or in a formal or informal syndicate, who invests his or her own money directly in an unquoted business in which there is no family connection and who, after making the money directly in an unquoted business in which there is no family connection and who, after making the investment, generally takes an active involvement in the business, for example, as an advisor or member of the board of directors." Focusing on the European context, the European Trade Association for Business Angels, Seed Funds, and other Early Stage Market Players (EBAN) defines the BA as "an entity which provides capital to one or several start-ups or businesses with strong potential for growth (and therefore becomes a shareholder in it), as well as its experience in business management and its network of contacts. This is an involvement which grows over time and takes various forms."[7] According to the US Angel Capital Association, "an angel is a high net-worth individual who invests his or her own money in start-up companies in exchange for an equity share of the businesses. In general, it

[7] Summary of private participants in informal capital risk, EBAN

is recommended that entrepreneurs work with investors who are "accredited" investors (who meet requirements of the Securities and Exchange Commission) or high net worth individual and who can add value to the company via high quality mentoring and advice."

Reading these definitions, it seems obvious that in Europe and in US the BA's central role is to create strong ties within his network to benefit entrepreneurs and that the relationship between the angel and the venture must be characterized by trust. In both Europe and the US, the informal venture capital sector is particularly important.

In all countries, there exist national angel associations who provide service to angels within their region and who represent them to policymakers, The French association France Angels, created in 2001, has given itself the objectives to promote investment by Business Angels, to represent the latter and to federate BA networks. At the end of 2012 France Angels federated 82 BA networks representing 4100 BAs having financed 352 projects totaling an amount of 40 million euros invested. In 2005, it was only 34 networks, 1600 BAs and 16 million euros invested. Although a definite progression can be noted, the total invested amount remains quite modest.[8] The largest US angels are represented by the Angel Capital Association (ACA). The U.S. market is more mature than its European counterpart and the amount invested per deal is a little larger. In 2010 there were around 75,000 BAs and 391 BANs in Europe, compared to 259,480 BAs and 340 angels groups in the U.S. (EBAN 2010). Total BA investments were 62.5 million euros in France, 426 million euros in Europe, and 20.1 billion euros in the U.S. These comparisons are in exact, however, as the definitions of BAs vary between Europe and the U.S., and the data are private and not publicly reported.

Comparing figures and innovation rankings, it appears that start-up finance is more effective in the US than in Europe, France in particular. France is ranked 16th in the world, 11th in Europe.[9] Is the problem that good projects aren't being financed, or that there aren't enough good projects? To be sure, the supply of funding is much larger in the US than in Europe, and European policymakers have proposed a number of policies to increase the total amount of available capital and the amount invested per project. At the same time, French BAs say that they don't have enough good projects to finance. The answer to this question has important implications for the usefulness of policies to increase BA funding; a

[8] In a 2008 study sponsored by the Ministry for Higher Education and Research, and in collaboration with the association France Angels, Ernst & Young documented characteristic patterns of BAs in financing innovative SMEs. "BAs are involved for the most part during the first 2 years of businesses' existence (42 % of respondents became involved when the business was first created), very often in groups and as minority investors (82 % of participations mentioned were for less than 20 %). They invest in all business sectors but mostly in accordance with their professional background."

[9] In "L'innovation: un enjeu majeur pour la France—Dynamiser la croissance des entreprises innovantes", Report for the Ministry of Redressement Productif, Jean-Luc Beylat and Pierre Tambourin, April 2013.

policy-driven increase in capital investment in the face of a lack of quality projects runs the risk of inducing substantial misallocation of capital.

Similar problems have been reported in the US, regarding the transformation of new technologies into new marketable products, what is called the "Series A crunch." This suggests an equity gap between the angel or seed financing and the early-stage or Series A funding that supports more ventures. In other words, despite its scale, there are problems with the financing chain even in the US.

In short, despite important differences between the US and European markets, in both settings BAs are more likely than formal venture capitalists to invest in very early stage businesses, and there are not enough BAs to fill the gap (Mason and Harrison 1995). The main advantages for BAs are that the BA network itself is organized with low transaction costs and the BA members invest their own funds, without the need to justify themselves to external investors, which allows them to make investment decisions quickly with streamlined due-diligences procedures. So, we can say that there exist in both the US and Europe structural holes in the venture-finance chain and that BAs may be described as network entrepreneurs. Indeed, BAs are also well-informed investors who are very familiar with the sectors they invest in, they invest lower amounts, they are less demanding than the venture capitalist in terms of the risk-return ratio (Freear et al. 2002), and they have the ability to build strong trust ties. Not surprisingly, BA financing has a positive impact on new-venture growth, survival, and follow-up funding (Kerr et al. 2010).

The organization of BAs plays an important role in financing innovation. It is at this point that the comparison between Europe and US is important. In 2007(a,b), in official reports concerning BAs, EBAN issued 9 recommendations concerning four fundamental aspects of developing entrepreneurial finance. The first three recommendations aimed to reduce problems related to supply. First, EBAN recommended that latent investment potential and Virgin Angels[10] be mobilized, to improve the market place of informal venture capital and enable greater funds to be raised. Second, to reduce problems related to demand, the official report suggests improving preparation for the meeting between entrepreneur and investor. In terms of the environment in which BAs are evolving, it recommends that the dialogue between BAs and formal venture capital be enriched, that the partnership between regional participants and entrepreneurs be reinforced, that BAs increase their visibility and not forget appropriate regulations. Finally, it recommends that taxation concerning investments made by BAs and other private investors be revised.

In part, these recommendations aim to find modes of organization which allow both supply and demand to be targeted and find a way for them to meet. It appears this would be the objective of BA networks. Without an informal venture capital market, BAs in search of investment and entrepreneurs in search of finance stand little chance of meeting each other.[11] This statement should be considered relative

[10] Potential BAs have never invested in unlisted projects.

[11] It should be noted this role is already played by start-up funds and prior to this by incubators. However, not all projects go through these stages.

to the BA's reputation. If the BA is well known, he will receive spontaneous offers of viable projects (they will be recommended by members of its network or sent directly by the project carriers). On the other hand, if the BA has little experience, he will be confronted with a lack of worthwhile projects and/or difficulty in perceiving the quality of the project (his social network will be of no help and he will face an adverse selection problem). Yet one of the recommendations is to increase the number of active BAs. Taxation measures over the last few years in France have been moving steadily in this direction. If we significantly increase the number of inexperienced BAs, can the creation of BA networks (BANs) fulfill the role of a market?

This question is complex and requires reflection in two stages and on several levels, notably before and after the launching phase. We must first examine the identification and selection stages for viable innovative projects and study the impact of BAN constitutions. How can the organization of networks reinforce social links between the different economic players present during the launching phase and increase the amount of investment? What is the impact on the BA—entrepreneur relationship? What are the risks involved in the BAN constitution? Secondly, we must question the usefulness of BA networks in the relationship between formal venture capital and informal venture capital. As we have suggested, BA can reduce the structural hole between entrepreneur and formal venture capital. What about BAN?

Developing networks of BAs is no doubt the solution to avoiding the perverse effects of tax incentives alone. Indeed, if these future BAs do not become professional, the tax incentives run the risk of not producing BAs capable of filling the desired role. As we have stated, the BA is a partner that contributes his skills, knowledge and relationships. Furthermore, it should be emphasized that the risk also lies in seeing the value of projects increase simply due to the incentive driven influx of capital. Such a risk is not negligible and could have disastrous consequences for the development of innovation. Once again, we may use the theory put forward by Burt (1992) to analyze the role played by BA networks. Networks act as an intermediary between BAs and entrepreneurs seeking finance. This is particularly true for inexperienced BAs.[12] This statement must contain many nuances. Two researchers have shown, following a survey and five empirical studies, that BA networks do not bring BAs the value expected (Knyphausen-Aufseß and Wesphal 2008). According to the authors, BA networks are facing an adverse selection problem during the investment phase. Lastly, we must not forget the rise in transaction costs related to an increasing number of intermediaries. Thus, the constitution of BA networks carries undeniable negative aspects even though their functioning can include positive effects.

Concerning the organization of BAs in Europe and in US, accreditation appears to be more important in the U.S. than in Europe. Another difference concerns the way angel investments are done. In US, in order to make larger investments, BAs

[12] Not all BAs belong to a network and not all networks are in national associations,

invest through angel syndicates or angel groups. These groups are not typically as formalized as European BA networks. Nevertheless, as explained by the definition given by EBAN, such a network "is an organization whose aim is to facilitate the matching of entrepreneurs with business angels…Angels continue to make their own individual investment decision, and the BAN does not decide which investors will invest in a deal." Of course, belonging to a network allows syndication.

EBAN also recommends increasing connections between the economic players during the launching phase and between the informal and formal branches of venture capital. BA investment during the launching phase reduces uncertainty and sends a positive signal to the venture capitalist who then becomes involved. In order to select their investments venture capitalists will more easily be able to utilize traditional evaluation methods which will also be more applicable. It even appears that the later they become involved, the more competition they will be confronted with from other venture capitalists. Indeed, the more the business' stage of development advances, the less need there is for external shareholders' equity. This is easily explained by the reduction in uncertainty and the increased use of debt. In this way, the supply of capital becomes greater than the demand. But before entering this phase, there is a period of exponential growth to finance. At this time, although uncertainty has been reduced, it remains strong and there may still be equity gap problems. Moreover, if we follow this line of reasoning as to the life cycle of a BA investment, a link with formal venture capital may be necessary. It must not be forgotten that the BA is an investor that wants to realize its capital gains upon concluding the investment, even if this is not a priority.

The question is therefore to know which links the BA networks must maintain with other economic players who participate professionally in the partnering with and financing of innovation in a given sector. Numerous structures have already been put in place to accompany entrepreneurs of innovative projects. We may cite the example of technopoles in Europe and high tech business incubators in North America. There are many other participants however, and their presence does not seem to have facilitated the financing of a sufficient number of innovative projects over the past several years. This can be explained by the incapacity of these participants to build the right link with the right person and to create an atmosphere of trust. The problem appears linked to uncertainty (and consequently to the nature of innovation) and the circulation of information. If being organized into a network can improve the second point, we should better understand how innovation networks should be organized in order to promote the development of these projects.

Harrison and Mason (2000), analyzing the U.K., emphasize the various complementarities that exist in venture-capital markets: "co-investing in deals, sequential investing in ventures, business angels as investors in venture capital funds and deal referring." Ferrary (2009) demonstrates the role of venture capital funds in Silicon Valley in the financing and growth of start-ups in the CleanTech sector, concluding that in this specific cluster the VC serves as a network

entrepreneur, unlike the French "poles de compétitivité," characterized by a lack of venture capital funds. In other words, the problems of innovation financing in France seem to derive more from a lack of connections between the various actors involved than to a lack of funding, too few investors, or too few projects. Improving innovation in France may require a radical restructuring of the system of financing, rather than new incentives to increase the number of financed projects.

The classic sequential investing scheme has recently begun to change in the US as a new type of BA, the "super angel," has emerged (Wilson 2011). Super angels occupy an intermediate ground between BAs and VCs. Like VC funds, they invest large amounts and most of the time they invest other investors' money. Still, the continuity of the financing chain is a problem, and the series A crunch remains. Some policy measures designed to address the continuing gap include the JOBS act of April 2012 designed to facilitate start-up financing, particularly through crowdfunding. The JOBS Act also aims to encourage IPOs for "emerging growth companies." Accredited BAs already use more and more internet platforms to find projects, so BAs will continue to play a role in the development of this new type of financing technique.

5 Conclusion

The objective of this paper was to bring some thoughts to the financing of innovative projects. We have focused on the role played by social networks in dealing with the uncertainty associated with radical innovation. While social network theory has been widely used to analyze networks of founders, there is relatively little work on networks of funders. Work by Ferrary (2001, 2006, 2009) and Ferrary and Granovetter (2009) on venture capital in the complex innovation network of Silicon Valley are important but do not generalize to other sectors and national contexts.

The equity gap characterizing the lack of finance for the launch of innovative projects has prompted studies, reports and recommendations in the US and in various European countries. These studies conclude that it is necessary, indeed essential, to increase the number of active BAs in order to increase their level of professionalism as well as the sums invested. But government programs to subsidize BA activity and otherwise support early-stage ventures have a poor track record (Lerner 2009, 2010; Klein 2012), as we would expect from experience with other forms of industrial planning.

Although, as clarified by the theory of structural holes (Burt 1992), BAs appear to be an indispensable intermediary between project entrepreneurs and formal venture capital, BA networks themselves serve as intermediaries between inexperienced BAs and entrepreneurs. Yet the organization of BAs into networks is not without disadvantages and new issues arise. Lastly, the connections to be maintained between BAs, organized into networks or not, and the other participants in fostering innovation lead us to the much broader question of the functioning of innovation clusters.

The ideas outlined in this paper are only a first step. The role of BAs in the development of innovation is an important, yet poorly understood issue. We propose moving forward in two stages. First we must examine and evaluate the role of government intervention, particularly measures taken to support BAs, and the next steps concerning crowdfunding and new legal regulations in different countries. Secondly, a study of the functioning of BA networks, possibly from the point of view of Communities of Practices, should permit a better understanding of the process involved in identifying and selecting projects and an in-depth comparison between US angel groups and French BA networks.

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Micro Entrepreneurship and Female Homework in Developing Countries: On the Limited Capacity of Micro Entrepreneurship as Analytical Term

Farah Naz and Dieter Bögenhold

Abstract

Changes in global economic relations and production processes along with many other dynamic forces have brought many challenges and opportunities to the forefront in developing economies. Due to decentralization of global production processes, the economic geography of work has changed and new forms of work have been generated, albeit mostly in the informal sector, and homework has become an endpoint for most of the global and local supply chains. One important discussion that is surfacing in the literature on homework is that the dualistic construction of work as an employee or self-employed person has a limited capacity to capture the complexity of women's insertion in the labor market. Homeworkers with diverse employment and social biographies within the division of work test the limits of employment and self-employment. While the significance of the historical, temporal, institutional, spatial and social context in understanding economic behavior is widely acknowledged in entrepreneurship research now, this paper is an attempt to contribute to these discussions by investigating to what extent female homework in the developing world corresponds to the idea of employment and self-employment that is often used as a proxy for entrepreneurship? It is argued that female homeworkers who are usually seen as lacking in entrepreneurial spirit are perhaps more enterprising and entrepreneurial than recognized at present. Therefore, critical engagement with conceptualizing homework and female micro-entrepreneurship in the context of developing economies could not only open up new avenues of inquiry about the nature of work and production process, but also help to fully actualize the entrepreneurial "dynamism" of female informal micro-enterprises.

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Micro-entrepreneurship • Homeworkers • Informal Sector • Developing Economies

1 Introduction

Discourse of flexibility in the modern capitalist system has resulted in various types of corporate restructuring, which present threats to and opportunities for workers in developing countries through transforming existing employment relations (Kalleberg 2009). Production in the modern industrial capitalist system is not only organized in large factories, but also in small and informal industrial units, workshops and homes. Although the informal paid work is not accounted for in official statistics, even the scarce data that does exist confirms that homework has become an important source of employment, especially for women in many developing countries (Chen 2014).

Production in the modern industrial capitalist system has altered the boundaries of traditional employment relations and the dualistic construction of work as an employee or self-employed person, based on the liberal assumption of autonomous and self-contained individuals, is not able to fully capture the complexity of third world women's insertion into the labor market through home-based work. Homeworkers, due to the unique nature of their work, might not fall neatly into specific legal categories of employed or self-employed. They play a significant but precarious role at the intersection of productive work, i.e. paid work in the labor market and reproductive or care work performed in the private sphere of the household, as a part of the gender role obligation. Therefore, the legal and the mutually exclusive definition of dependent homeworkers and independent micro-entrepreneurs converge in the case of many female homeworkers, embedded in a multi-faceted relationship of power and sub-ordination (Prugal 1996). It is argued that these informal home-based workers could possibly be categorized as self-employed or micro-entrepreneurs, since they assume all the risk of their micro enterprise; therefore it is unjust to relegate them to a peripheral position (Torri and Martinez 2014). It is an uphill task for development experts and activists to examine the prospects and potential of female homework to transform into women's micro enterprise in order to have any significant impact on women's revenue, capacity building and their social and economic empowerment. Women's capacity to transform their lives through microenterprise is dependent not only upon their personal abilities, but also on their social, institutional and spatial environment.

The significance of the historical, temporal, institutional, spatial and social context in understanding economic behavior is now widely acknowledged in entrepreneurship research (Welter 2011). It is also argued that boundaries of work and traditional employment in industrial labor markets need to be redefined in order to capture the economic contribution of informal female homeworkers. Critical engagement with conceptualizing homework and female micro

entrepreneurship in the context of developing economies could not only open up new avenues of inquiry about the nature of work and production process, but might also help to fully actualize the entrepreneurial "dynamism" of female informal microenterprise.

Changes in the economic geography of work have opened up whole new dimensions in the field of international entrepreneurship. Perhaps the greatest challenge to the evolving field of international entrepreneurship is the need to generate theoretical contributions that are distinct from, and possibly even in conflict with, well-established theories in the parent fields of entrepreneurship, international business, and strategy (Di Gregorio 2004, p. 210). "Contextualizing entrepreneurship research does not imply abandoning received theory", ... "but frame phenomena and our explanations quite differently" (Zahra 2007, p. 451). Therefore, entrepreneurship research has to distinguish between the questions we ask and the questions we care about (Sarasvathy 2004).

2 Context of Entrepreneurship and the Blurred Boundaries of Work

Neo-classic economics attempted to arrive at theories of capitalist market economies, which are not limited to specific times, regions and their cultures, but which are universal and general so that they fit everywhere and every time. These ideas were criticized to a certain extent in different academic disciplines, since those theories seemed to deal with economies and societies in a vacuum, so that increasingly the need for a shift from observation of economies *in abstracto* to economies *in concreto* was demanded. Analyzing concrete phenomena requires an acknowledgement of the diverse institutional integrations of the phenomena. To put it in the words of Solow: "All narrowly economic activity is embedded in a web of social institutions, customs, beliefs, and attitudes.... Few things should be more interesting to a civilized economic theorist than the opportunity to observe the interplay between social institutions and economic behavior over time and place" (Solow 1985, pp. 328–329). Accordingly, economic historians like Polanyi (1944) or sociologists like Granovetter (1985) argued about the social embeddedness of economic institutions and social behavior. A lesson for entrepreneurship research is not to continue with very general wording about entrepreneurship and its resources such as finance or technology, but to link the discussion to the concrete determinants of entrepreneurship within contexts of culture, space and time (Jack and Anderson 2002; Zahra 2007; Welter 2011; Autio et al. 2004). According to Welter (2011), one can distinguish different elements of context such as (i) institutions including society, politics and industrial relations, (ii) business including firm sizes, industries, markets, (iii) space dimensions including countries, communities and clusters, and (iv) family including social networks, and household relations. Those dimensions play significant own roles in their composition and contribute to the structuration processes of society (Giddens 1984).

Following this script, we have to acknowledge that the division of labor is not as clearly structured in all different societies, but processes are diverse, borders are more rigid or fluid, degrees of informality differ, and processes of social mobility show their own rules. The rules of the game—as Baumol (1990, p. 894) put it—are different from country to country. Social processes between the categories of entrepreneurship and wage or salary dependent work occur permanently in both directions, the level of statistical accurateness and informality differs, and the grey zone between entrepreneurship and dependent work is vast.

3 Female Homeworkers at the Crossroads

Based on existing empirical observations (Prugal and Tinker 1997; Mehrotra and Biggeri 2005; Vryenhoek 2013) we see that an overlap between micro entrepreneurship and homework exists *de facto*. The western model of capitalism and industrial labor markets limits the definition of work mainly to those activities performed for the labor market outside the home as real work and relegating the rest of the work organization to leisure, crime or housework. This definition of work in terms of employment for wage leads to a reductionist classification of the labor force. According to the International Classification of Status in Employment (ICSE), workers can be either classified as self-employed or wage workers and the employment status of the workers is generally gauged on the basis of two legal criteria, namely subordination and economic dependence. There are two indicators of subordination. The first is the disciplinary power of the work provider and the second is that work is performed under the directions of the work provider (Prugal and Tinker 1997). Thus, a person is considered to be an employee, if he or she is subordinated to the work provider in terms of working hours and a particular way to perform work.

The second important criteria for judging the employment status of a worker is economic dependence. It can be measured through certain indicators, e.g. worker risk-taking behavior and his or her opportunity for profit and loss. Risk taking can be measured in terms of investing capital, providing raw materials, hiring employees, refraining from fixing prices in advance, having only short-term relationships with the provider of work. Whereas opportunity for profit or loss can be gauged by having access to a broad market and possessing marketable skills. However, the diversity of activities and the context in which homeworkers are involved makes it difficult to mark the conceptual boundaries of homework[1] based on these criteria.

[1] The International Labor Organization (ILO) adopted a Convention of Homework in 1996 (No. 177), which defines the homeworker as a person who carries out work for remuneration in the premises of his/her own choice, other than the workplace of the employer, resulting in a product or service as specified by the employer, irrespective of who provides the equipment, materials, or inputs used unless this person has the degree of autonomy and of economic independence necessary to be considered an independent worker under national laws, regulations or court decisions. The ILO convention on homework requires that ratifying states ensure equality of treatment between employees and homeworkers in their national policies.

Therefore, such a reductionist categorization of work is challenged in the case of homeworkers who fit into none of these categories. Prugal and Tinker (1997) argued that it is difficult to classify homeworkers as *self-employed micro-entrepreneurs* or *dependent wage workers,* as at the practical level the distinction between the two can be fuzzy. Industrial homeworkers, in most of the cases, have to closely follow the instructions of work providers in terms of design and quality of work, and they are also economically dependent on most of the criteria, but they are also not directly supervised. However, these experiences of hyper flexible working, as reported by workers, have much in common with the monitoring and surveillance of Taylorism, due to clearly set targets and deadlines by the sub-contractors or work providers (Baylina and Schier 2003).

The majority of industrial homeworkers have limited skills and access to markets to sell their products and thus little opportunity for profit or loss. They are also in a long-term and relatively permanent relationship with their work providers and prices are usually fixed in advance. However, some of them own their own means of production, e.g. female home-based workers in many garment supply chains have their own sewing machines and scissors and they also contribute other means of productions, like some raw material and utility cost, etc. In some cases, if they have excessive work, they can also play the role of independent sub-contractor and provide work for other women of the community or the family (Chen 2014).

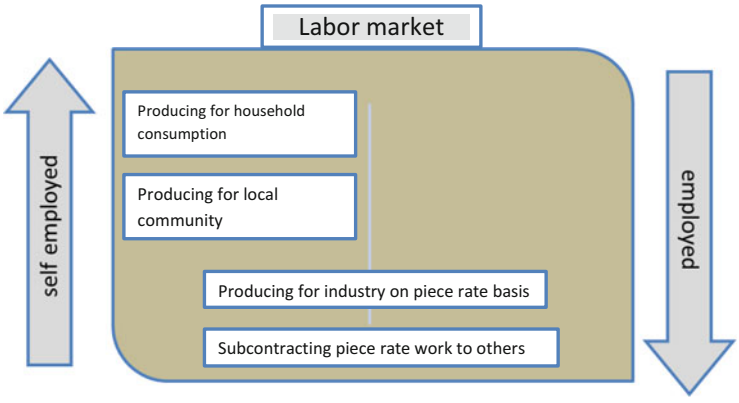
Based on existing empirical evidence, it can be concluded with a high degree of certainty that opposition between homeworkers and micro-entrepreneurs is arbitrary in most of the cases. This is especially true in the case of female homeworkers, because they are inserted differently into the labor force, due to their socially constructed gender role obligations and the simplistic interpretation of women's work, which bears the risk of neglecting the heterogeneity of their work and its specific relation to the family and production process. They might not fall neatly into specific legal categories, e.g. most of the homeworkers are not under the direct supervision of a work provider, therefore they do not meet the legal criterion of subordination and legal criteria to determine employment status of homeworkers often lead to ambiguous results.

The employment relationships are more complicated, and many homeworkers *do not fit* into these simple categories. Rather, they fall into a gray zone between employees and self-employed. Homeworking is often irregular work that has seasonal variations. Therefore, many homeworkers go through intensive working periods (including holidays), which are followed by alternate periods of unemployment or less work, according to the seasonal variations in demand (ibid). Although the need for income varies within a fluctuating scale, depending upon the personal circumstances of homeworkers, it goes from situations where the woman's salary is very necessary for the family, to those where it represents a complement to the total income and an improvement of living conditions. Nevertheless, it can be stated that the vast majority of the women do the homework for their personal and their family's survival. Therefore, when industrial outwork is not available, many homeworkers have to do other forms of home-based work to supplement their

income. This is often own-account work for example, preparing their products for sale in the local market. Thus, the boundaries between employment and entrepreneurship remain porous for homeworkers. They occupy a distinct niche in the labor market through the distinct organization of their work (Prugal 1999). The complexity of the homeworkers' situation demands for a definition embedded in the economic, political and social environment of home-based work in order to make a larger number of homeworkers, a special category of home-based workers, visible in the political economy of production relations.

The political and economic spheres are mutually constitutive within the context of social relations. The political economy perspective provides a distinctive ontology and epistemology to view homework and micro entrepreneurship from the vantage point of different actors across different social and historical contexts. The fundamental question that needs to be asked in the case of homeworkers is in what ways are female homeworkers and their micro enterprises rendered invisible by the economic and political discourses? Amoore (2002) argued that the reorganization of work in a global capitalist system is not unproblematic or inevitable and it becomes manifested in, and contested through, diverse social practices and experiences of workers, particularly unprotected or unrepresented workers like home-based workers, whose voices are unheard in global restructuring discourses. These are the sites where work and political contestation is taking place in the global political economy. In order to understand the positioning of female homeworkers in the global production system and international division of employment we need to go beyond the existing order and have to consider the historical, political, geographical and social relationships that female homeworkers have with one another, and with the production processes and political geography of work.

Figure 1 shows how homework tests the limits of employment and self-employment as in the case of homeworkers, the distinction between the two is practically contestable. Amoore (2002) argued that the dualistic construction of



Source: Own diagram

Fig. 1 Homeworkers' insertion in labor market. *Source*: Own diagram

work as an employee or self-employed person is based on the western liberal assumption of autonomous and self-contained individuals, which fails to capture the complexity of women's insertion in the labor market through home-based work that is visibly tangled with their gender role obligations. Ideological constructions of proper womanhood affect the women's opportunities to seek employment or use their entrepreneurial skills to the full extent (Welter et al. 2014). A trend towards outsourcing work at the household level has added a layer of invisibility to the economic contribution of homeworkers.

In the case of homework, boundaries of work have been renegotiated between the private sphere of home and the public sphere of work. Homework is a unique blend of private household and public enterprise production. However, often homework that takes place in family workshops and on kitchen tables is not legally acknowledged, and these tend to be invisible and unprotected workspaces in social, economic and political discourse.

In some regions of the developing world, where women's seclusion is the norm, women are literally tied to their homes through the ideological construction of gender division of labor. However, under the existing economic structure, men are not able to provide for their families and these secluded women are compelled to participate in income generating activities through putting-out systems in many developing countries. Many of them have become micro-entrepreneurs, cooking street foods, making handicrafts or stitching garments for global supply chains. In some cases, women are able to gain access to the market only through their menfolk and their products are sold by male family members in many countries like Nigeria, Pakistan and in Bangladesh. Not surprisingly, such a construction of female home-based work disguises the substantial contribution of female home-based workers to their household budget and national economies, thus legitimatizing the low payment for their labor and denying recognition to their enterprising behavior. The economic contributions of female home-based worker are subsumed under the entrepreneurship of men in many developing economies. In sum, ignoring the diverse and substantial contributions of the female homeworkers can lead to a significant underestimation of the importance of female entrepreneurial activities in the developing world.

4 Conceptualizing Homeworkers as Hidden Entrepreneurs: Is There a Way Forward?

Despite considerable debates regarding how entrepreneurs should be defined and depicted, it remains an elusive concept in academic literature that has an obvious *semantic vagueness* (Afrin et al. 2010; Bögenhold 2014). However, the ideal type depiction of entrepreneurs that permeates the mainstream entrepreneurship literature is as *wholesome super heroes*, innovators and major agents of economic change, who tend to break the equilibrium through "creative destruction" (Schumpeter 1942). Four common characteristics of the entrepreneur reflected in entrepreneurship literature are: initiative-taking, organizing and reorganizing of

social and economic mechanisms, and the acceptance of risk or failure. The ultimate outcome of these activities is opportunity recognition, innovation and venture creation, which leads to economic growth/development and human welfare (Shane and Venkataraman 2000; Carlsson et al. 2013). However, this ideal-type representation of entrepreneurship in the mainstream literature is explicitly challenged in a small stream of literature (e.g. Williams 2006; Williams et al. 2006). According to Williams (2008), the stereotypical presentation of entrepreneurs as ideal type objects, ultimately results in the marginalization of all other forms of entrepreneurship, which do not fit nicely within this positive, wholesome and virtuous ideal-type framework.

The mainstream representation of entrepreneurship does not acknowledge the socioeconomic diversity of human actors, or their heterogeneous biographical careers and orientations (Bögenhold and Klinglmair 2015). Consequently, informal work, which was largely believed to be mostly composed of exploitative 'sweat-shop-like' waged employment, was either placed outside the boundaries of entrepreneurship or consigned to the margins by portraying such a type of work as not belonging to 'mainstream' entrepreneurship. Indeed, it is precisely because of the predominance of this ideal representation of entrepreneurs that so little attention has been paid to the relationship between entrepreneurship and the informal female home-based enterprises. However, in recent decades, especially in the context of developing countries, it has been widely recognized that many people operating in the informal economy display entrepreneurial qualities (William and Round 2007; Woodwards et al. 2011; Adom and Williams 2012). There has been growing recognition in the entrepreneurship literature that legitimizing this 'hidden enterprise culture' could be an important means of promoting enterprise and economic development (William and Nadin 2010).

In most entrepreneurship research the labor market category of self-employed is used as a proxy for entrepreneurship and it is treated as a vehicle for the creation of wealth and employment generation, however this question is debated in the context of the developing world. These homeworkers may not fit into Schumpeter's portrayal of entrepreneurs as *captains of industry,* as they are usually seen as lacking in entrepreneurial spirit. However, their real life situations are reflections of their hybrid employment status, i.e. dependent wage workers and self-employed. Therefore, most of the homeworkers who have diverse socio biographical histories and liquid boundaries of employment relations can be categorized as micro-entrepreneurs. They are perhaps more enterprising and entrepreneurial than is recognized at present. Currently, there are contradictory public and political views and images of women's informal homework. On the one hand, it is considered an opportunity for women who have no choice but to work at home, due to their reproductive responsibilities. On the other hand, homeworking is seen as a means of female exploitation through biased labor market practices, which require women to do more for less pay, and isolate them in their own homes (Baylina and Schier 2003).

Mehrotra and Biggeri (2005) argue that homework has a dual and contradictory character. It can be a source of exploitation and intergenerational transfer of

poverty, and on the other hand it can also foster human development at the household level, as the experience gained through homework can eventually trigger the entrepreneurial capabilities of some workers/subcontractors and the homeworkers, thus leading to the startup of a small enterprise, blurring the boundaries between homeworkers and micro-entrepreneurs. The literature on women's micro enterprise has given questionable support to the idea of challenging the gendered nature of the economic exclusion of women through female micro enterprise. Therefore, it is important to analyze new relationships that run deeper into unprotected sites through intricate global supply chains, where female homeworkers play an important but precarious role.

5 Setting the Boundaries

Economic development and entrepreneurship literature have often divided informal businesses into two major categories, survivalist and entrepreneurial. Survivalist business is assumed to be non-lasting and generates minimal income, and entrepreneurial businesses have the potential to flourish by making capital improvements (Woodwards et al. 2011). The survivalist and subsistence view of the developing world's informal sector is often upheld in mainstream development literature, where the informal sector is assumed to serve as a waiting place for individuals wishing to enter the formal economy. However, this anti-entrepreneurial perspective of informal activity in developing countries was challenged by De Soto (1989) and his work represents a paradigmatic shift in thinking about informal work. He contested that informal "hidden enterprise culture" in most developing countries is due to multiple barriers, like the costs of formality and often demonstrate entrepreneurial "dynamism". Micro enterprises remain small and largely underground in developing economies due to the lack of legal protection and should not be regarded as a wholly negative phenomenon or a hindrance to development (William and Round 2007).

In order to understand the phenomenon of female entrepreneurship in the context of female home-based work, due attention has to be paid to the overarching institutionalized social structures and gender asymmetries aside the "3Ms", namely market, money and management (Brush et al. 2009). The context plays a vital role in shaping female entrepreneurship. For example, in patriarchal societies where traditional gender roles favor the male breadwinner model, women's business activities are often restricted to home-based survivalist enterprises (Welter et al. 2014).

Female home-based workers face diverse socioeconomic and political challenges that hinder them to fully actualize the entrepreneurial "dynamism" of their informal micro enterprise and they remain on the invisible margins of the survivalist end of the economy. They are unable to reach a sustainable livelihood through informal trade. Female homeworkers are confronted with monetary as well as non-monetary barriers due to gender discrimination in the labor market and

prevailing negative sociocultural attitudes. Exploring the multiplicity of contexts in which female homework is performed could facilitate a holistic understanding of the uniqueness of women's hidden entrepreneurial contributions, especially in the context of third world countries.

Female home-based workers in developing countries are pushed into entrepreneurial activities due to economic necessity. Existing literature (Brusha and Cooperb 2012; Chen 2014) supports that developing economies have a higher rate of entrepreneurial activity[2] for women than developed economies. Aidis et al. (2007) note that in order to fully materialize the potential of entrepreneurship as a means of economic development and social inclusion, women have to be represented among entrepreneurs, and governments can foster the entrepreneurial climate of their countries through triggering the untapped source of female entrepreneurship (Zwan et al. 2012).

However, the existing academic debate about the role of the informal sector, especially with reference to its impact on female entrepreneurial outcomes from the perspective of economic empowerment and gender equity, is inconclusive (Strier and Abdeen 2009). Studies about women entrepreneurs comprise less than 10 % of all research in the field and are still very Western-centric. It is important to acknowledge the heterogeneity of social and economic situations within the span of entrepreneurship that present a challenge for researchers (Davidsson 2008, 2016). Therefore, more work remains to be done in both developed and developing countries (Brusha and Cooperb 2012).

6 Concluding Remarks

Discourse of flexibility in the modern capitalist system has resulted in various types of corporate restructuring, which present threats to and opportunities for workers in developing countries through transforming existing employment relations. In this process of decentralization, homeworking has become the natural endpoint of global and local supply chains. One important discussion surfacing in the literature on homework is that existing employment criteria are inadequate to determine and define homework and the classification of the labor force as employed or self-employed is the reflection of prejudice bred by western capitalism and industrial labor markets (Tilly and Tilly 1994). However, such a clinical dichotomy between employed and self-employed is hard to maintain in increasingly complex labor market patterns characterized by hybrid employment status, challenging

[2] According to the Global Entrepreneurship Monitor 2012 Women's Report, the highest regional female Total Entrepreneurial Activity (TEA) levels can be seen in Sub-Saharan Africa, where 27 % of the female population, on average, are engaged in entrepreneurship. Latin America/Caribbean economies show comparatively high levels as well (15 %). Lower female TEA levels are evident at either end of the economic development scale. The MENA/Mid-Asia region reports the lowest average TEA levels among women (4 %). Developed Europe and Asia, and Israel also show low rates (5 %).

stereotypical assumptions and rhetoric related to entrepreneurship (Bögenhold and Klinglmair 2015). The diversity of activities and the context, in which homeworkers are involved, makes it difficult to mark the conceptual boundaries of homework. Homeworkers having diverse occupational and social biographies within the division of work test the limits of employment and self-employment, as in the case of homeworkers, the distinction between the two is practically contestable (Prugal 1996).

However, female home-based workers face diverse socioeconomic and political challenges that hinder them to fully actualize the entrepreneurial "dynamism" of their informal micro enterprises and they remain on invisible margins of the survivalist end of the economy. Exploring the multiplicity of contexts in which female homework is performed could facilitate a holistic understanding of the uniqueness of women's hidden entrepreneurial contributions, especially in the context of developing countries. Critical engagement with conceptualizing homework and female micro entrepreneurship in the context of developing economies could not only open up new avenues of inquiry about the nature of work and production process, but could also help to fully actualize the entrepreneurial "dynamism" of female informal micro enterprises in these countries. Governments can foster the entrepreneurial climate of their countries through triggering the untapped source of female entrepreneurship (Zwan et al. 2012). This paper concludes that female homeworkers who are usually seen as lacking in entrepreneurial spirit are perhaps more enterprising and entrepreneurial than recognized at present and more empirical research is needed in this area.

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