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Analyzing Impacts of the Economic Crisis on the Pre–Start–Up Process of Business Students in Germany

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Abstract

The article is part of the empirical research project "Starting up Businesses and Entrepreneurship by Students" (GESt–study) and analyzes potential impacts of the economic crisis on the pre–start–up process of business students surveyed before and during the downturn at four German universities (of applied sciences), what supports the advancement of entrepreneurship education and support within two different macroeconomic contexts. Though in Germany recessions typically animate more persons to self–employment, these business start–ups are mostly based on necessity–driven entrepreneurship. But particularly opportunity entrepreneurship has positive effects on economic growth and employment. Whereas no significant differences can be detected regarding their start–up propensities, the economic crisis indeed has heightened the intended start–up time as well as the necessity–driven start–up motivation of the surveyed business students, but not their start–up motivation from economic self–realization. Therefore, self–employment as

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• *Entrepreneurship*
• *Business Students*
• *Germany*
• *Economic Crisis*

vocational alternative has to be highlighted stronger and entrepreneurial basic knowledge has to be taught adequately to the students so that they are able to mature as potential entrepreneurs at their universities – the location where specialized knowledge about their subsequent professionalism is imparted – what facilitates them to generate future innovations accompanied by enduring and high–skilled employment.

1. Introduction

The universal objective of improving the economic competitiveness is based on systematic discussions about entrepreneurship and the capability of innovation. In Europe entrepreneurship and entrepreneurship education have been comprised intensely as strategic topic into the politico–economic agenda since the Lisbon Agenda 2000, when the European heads of governments – based on research results about the positive impacts of innovative business start–ups on employment, growth, and competition –declared the conjoint aim to develop the European Union until 2010 to the most competitive and most dynamic knowledge–based economic area worldwide– accompanied by more employment as well as higher–qualified jobs (European Council 2000; Ofstad 2008). Within the scope of such a challenge of the major industrial countries, Germany seems to be successively forfeiting its "leading" position in the arena of highly advanced technology. Therefore, established as well as new innovative business ventures comprise a crucial criterion in preserving Germany's economic position. After the slump of the stock exchange prices at the *Neuer Markt*[1] the business creation euphoria in Germany as well as the afore strong academics' start–up interest unfortunately slashed immensely, what was reflected in strongly dropped business creations within technology–oriented and knowledge–based sectors since 2001 (ZEW 2005; Breuer 2006). For years, liquidations have outbalanced the quantity of new enterprises, and additionally, solely few business creations actually add with recently generated products and services to new innovations. Especially high–potential firms boosting innovations in Germany based on structure–amending and market–skimming products, processes and service developments represent the lowest business start–up quantity. Only an enhancement of newly founded enterprises creating high–skilled labor could solve this German innovation gap (Reinemann 2006; Ruda/Martin/Danko 2009b).

Evidently, the recent economic crisis has not contributed beneficially to this challenge. Amongst others, it was accompanied by reduced venture capital investments, what has handicapped the creation of new innovative enterprises. Since fall 2008, when the financial markets experienced their strongest economic slump since the global

(1) German for "New Market" – a segment of the German stock exchange that included New Economy companies.

economic crisis in 1929, the business condition has developed drastically all over the world. In Germany, although without real estate bubble, the export trade decreased,(2) and independent research institutes forecasted the worst downturn since the Second World War and estimated unemployment rates to rise substantially (Schäfer 2009).(3) During crises *employment* generally requires a noticeable longer regeneration than the other recession indicators,(4) for example, end of 2001 *industrial output* and *gross domestic product* increased slowly, what indicated the official end of the downturn, notwithstanding the labor market situation still worsened. Since the 1990's Germany and Europe altogether suffered also during cyclical upturns from "eurosclerosis", that is enduring high unemployment affecting especially the young generation (Krugman 2009), and thus precisely the student aim group.

However, during the pre–crisis years Germany was affected by better labor market conditions. In 2008 the German unemployment rate reached its lowest amount since 14 years (Schäfer 2009), and due to reduced financial start–up encouragement, a fewer fraction of the labor force ventured creating a business. In contrast, in Germany, recessions like the recent economic crisis are accompanied by a contrary phenomenon, where more people contemplate self–employment as vocational alternative (Weber 2009). "Since the difficulty of the labor shortage in a community – exposed in an enduring structural pressure to change within a competitive globalization – particularly affects the generation of young people processing or just having finished their (collegiate) education and looking for work, self–employment as an earning alternative should be directed to this target group in particular" (Ruda/Martin/Danko 2009b). Precisely depressions accelerate structural change. On the one hand jobs of existent enterprises are cut more intensely in uneconomical industrial sectors, and on the other hand this dynamic facilitates innovative business ideas leading to job creations. Certainly, because of the slump in demand, during crises start–up firms undergo a notable strong competitive pressure (Brixy/Hundt/Sternberg 2010). Hence, the present state of the economy and the labor shortage during the crisis should be recognized as incentive to sensitize students stronger to business creation and to impart them fundamental entrepreneurial competencies, in order to being better prepared to innovate successfully their potential inventions. Students and graduates represent the most likely founders of high potential firms creating enduring and high–skilled employment (Dietrich 1999; Franke/Lüthje 2000; Martin/Ruda 2001; Koch 2002; Uebelacker 2005), whereas persons with low educational level both less frequently plan starting a business and more rarely realize it eventually (Brixy/Hundt/Sternberg 2010).

Due to its heightened growth and employment effects, the emphasis of entrepreneurship research and education should be fixed on innovativeness and satisfy the interdisciplinary entrepreneurship character (Szyperski/Nathusius 1999; Acs/Audretsch 2005) with the objective of an interdisciplinary intersection of teachings with entrepreneurship contents (Ruda/Martin/Ascúa/Danko 2008) and conjoint entrepreneurship courses for several subject areas respectively, particularly business sciences, engineering, and natural sciences (Franke/Lüthje 2004). Diverse studies confirm, besides engineering and informatics students, business students to comprise the strongest start–up intentions and start–up activities respectively (Otten 2000; Görisch

(2) In 2009 China overtook Germany as the world's top export nation.
(3) It has to be noticed that by now not solely investment and consumption, and thus the markets, have amended again, but also the German unemployment rate has declined again. However, this article analyzes empirical results of students polled before as well as during the economic crisis. Hence, the already ongoing post–crisis recovering of the markets and unemployment has not been picked up within the paper's analysis.
(4) That is *industrial output*, *consumer expenditure* and *gross domestic product*.

2002; Schwarz/Grieshuber 2001; Josten/van Elkan/ Laux/Thomm 2008). Empirical findings highlight 84 percent of the enterprisers with graduate degree coming from engineering or natural sciences, whereas one tenth studied business sciences (Inmit /IfM 1998; Koch 2002). In this connection, students and graduates of business administration act solely limitedly as product and process innovators (Braukmann 2003), they rather generate purpose–induced innovations and represent a high importance in the range of technology–oriented complementary team start–ups – that usually are most successful –, where they take over the commercial tasks (Franke/ Lüthje 2004). Within this paper a focus on business students is carried out.

"Suitable supportive measures have to be developed and offered to the national operating business entities as well as to potential start–ups in order to develop international economic competitiveness" (Ruda/Martin/Danko 2009b) in a dynamic macroeconomic framework. Thus, knowledge about motivations and reasons of the students' start–up decisions have to be explored (Ruda/Martin/ Danko 2009a). "Lacking knowledge of real context and interrelations exertions of influence stay at random, and arbitrary interferences possibly could slow down or even destruct exactly those interactions working towards a structural adjustment" (Szyperski/Nathusius 1999).(5) Therefore, it is required to acquire information about the student desiderata in the entrepreneurial context, considering that the students themselves are the deciders in founding potentially their own start–up companies (Ruda/Martin/Ascúa/Danko 2009b). The paper aims to explore impacts of the economic crisis on the pre–start–up process and entrepreneurial characteristics of business students, in order to deduce conclusions about their requirements as well as appropriate entrepreneurship assistance measures in a changed and dynamic macroeconomic framework.

2. Pre–Start–Up Process and Hypotheses Deduction

Referring results of a KfW/IKW study three quarter of the surveyed enterprisers evaluate Germany as internationally not competitive, especially due to high wage level and high ancillary labor costs respectively, dismissal protection and fixed working hours. In contrast, they regard positively the employees' qualification, the good infrastructure, the dual educational system and Germany's innovation potential. Summed up the comparative advantage of Germany is considered in terms of developing and manufacturing of human capital–intensive and innovative goods and services – a positive signal for future innovations based on high–potential firms. Specific to start–up intentions as critical factors finally hindering business creations are mentioned particularly bad economic climate, high financial risk, fear of failure, non–obtainment of necessary financing and poor prospects of success by reason of lacking demand (KfW Bankengruppe 2004; Klandt 2006).

In the context of analyzing entrepreneurial intentions and characteristics of business students before and during the economic crisis, it is essential to focus on and gather information about the student pre–start–up–process, in order to conclude how to support adequately business formations by students and graduates respectively. "Regardless of the primary importance of the business start–up process for business management – entrepreneurship research frequently highlights the influence

(5) Own translation into English; original German quotation: "Bei nicht ausreichender Kenntnis der realen Zusammenhänge bleiben Einflußnahmen zufällig und können willkürliche Eingriffe möglicherweise gerade diejenigen Kräfte, die auf eine Strukturanpassung hinarbeiten, bremsen oder gar zerstören" (Szyperski/ Nathusius 1999).

of resource endowment at foundation time upon the prosperity of enterprises – the issue of the emergence of new companies is only infrequently addressed. Rather, the existence of entrepreneurs and businesses is simply assumed. Hence, research studies primarily concentrate on entrepreneurs with already completed business foundation processes and on established business ventures" (Ruda/Martin/Ascúa/Danko 2009b; following Ruda/Martin 2000; Bamford/Dean/McDougall 1999; Brüderl/Preisendörfer/Ziegler 1996; Mellewigt/Schmidt/Weller 2006; Kaiser/Gläser 1999; Mellewigt/Witt 2002; Picot/Laub/Schneider 1989; Ruda 2006; Frank 1999; Ruda/Martin/Danko 2008a). Due to this, the pre–start–up process – as individual developing and decision process of potential entrepreneurs (Ruda/Martin/Danko 2008b) – in general is largely unexplored (Frank/Korunka 1996; Mellewigt/Schmidt/Weller 2006; Welter 2001; Ruda/Martin/Danko 2009a). Nevertheless, the pre–start–up process generally constitutes the pivotal development stage of enterprises (Ofstad 2008). "An assumedly not inconsiderable number of foundation willing persons abandons their start–up intention in the course of their prearrangement; when, why and how this occurs is, so far, unexplained, although this is both managerial and politico–economically of substantial interest" (Frank 1999).(6)

A research project analyzing start–up intentions and entrepreneurial characteristics of students with the objective to generate knowledge about how to design and implement an appropriate support infrastructure of sensitizing and encouraging students to create enterprises has to be based on the business start–up process. Business formation is considered as process of creating a system that is qualitatively differentiated from its environment and has not existed beforehand with a congruent structure. Such a system as economical independent business entity serves the fulfillment of demand and comprises the special nature of economic risk (Kosiol 1966; Szyperski/Nathusius 1999). The procedural venture creation indeed does not comprise solely a singular act, but is determined by many decision–making processes and activities being executed already prior to the start–up realization. In order to distinguish the period during which the – for a potential start–up decision – relevant cause–effect relationships emerge, a reference to managerial life cycle models seems to be purposive, because thereby the process character of the venture creation is considered. However, these models are stronger suited for analyzing development trajectories of already existing enterprises than of start–ups because they disregard for instance the ideation and planning phases within the start–up process (Mellewigt/Witt 2002).(7) Indeed, no generally accepted correct response exists regarding the determining of enterprise life cycle phases, in fact, life cycle models only show a spectrum of possibilities (Mugler 1998).

In Greiner's growth phases model for instance, during the first stage „the emphasis is on creating both a product and a market" (Greiner 1972), thus it includes more than the pre–start–up process. This does also apply to the model of Churchill and Lewis who emphasize during their first stage "Existence" "the main problems of the business are obtaining customers and delivering the product or service contracted for" (Churchill/Lewis 1983), what includes already operational day trade. A more

(6) Own translation into English; original German quotation: "Eine vermutlich nicht unbeträchtliche Zahl von Gründungswilligen gibt im Zuge der Vorbereitung ihre Gründungsabsicht auf; wann, warum und wie dies erfolgt, ist bislang ungeklärt, obwohl dies sowohl betriebswirtschaftlich als auch wirtschaftspolitisch von beträchtlichem Interesse ist" (Frank 1999).

(7) Existing managerial life cycle models display only rarely the pre–start–up process as an own phase. Following a cluster analysis based on several in the literature existent life cycle models, the pre–start–up phase is not included as one of the four generated ideal typical phases (Hanks/Watson/Jansen/Chandler 1993; Mellewigt/Witt 2002).

appropriate link to classify the pre–start–up process is an enterprise life cycle model by Kaiser and Gläser with seven phases, namely *forerun (idea), planning, formation, early developing (prove), first growth, consolidation,* and finally *second growth* (Kaiser/Gläser 1999). In the literature the pre–start–up process mostly consistently is considered to be initiated with the first draft of the product idea and business concept by a potential founder,[8] whereas diverse opinions exist regarding its end (Mellewigt/Witt 2002).

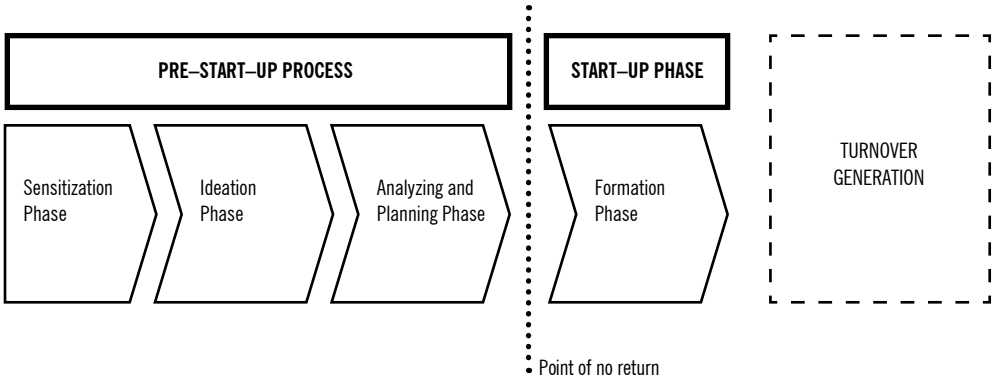
Referring to Reynolds and Miller the pre–start–up process ends with the market entry and the first turnover respectively, whereby it comprises the phases *forerun,*[9] *planning*[10] and *formation*[11] (Reynolds/Miller 1992; Mellewigt/Witt 2002). Szyperski and Nathusius also apply the realization of first turnover as criterion for delimiting the formation phase from the following early developing phase. They define the business formation phase to comprise the totality of all planning and preparation steps leading to the business commencement (Szyperski/Nathusius 1999), thus their *formation phase* includes – like the aforementioned pre–start–up process – the stages *forerun, planning,* and *formation.* By subsuming besides the forerun and planning phases also the formation phase – and thus the implementing of the planned start–up conception, that is the start–up activity – under the pre–start–up process, the potential founder crosses the so called "point of no return", at which a breakdown of the enterprise formation and a recurrence to previous planning steps respectively, because of at this point commenced concrete formation of the business such as already executed product developments, stringently comes along with financial loss (Szyperski/Nathusius 1999; Pörner 1989; Driescher 1999). Therefore, it seems appropriately to define the "point of no return" as criterion for delimiting potential founders from (factual) founders as well as the pre–start–up process from the formation phase. At the latest during the formation phase arises, due to the at this stage inevitably employing resource acquisition, the need for capital (Hustedde/Pulver 1992; Mellewigt/Witt 2002).

In this research project the initiation of the pre–start–up process is not specified with the first draft of the product idea or the business concept. As its starting point the *sensitization phase* is defined. This is reasoned, because personality factors that could be important to business management are already affected by early socialization phases (Mugler 1998) and moreover, to attitudes, motives, and intentions a high relevance within the pre–start–up process is ascribed (Unterkofler 1989; Wimmer 1996). In addition, already before a possible business idea generation potential founders could be confronted with start–up–relevant information, whereby they look by themselves for marketable opportunities, what results in case of success in intern stimulated business ideas (Bhave 1994; Fallgatter 2007). Following this, within this research project the pre–start–up process is subdivided into three stages and delimited from the proximate formation phase **(Figure 1).**

Therefore, the study considers the *pre–start–up process* and, due to smooth transitions, also the *formation phase* –together they describe the *start–up process.* The pre–start–up process includes the phases *sensitization, ideation,* and

(8) **However, within the framework of this research project the start–up process is defined to be initiated earlier, as described below.**
(9) **The forerun phase includes for instance the notional conception of a business idea.**
(10) **The planning phase includes for instance the preparation of the business plan and the specification of the market entry strategy. The planning duration is dependent on the complexity of the business formation and ranges mostly from one to eleven months (Albach 1984; Brüderl/Preisendörfer/Ziegler 1996; Kaiser/Gläser 1999).**
(11) **The formation phase spans for instance financial and personal resource acquisition, business registration, to the point of market entry.**

Figure 1. *Start–up Process.*



Source: Own illustration based on Kaiser/Gläser 1999; Mellewigt/Witt 2002; Szyperski/Nathusius 1999; Mellewigt/Schmidt/Weller 2006; Mugler 1998.

analyzing and *planning.* During the sensitization phase the agreement of the actors to the first systematic and sustained examination of the topic area self–employment is in the foreground (Braukmann 2003). The ideation phase comprises the start–up consideration and notional conception of a business idea. The latter has firstly to be reviewed on the basis of a feasibility study within the analyzing and planning phase, in order to prepare, if applicable, a business plan and configure the market entry strategy. After the business concept has been formed the pre–start–up process is terminated, and the potential founder has to undertake the start–up decision. By approving it, he/she eventually crosses the *point of no return* – which can be considered as distinguishing mark between the pre–start–up process in terms of a start–up conception from the formation phase implementing the start–up conception – and reaches as founder the start–up and formation phase respectively that comprises all activities which bring the enterprise as social, legal and economic entity into being (Jäger 1976). To this belong, for instance, debt capital acquisition, rental or sales agreements regarding accommodation, product development, employee acquisition, and business registration. With the market entry and the herewith accompanied first turnover generation the, also as "only cost phase" called, formation phase ends, and the early growth phase – that is excluded within this study – starts (Szyperski/Nathusius 1999; Unterkofler 1989; Wimmer 1996). However, the formation phase is also considered, since it oftentimes is not definable concretely, because mostly neither the start–up decision in terms of unique, to a certain extent irrevocable, nor a specific act as business commencement can be exactly identified (Mugler 1998).

Up to now, few insights exist, how often the start–up intention in fact results in a firm creation. Hence, little knowledge about both a premature breakup and the duration of the pre–start–up process is available. Certainly, information about the non–realization of start–up intentions could benefit potential founders on the one hand, because they would be able to learn from the mistakes of others and could readjust their plans. On the other hand, political actors could improve entrepreneurship support programs by knowing the critical start–up barriers (Brixy/Hundt/Sternberg 2010), motives and assistance requirements of potential student founders.

In Germany graduates prefer traditional jobs in big enterprises or the public sector. The attitudes in this

country are different from the American dream which nowadays is lived out through entrepreneurship. In Germany security, risk avoidance and social equilibrium are of central local value, and a certain anxiety exists in the community. However, entrepreneurship is based on achievement and the willingness to take manageable risks. It seems that readiness to achievement and risk acceptance are higher than years ago (Klandt 2006). Notably in high–tech sectors, due to bigger financing dimensions, the risk of failure comes along with more serious consequences. In addition, during the economic crisis credit institutes make higher demands on securities with regard to credit initiations. Accordingly, like shown by the Gründerreport 2010,[12] only six percent of consulted potential founders aimed high–tech sectors, what means a loss of 21 percent since 2006. Without resourceful founders Germany loses chances in the future. Due to the demographical development and the Germans' start–up tendencies the country would comprise in 2050 more than a half million less founders – a disastrous prospect. Though the first time since four years in Germany conspicuous more persons are intending creating an enterprise,[13] the chief motive is – like expected during crises times (Weber 2009) – the way out of unemployment. Realizing own ideas and self–realization respectively seems being less important. Unfortunately, especially the quality and innovation of the business concepts lacks behind (Deutscher Industrie– und Handelskammertag e.V. 2010; Öchsner 2010). This indeed is not a positive signal for future innovations accompanied by the creation of high–skilled jobs.

In Germany, on the one hand, necessity–driven business creations are traditionally very strong represented, and idea–based start–ups typify constantly a low level since 2006 on the other hand (Brixy/Hundt/Sternberg 2010). But precisely opportunity entrepreneurship has positive effects on economic development (Acs/Varga 2005; Acs/Desai/Hessels 2008). Thus, student start–up encouragement should indeed focus primarily on opportunity–driven entrepreneurship realized by potential student entrepreneurs having innovative business ideas in mind. However, it should not neglect necessity–driven business intentions but assist potential founders to link their push motive to pull motives like self–actualization and the realization of own business ideas in order to contribute eventually nevertheless to innovation and employment. Due to the bad estimation of entrepreneurial qualifications in Germany (Brixy/Hundt/Sternberg 2010) that has most significantly a hindering effect on student start–up propensities (Ruda/Martin/Ascúa/Danko 2009a) this seems being also accomplishable by imparting general entrepreneurial basic skills to the students at their universities.

At least until middle of 2009 the impacts of the economic crisis on start–up intentions and activities have been low. Neither the economic upturn between 2006 and 2008 nor the following recession had a statistically significant effect on Germany's *Total Early–Stage Entrepreneurial Activity* (TEA) measured by the Global Entrepreneurship Monitor. However, the *Nascent Entrepreneurship Rate* has declined during the economic slump (Brixy/Hundt/Sternberg 2010), leading to the assumption that in times of crises potential founders oftentimes delay their intended start–up realization until their prospects of debt capital are better.

This research project aims to analyze, whether the highlighted results and cause–effect relationships respectively are also shown by the target group of business students.

From the above discussed the following hypotheses (H) are deducted:

(12) **The *Gründerreport* (Founder Report) is executed by the *Deutscher Industrie– und Handelskammertag* (DIHK), i.e. *Association of German Chambers of Industry and Commerce*.**
(13) **In the crisis year 2009 the number of consulted potential founders increased 14 percent, compared to 2008.**

H1: The economic crisis does not influence the start–up propensity.

H2: The economic crisis influences the intended start–up time.

H3: The economic crisis influences the necessity–driven start–up motive.

H4: The economic crisis does not influence realizing own ideas as start–up motive.

H5: The economic crisis does not influence self–actualization as start–up motive.

3. Research Design

On the basis of a literature review a theoretical reference framework of student business start–up propensities (Ruda/Martin/Danko 2008a) has been derived, in order to highlight and test potential influencing factors within the student start–up process. In addition, to analyze the student start–up intentions in the nearer sense, the *Foundation Ambition Types–Model* (Ruda/Martin/Ascúa/Danko 2008) has been applied.[14] It "shows that a more intense examination of foundation over time enables a gradual or volatile emergence of a stronger foundation intention" (Ruda/Martin/Danko 2009b). Only such a procedural approach offers an adequate analysis of structural and situational influencing factors on the possibly emerging start–up intention within the pre–start–up process and follows the necessary aim group specification (Ruda/Martin/Danko 2009a; Ruda/Martin/Ascúa/Danko 2009a).

Consequential, a standardized questionnaire has been developed and used to survey, besides others, business students at four German universities (of applied sciences) during their lessons. This methodology counters the shortcoming of internet–based surveys because it enables a higher return rate (Müller–Böling/Klandt 1993; Schnell/Hill/Esser 1995; Driescher 1999) and avoids biases through self–selection effects of the surveyed students (Brockmann/Greaney 2006). Therefore, more realistic results are generated that, furthermore, are able to question the results of online questionings within this subject area.

Both undergraduates and postgraduates with several years of work, leadership and business start–up experiences – appropriate to managerial research (Witte 1968) – have been questioned since the winter term 2006/2007 at four German universities (of applied sciences). Hence, two samples have been generated, namely a pre–crisis sample (pcs) as well as a during–crisis sample (dcs),[15] at which the students surveyed since fall 2008, when the biggest crash of the financial markets since 1929 commenced and impacted drastically the economies around the globe (Schäfer 2009), typify the dcs. This allows comparing entrepreneurial characteristics of 629 business students polled before the recession with those of 325 business students questioned during the economic downturn.

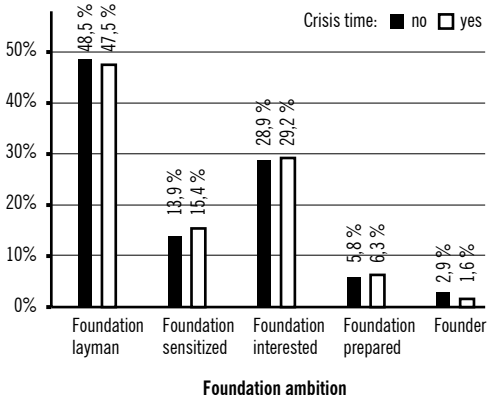
4. Results

In both samples the gender is distributed almost equally, the pre–crisis sample (pcs) consists to 48 percent of females and the during–crisis sample to 52 percent. The pcs includes with one quarter more students between 26 and 29 years than the dcs with

(14) "The foundation ambition types are categorized in the following way. The *foundation–layman* has not dealt with foundation at all; the *foundation–sensitized* has not yet considered foundation; the *foundation–interested* has already considered foundation but has not started to prepare foundation; the *foundation–preparer* is already engaged in the preliminary foundation; and the *founder* has already founded a company" (Ruda/Martin/Danko 2009b).

(15) The data set surveyed since the winter term 2009/2010 has been left out to avoid biases, because in the meanwhile the ending of the economic recession has been communicated throughout the community, and thus the students' start–up intentions and entrepreneurial characteristics could have been affected again, possibly into the contrary direction.

Figure 2. *Start–up Ambition.*



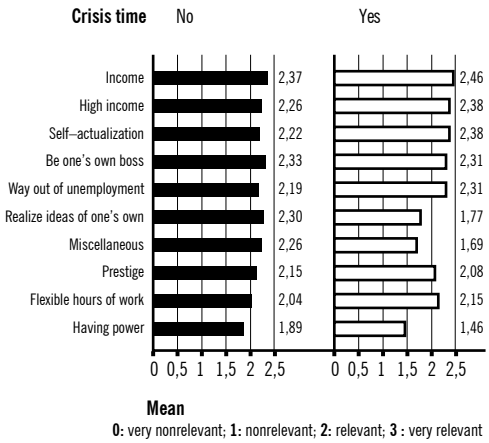
nine percent, whereas the latter contains to a higher extent younger students up to 25 years as well as older students being 30 or older. However, in both samples the majority (two thirds of the pcs, and 77 percent of the dcs) is aged between 20 and 25 years. The pcs students are usually enrolled in higher semester groups than their fellow students from the dcs, though only 2.4 percent are postgraduates, compared to almost one tenth within the dcs.

Relating to the *Foundation Ambition Types* (Ruda/Martin/Ascúa/Danko 2008), and thus to the start–up propensity in the nearer sense, like assumable when viewing **Figure 2,** no statistically significant[16] differences exist between the two samples, affirming *H1,* that is the economic crisis seems to have no impact on the start–up propensity of business students. However, the *foundation–laymen* (have not dealt with business venturing at all) cover with almost one half in both samplings the biggest fraction, followed by the *foundation–interested* (have already considered business venturing) with nearly one third in each case, the *foundation–sensitized* (have not yet considered business venturing) with 14 and 15 percent respectively, the *foundation–preparers* (are already engaged in the preliminary business venturing) each with around six percent and finally the *founders* (have already founded an enterprise) with almost three percent of the pcs and 1.6 percent of the dcs (Figure 2). Altogether, the students of both samples represent approximately a similar start–up ambition. Nevertheless, the biggest differences (more than one percentage point) exist in view of the foundation–sensitized, followed by the founders. The former are typified stronger within the dcs, whereas the pcs students have already founded more businesses than their counterparts from the dcs. This leads on the one hand to the assumption that, possibly also due to the economic downturn, within business administration courses the professors and academics respectively have recognized stronger the importance of entrepreneurship and have dealt more with this topic than before the recession – at least in a little extent. On the other hand, the economic crisis seems to have some reducing impacts on the concrete realization of the business students' start–up intents. Admittedly, because of the non–significant interrelations, these assumptions have to be considered carefully.

The start–up climate in Germany is viewed by circa the half of the pcs students as rather friendly, compared to two thirds of the dcs students, thus, the economic slump does not worsen but obviously ameliorate the evaluation of the start–up climate in general, what could be caused, for instance, by a potentially increased view of self–employment as vocational alternative during recessions or by a higher readiness to take risks in already more difficult and challenging times. Indeed, with 62 percent of the dcs students are at least willing to take risks, compared to 58 percent of the pcs. In contrast, 29 percent of the pcs students have a business idea in mind, whereas this is less the case regarding 27

(16) **The significance level is defined as follows: non–significant: $p > .05$; significant: $p \leq .05$; very significant: $p \leq .01$; most significant: $p \leq .001$.**

Figure 3. *Start–Up Motives.*



percent of the dcs. Furthermore, in both samples the students estimate approximately a medial start–up probability of four tenths. In terms of the start–up time the pcs students usually plan to create their businesses in 4.6 years, compared to a clearly higher averaged intended start–up time of 5.7 years within the dcs, confirming *H2* due to most significant differences. However, when interpreting these findings some sample differences like age and semester should be considered.

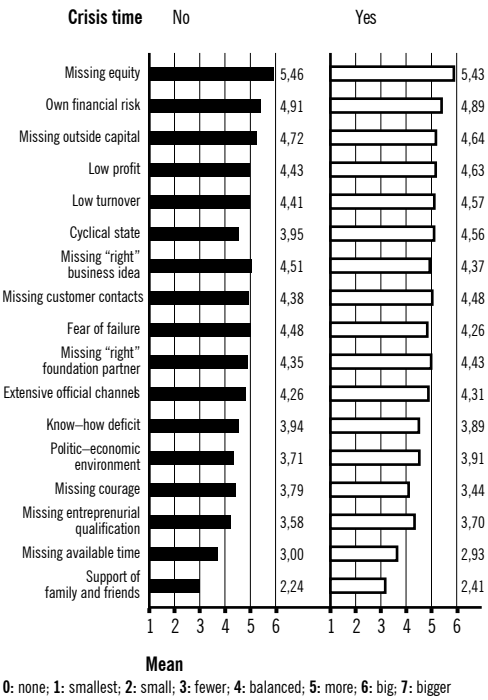
Regarding start–up motives, the three factors *generating income, autonomy,* and *realizing own ideas* are the three most important to the pcs students, whereas the dcs students assess *generating income,* high income, and *self–actualization* as most determining motivators to create a business. On average, the pcs students view *autonomy, realizing own ideas, miscellaneous factors, prestige,* and *having power* as more important than the dcs, to whom usually *generating income, high income, self–actualization, the way out of unemployment,* and *flexible hours of work* are more relevant **(Figure 3).** An analysis of the necessity–driven start–up motive *way out of unemployment* shows very significant differences between both samplings, confirming *H3,* that is the economic crisis seems to influence the motive of a necessity–driven enterprise formation by business students. Because no significant differences between the samples exist in respect of the start–up motives *realizing own ideas* and *self–actualization,* also *H4* as well as *H5* are supported. Thus, the recession seems to have no significant impacts on business students' start–up motives of realizing own business ideas and self–actualization.

Almost one third of the business students questioned before the crisis have dealt at least one year with entrepreneurship, versus nearly 29 percent of the dcs. Moreover, the pcs students have used, with two on average, more sources of entrepreneurship information than their dcs counterparts (1.8) and possess with almost three tenths more leadership experience, compared to 24 percent of the dcs. However, 61 percent of both samples strive to team start–ups. In contrast, with 31 percent the dcs students tend stronger being self–employed on sideline basis than the pcs students with 29 percent, what could be caused, amongst others, by the higher necessity–driven but, due to fewer business ideas, more hesitant start–up motivation of the former – not a positive signal for future innovations based on opportunity entrepreneurship. This assumption could be supported by the fewer amount of estimated necessary seed capital (148,186 euros) as well as by the lower assumed time needed to be established on the market (5.2 years) that specify the dcs students on average, compared to 192,919 euros and 5.3 years respectively referring their fellow students from the pcs. However, with almost 73 percent the dcs students are more willing to pay for business start–up consultation, versus seven tenths of the pcs.

With respect to start–up support preferences, the pcs students consider *contact bourses with enterprisers, coaching and consulting* as well as *business plan workshops* and *start–up–specific contact points* respectively as most important supply measures by their universities, whereas the dcs students evaluate beside *entrepreneurship courses* also *coaching and consulting* as well as *contact bourses with enterprisers* as most favored. The dcs students prefer stronger *busi-*

Figure 4. *Start–up Support Preferences.*

Figure 5. *Start–up Hurdles.*



ness plan workshops, start–up–specific contact points, meetings and discussions with professors, impulsion financing, miscellaneous factors, and *incubators* than their dcs counterparts, to whom *coaching and consulting, entrepreneurship courses, contact bourses with enterprisers,* and *business games* are desired stronger **(Figure 4).** Altogether, the pcs students seem to require more start–up support offered usually in later phases of the start–up process (i.e. *impulsion financing and incubators)* than the dcs students who in contrast prefer (i.e. with *entrepreneurship courses and business games)* typically stronger entrepreneurship encouragement provided in earlier stages of the start–up process, what could be supported also by the on average later intended start–up time of the business students from the dcs.

Considering start–up hurdles, the students of both samples estimate *missing equity* definitely as most start–up hindering, followed in each case by *own financial risk* and *missing outside capital.* The pcs students view the financing factors *(missing equity* and *missing outside capital)* as well as some individual–based parameters *(own financial risk, fear of failure, missing courage, missing "right" business idea, know–how deficit,* and *missing available time)* as stronger start–up difficulties, whereas the dcs students assess, not surprisingly, the economic framework and condition *(low profit, low turnover, cyclical state, missing customer contacts, extensive official channels,* and *politico–economic environment)* as higher start–up barriers, and additionally *missing "right" start–up partner, missing entrepreneurial qualifications,* and *support of family and friends* **(Figure 5).** Hence, the questioned students experience the state of the economic framework obviously to be worsened by the economic crisis and represent during recessions more courage and less fear of failure concerning their potential enterprise formation.

5. Conclusions

The results show the economic crisis having no significant impact on the surveyed business students' start–up propensities in terms of the foundation ambition types. However, because of a slightly higher fraction of *foundation–sensitized* in the dcs, it should be checked, if within business administration courses the professors and academics respectively have dealt more intensely with entrepreneurial issues than before the recession. In addition, the economic slump seems having reducing impacts on the concrete realization of the business students' start–up intents, like shown by a on average clearly higher intended start–up time within the dcs, letting assume that, in the meanwhile, the students are not prepared in such an extent for entrepreneurship than before the economic downturn and are challenged stronger in view of obtaining credit capital on the basis of more professionally worked out business plans respectively. In fact, the business students questioned during the crisis have dealt fewer with entrepreneurship, have used less sources of entrepreneurship information, and represent fewer leadership experiences than the pcs students. In contrast, by now the business students evaluate better the start–up climate in general, what could be caused by a potentially increased view of self–employment as vocational alternative during recessions or by a higher readiness to take risks in already more difficult and challenging times. Indeed, the economic crisis influences significantly the motive of a necessity–driven enterprise formation by the questioned business students. Considering that the dcs students have more seldom a business idea in mind, tend stronger to self–employment on sideline basis, estimate less necessary seed capital as well as fewer time needed being established on the market, this is not a positive signal for their potential future innovations based on opportunity entrepreneurship. At least, they do not represent significant lower the realization of own ideas as well as self–actualization as start–up motives than the pcs students but typically prefer more intensely entrepreneurship encouragement provided in earlier stages of the start–up process. Furthermore, the questioned students experience the state of the economic framework obviously to be worsened by the economic crisis and represent during recessions more courage and less fear of failure concerning their potential enterprise formation.

Admittedly, when interpreting these results some sample differences, for instance regarding age, semester quantity, and the portions of postgraduates, have to be kept in mind. However, it can be concluded that nowadays the students need primarily a start–up sensitization and impartment of entrepreneurial basis knowledge that can be attained assumedly best on the basis of entrepreneurship courses, followed – in a stepwise and procedural manner – by further entrepreneurship support measures that are integrated into a serviceable entrepreneurship infrastructure at the universities. Students necessitate general entrepreneurial competencies in order to being able to mature as potential entrepreneurs during their educational process at their universities. In this connection, a solely and detached financial entrepreneurship support – as this is oftentimes the case – is neither sufficient to originate competent entrepreneurs nor to assist them adequately. "Students and academics should appreciate their college and university respectively – the location where specialized knowledge about their subsequent professionalism is imparted – as advisory center of excellence regarding their individual vocational career options, considering the huge personal importance and momentousness of the foundation decision" (Ruda/Martin/Danko 2009b).

All students and graduates with their normally higher qualifications should be regarded and assisted as possible founders of high potential firms that develop markets with basic innovations, also during global recessions when resources are reallocated, and therefore are able to create jobs far over average, in particular to other high–skilled graduates. Considering that almost the half of the students are catego-

rized as foundation–laymen (persons who are at least unopposed to a potential entrepreneurial activity), highlights an enormous potential of entrepreneurship encouragement to animate them, besides the other foundation ambition types, to entrepreneurship.

Further research has to deal with the appropriate conceptual design of entrepreneurship education and support. Amongst others, particularly the question how to advance adequately the students' start–up motivation from economic self–realization should be focused. In this context, the governments are called to enact purposeful prerequisites for the arrangement and establishment of an entrepreneurship–supportive culture at the universities. Thereby, undergraduates and postgraduates could be stronger qualified and facilitated to generate entrepreneurial appreciation and competencies to be already during studies sensitized and open for the identification of entrepreneurial opportunities and, moreover, also willing to realize them finally.

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