

Analyzing Entrepreneurial Potential – A Comparison of Students in Germany and Greece

Walter Ruda

Kaiserslautern University of Applied Sciences, Campus Zweibrücken, Germany

Thomas A. Martin

Ludwigshafen Rhine University, Germany

Rubén Ascúa

Universidad Tecnológica Nacional (UTN), Facultad Regional Rafaela, Argentina

Benjamin Danko

**ZMG German Center for Entrepreneurship
TU Dresden, IHI Zittau, Germany**

Irene Fafaliou

University of Piraeus, Greece

The empirical project “Starting up Businesses and Entrepreneurship by Students” (GEST-study) aims to compare criteria influencing student start-up propensities and activities in diverse countries. The students in Germany are more often interested in and preparing their start-up than their fellows in Greece who are more frequently founders. In both countries the students seem being not sufficiently prepared to business venturing and, thus, need the impartment of entrepreneurial knowledge and skills. The findings indicate the importance of advancing entrepreneurship support in Germany and Greece by considering the frameworks and individual requirements with diverse resource accesses and positioning in the start-up process.

INTRODUCTION

“Dire figures on unemployment and manufacturing activity in the euro zone’s weakest members [...] highlighted the scale of the currency bloc’s economic problems, days after finance ministers boosted their bailout fund in a bid to fend off the debt crisis” (Hannon & Brittain, 2012). Compared to all other states of the currency union Greek with nearly 160 is mostly overindebted in terms of government debt as a percentage of the gross domestic product (GDP). Though Germany with almost 82 percent lies below the euro zone’s average of 87.4 percent, it also does not hit the European Union’s Treaty of 60 percent (Hannon & Brittain, 2012). However, disregarding bank and private lending, with 22.6bn euros Germany is most exposed considering the Greek government debt. Within this Greek crisis recently the Greek

politicians approved a bill on austerity measures – demanded by European Union, International Monetary Fund, and European Central Bank (the so-called Troika) – in order to receive further 130bn euros bailout loans and enable a write-off of further 100bn euros of Greece's debt to private banks (British Broadcasting Corporation [BBC], 2012). With these already agreed emergency loans a Greek bankruptcy – because of due loan repayments of 14.4bn euros on March 20, 2012 – could be averted, and Greece is forced to put a comprehensive privatization and austerity program into action that aims reducing the debt from 160 to 120 percent of the GDP by 2020 (BBC, 2012; Spiegel Online, 2012a). Despite the recent as well as the first bailout package of 110bn euros for Greece in May 2011, the Troika's financial auditors and the Greek Prime Minister Lucas Papademos already talk about a necessary third bailout package (Spiegel Online, 2012b) – highlighting the drastic extent of the Greek debt crisis that has de facto negative impacts on growth prospects of the states using the euro. Referring Eurostat, in February 2012 unemployment in the euro zone peaked with 10.8 percent its highest rate since June 1997, at which Greece with the second highest rate of 21 percent (Spain: 23.6%) suffered the most rapid raises. Germany, in contrast, with 5.7 percent seems to be conspicuously lower affected by joblessness than the most member states, but also by a decrease in manufacturing activity (Hannon & Brittain, 2012).

In connection with the austerity measures, amongst others, Greece is demanded to advance its competitiveness particularly by reducing the cost of doing business in the country (BBC, 2012), stimulating also new venture creation. The emergence and growth of new enterprises performs a positive effect on economic output, due to knowledge spillovers (Romer, 1986), intensifying competition, and an increase in the diversity of economic units (Glaeser, Kallal, Scheinkman, & Shleifer, 1992). Moreover, newly created enterprises counter the staff reduction of many big companies based on productivity gains and – like in the Greek case due to austerity measures – of state-owned organizations. The hence resulting employment insecurity animates several persons – that formerly associated launching their own business with a too high risk – to create their own and secure jobs (Scarborough & Zimmerer, 2006). In this respect, universities play an important role in enhancing students' and graduates' business start-up activities, regarded as source for economic growth (Birch, 1979; Folster, 2000; Fafaliou, 2010). Students and graduates as (proximate) work-seekers are particularly strong affected by the labor market difficulty and are exceedingly considered as possible founders of high potential firms that are based on seminal innovations and create both stable and highly qualified jobs (Uebelacker, 2005). However, only up to four percent of startups contribute determining to the critical portion of newly created jobs and economic growth (Szerb & Imreh, 2007).

Therefore, students are confronted with high expectations of becoming entrepreneurs, leading to the necessity of sensitizing them to self-employment and assist them during their start-up processes with adequate support programs. Though, within entrepreneurship little research considers the processes occurring prior to the existence of new business ventures, rather it focuses mostly on already existing enterprises and their success factors (Mellewigt, Schmidt, & Weller, 2006). In order to derive proposals how to support new venture initiation appropriately to requirements, the decisive criteria influencing the decision of the potential entrepreneurs to start a new business have to be analyzed (Ruda, Martin, Acúa, & Danko, 2011). Entrepreneurship education follows the presupposition that entrepreneurial action is learnable (Bécharde & Grégoire, 2005; Kuratko, 2005; Bouncken, 2010). When more students and graduates perceive self-employment as occupational alternative, instead of focusing solely on dependent work, thereby emerging new high-potential firms could thwart labor scarcities and contribute positively to the appropriate reallocation of resources in the economies. Influences of the personal career choice as self-extension can be measured, so that individuals who are open-minded and reserved to entrepreneurship are distinguishable (Sinclair, 2008). However, the research area targeting on start-up propensities of students is relatively new (Kuratko, 2003; Gibb, 2005; Klapper & Leger-Jarniou, 2006; Fafaliou, 2010).

This paper aims to analyze the criteria influencing business start-up propensities and activities of students in Germany and Greece from a resource-based view, in order to provide an overview of the prospective trend of students' and graduates' venture creation and entrepreneurship in these two countries. A growing examination of attitudes and intentions towards entrepreneurship as an important predictor of

entrepreneurial activity exists. Insights into main influencing factors of start-up propensities enable proposals how to support adequately students' and graduates' entrepreneurial activities based on their needs.

ENTREPRENEURSHIP IN GERMANY AND GREECE

Like shown amongst others by Katz and Gartner (1988) within the entrepreneurial process the construct of intentionality is crucial. Entrepreneurial intentions, on the one hand, are strongly connected with the business start-up activity. On the other hand, they depend on perceptions of desirability and feasibility – which are influenced by exogenous factors – as well as on the propensity to act upon opportunities, as illustrated in Shapero's model of the entrepreneurial event (Krueger & Carsrud, 1993). Resource endowment advantageously influences the development of start-up propensities. Individuals from different economic contexts and with different social networks have various accesses to knowledge, capital and incentives. The success of the start-up process depends on the capability of preventing resource shortfalls which can be managed primarily with individual networks (Witt, 2004; Tiessen, 1997). Thus, demand-driven student entrepreneurship support based on insights into the main parameters of start-up propensities of students has to be implemented context-oriented. That is, beside the individual motives, obstacles, requirements and preferences concerning an entrepreneurial activity also the socio-economic context has to be considered. Start-up support adequate to a special aim group in one region may not be expected to fit to another, for instance with a different culture. "Specifically, imported motivation or training programmes, based on assumptions about entrepreneurs derived from 'foreign' models, are unlikely to meet with success in 'contexts where the task and psychic environments may be vastly different'" (Drakopoulou & Patra, 2002). In this regard, the diverse framework requirements have to be respected. The politico-economic situation and development in the diverse countries as well as the existing cultural background and the population's mindset respectively exerts a determining influence on the availability of entrepreneurship-related institutions and publications as well as on the start-up decision of the community members (Scarborough & Zimmerer, 2006). As expected, the Global Entrepreneurship Monitor (GEM) highlights both within this article compared countries Germany and Greece to show different Total Early-Stage Entrepreneurial Activity Rates (TEA) of the working population groups between 18 and 64 years, at which Greece reaches eight percent and Germany 5.6 percent (Bosma, Wennekers, & Amorós, 2012). Developed nations normally represent lower entrepreneurial activities than developing countries, however, due to exceptions they cannot merely be ascribed to economic wealth. Such additional causations can solely be revealed based on international comparisons. The GEM indeed offers information about entrepreneurial criteria in the analyzed countries, but not explicitly regarding students. As the paper's target is to explore the entrepreneurial potential in Germany and Greece in the scope of the student aim group, the results could be different, however, the GEM serves nevertheless as a basis for deriving some hypotheses to being tested in the student context, besides the comparison of further criteria with potential influences on entrepreneurial ambitions and start-up activities respectively.

Following international experts, Germany currently represents the best public start-up and Small and Medium-sized Enterprises (SME) support infrastructure worldwide (Brixy, Hundt, & Sternberg, 2010). So much more astonishing is the relatively low entrepreneurial activity in Germany which, therefore, can be assumed to being ascribed stronger to sociocultural basic conditions for entrepreneurship. This is also affirmed by the actual GEM country report that reveals besides the educational preparation for entrepreneurial activities explicitly shortcomings concerning social values and norms. The hence resulting deficient entrepreneurial culture in Germany is regarded as most serious start-up obstacle. Though in Germany many persons plan a business creation, there is a lack of the concrete start-up realization, for what too strict regulations and high taxes are held responsible. However, indications of an improvement exist that lead to an ascertained ambivalence between a by trend start-up-friendly social acceptance of entrepreneurship on the one hand, and the inhibiting basic attitude and motivation in the population in matters of a personal entrepreneurial engagement on the other hand (Brixy, Hundt, Sternberg, & Vorderwülbecke, 2011). Graduates in Germany traditionally favor jobs in big companies or the public

sector. Safety, risk avoidance and social stability are basic values. The German society is relatively anxious. However, entrepreneurship comes along with achievement and the willingness to bear manageable risks. Both factors are evaluated as being stronger than in the past (Klandt, 2006). Particularly high-tech sectors are affected by immense financial risks. After the recent economic crisis nascent entrepreneurs need to provide more securities in order to receive loans. Referring the Founder Report 2010, high-tech sectors are targeted by only six percent of the consulted nascent entrepreneurs, meaning a one fifth decline since 2006, and moreover the business concepts lack quality and innovative potential. Though in the last four years conspicuous more persons aim for starting their own business, idea realization seems to be a minor incitement, whereas the start-up motivation from economic necessity dominates (Deutscher Industrie- und Handelskammertag [DIHK], 2010). According to these results, no beneficial impacts on future innovations and the creation of highly qualified jobs can be expected. However, this is not surprising as necessity-driven entrepreneurship exists traditionally commonly in Germany, compared to the more seldom opportunity-driven entrepreneurship (Brixy et al., 2010) with its beneficial impacts on economic development (Acs & Varga, 2005; Acs, Desai, & Hessels, 2008).

In Greece entrepreneurs indicate the economic environment and the Greek policies in the last 25 years have not encouraged entrepreneurial activity at all. However, despite prevailing entrepreneurship barriers, as to mention bureaucracy as strongest start-up hindering, an increasing trend of self-employment exists. But many of the nascent entrepreneurs waive financial assistance to prevent being controlled by the state (Karagiannis, 1999; Sarri & Trihopoulou, 2004), instead they benefit from their strong-tied network activities regarding resource acquisition (Tiessen, 1997; Drakopoulou & Patra, 2002). However, the Greek economy and society with a high preference for independence and a strong entrepreneurial spirit (Maggina, 1992) is characterized as relatively open to entrepreneurial activities of many so-called “self-made” Greek entrepreneurs (Karagiannis, 2003), but like in Germany also the Greeks work rather as employees in private enterprises or the public sector (Apergis & Pekka-Economou, 2010), at which the latter serves as biggest employer of graduates (Patinotis & Stavroulakis, 1997). This could be also ascribed to the fact that – for instance in the case of two female – entrepreneurship support programs implemented by the Ministries of Labor and Development were not based on sufficient information and “research to support rational planning and the evaluation of the effectiveness of policies” (Sarri & Trihopoulou, 2004) and thus did not correspond with the necessities of the nascent entrepreneurs. Greece is besides Portugal the only country in the European Union with a females’ entrepreneurial propensity comparable to the United States, whereas female entrepreneurship declined in Germany in the 1990’s (Apergis & Pekka-Economou, 2010). Also the female aim group seems to be motivated to entrepreneurship based on both pull and push factors (Glancey, Greig, & Pettigrew, 1998; Sarri & Trihopoulou, 2004), however, Greeks usually do not target high-tech sectors (Apergis & Pekka-Economou, 2010), what could be also due to the lacking growth-encouraging external environment – characterized by a slow pace of technology and innovation development due to the deficient infrastructure and Research and Development resulting to EU-uncompetitive capital-, technology- and knowledge-intensive Greek sectors (Dimelis, 2004) – on the one hand, and on risk of failure as a high start-up barrier on the other hand (IOBE, 2005). In the context of start-up support measures, mentoring by entrepreneurs seems to be highly requested (Sarri & Petridou, 2007). However, in order to exploit its student entrepreneurial potential, Greece facing an excessive number of students needs clearly an appropriate development of entrepreneurship education, based on an adequate extension of the infrastructure and teaching personnel, considering “Greece occupies the lowest positions in all categories of expenditures pertaining to education, e.g. instructors’ salaries, expenses per pupil or student, and percentage of GDP spent on education” (Patinotis & Stavroulakis, 1997).

Like already illustrated Greece represents with eight percent a higher TEA than the German’s of 5.6 percent, but it seems being stronger necessity-driven (ca. 26%) and lower improvement-driven (ca. 36%) than in Germany with approximately 19 and 55 percent respectively (Bosma et al., 2012). This could be due to the in Greece second highest unemployment rate of 21 percent between the EU states (Germany: 5.7%) (Hannon & Brittain, 2012), at which precisely the young age group – to that students usually belong – is affected by the still increasing joblessness (Petmesidou, 1996). However, between necessity-

and opportunity-driven entrepreneurship fluent intersections exist considering for instance individual learning capacities or possible alterations in external circumstances (Welter, Smallbone, Isakova, Aculai, & Schakirova, 2004; Aidis & van Praag, 2004) within the dynamic start-up process. Whereas referring the GEM in Greece the entrepreneurial intentions (10%) and the perceived capabilities (50%) are higher (Germany: 5 and 37% respectively), Germans indicate clearly stronger perceived opportunities (35%) than Greeks (11%). In both countries the fear of failure is approximately equally anchored, though little higher in Germany (42%) than in Greece (38%). Apparently, entrepreneurship is assessed stronger as a good career choice by Greeks (61%) than by Germans (55%), in contrast in Germany the media attention for entrepreneurship (50%) is higher and successful entrepreneurs achieve a higher status (78%) than in Greece (32 and 69% respectively) (Bosma et al., 2012).

Diverse entrepreneurial framework conditions influence the existence of entrepreneurial opportunities, capacities as well as preferences and cause ultimately entrepreneurial activities (Bosma et al., 2012). By comparing the key indicators of the entrepreneurial framework condition between the two analyzed countries, Germany is assessed almost continuously better than Greece, that is regarding: entrepreneurial finance, entrepreneurship as a relevant political issue, SME-beneficial taxes and regulations, government entrepreneurship programs, entrepreneurship education at post-secondary levels, research and development transfer, SME-beneficial commercial and legal infrastructure, market openness, SME-beneficial physical infrastructure, and SME-beneficial cultural and social norms. Greece only scores higher in the scope of market dynamics and is equal concerning entrepreneurship education at basic schools (Bosma et al., 2012).

Referring Hofstede's cultural dimension, Greece is affected stronger by power distance (60) as well as uncertainty avoidance (112) and lower by individualism (35) than Germany (35, 65 and 67 respectively) (Hofstede, 2001), letting assume students in Greece striving stronger to power as entrepreneurs, being less risk-willing and tending more to team start-ups than students in Germany.

Out of the above, the following hypotheses (*H*) – to be checked within the student aim group – can be derived for the country comparison between Germany and Greece:

- H1: Students in Greece are more start-up ambitious than students in Germany.*
- H2: Female students in Greece are more start-up ambitious than female students in Germany.*
- H3: Students in Greece show a higher start-up probability than students in Germany.*
- H4: Students in Greece perceive a better start-up climate than students in Germany.*
- H5: Students in Germany are more risk-willing than students in Greece.*
- H6: Students in Greece are motivated stronger by necessity-driven entrepreneurship than students in Germany.*
- H7: Students in Germany are motivated stronger by opportunity-driven entrepreneurship than students in Greece.*
- H8: Students in Greece strive stronger for power as start-up motive than students in Germany.*
- H9: Students in Germany perceive missing entrepreneurial qualifications as more start-up hindering than students in Greece.*
- H10: No significant differences exist between students in Germany and Greece regarding the fear of failure as start-up hurdle.*
- H11: Students in Greece perceive bureaucracy as more start-up hindering than students in Germany.*
- H12: Students in Greece perceive missing debt capital as more start-up hindering than students in Germany.*
- H13: Students in Greece perceive the politico-economic environment as more start-up hindering than students in Germany.*
- H14: Students in Greece tend stronger to team start-ups than students in Germany.*

RESEARCH DESIGN

The paper presents results of a large scale survey. More than 1,800 students were surveyed at one Greek and three German universities (of applied sciences) during their lectures in the winter semester 2009/2010 and the summer term 2010 with a standardized questionnaire. The original German questionnaire has been derived from a literature-review, was translated into English and finally into Greek by native speakers and experts. However, in order to minimize potential translation biases, the form handed out to the students in Greece was bilingual in Greek and English (Brislin, 1970; Fafaliou, 2010). The survey's methodology is described in relationship with a theoretical framework of student start-up propensities (Ruda, Martin, & Danko, 2008) considering the relevant classified pre-start-up procedural influencing factors, for instance socio-economic, motivational and hindering aspects. In this connection *foundation ambition types* have been developed within the GEST-study (Ruda, Martin, Ascúa, & Danko, 2008) enabling a start-up procedural-oriented examination of the potential entrepreneurs, whereby recommended actions appropriate to requirements can be deduced (Ruda, Martin, & Danko, 2009). However, within the limits of this paper the focus is set on a comparison of the whole country samples in order to give an overview of similarities and differences between the entrepreneurial potential of students in Germany and Greece. It has to be emphasized that also individuals having not dealt with entrepreneurship at all or having not yet considered starting a business can be regarded as potential entrepreneurs, that is being not yet sensitized to entrepreneurship or being not (yet) interested in the topic does de facto not mean an exclusion from a possible future start-up realization, it solely means that currently there is no (significant) progress toward an entrepreneurial activity and within the start-up process respectively. Therefore, also students uninterested in business venturing have been surveyed allowing insights into potential reasons of their disinterest. Furthermore, the personally written form of the questioning counters weaknesses of internet-based surveys having already being conducted concerning the topic, whereas the available literature analyzing start-up ambitions of Greek students lacks behind. The German sample comprises 1,438 students from the subject groups of business administration, engineering, informatics, architecture, and applied life sciences. The Greek sample contains 364 students of business administration, economics, and informatics. Both in Germany and in Greece also postgraduates have been questioned.

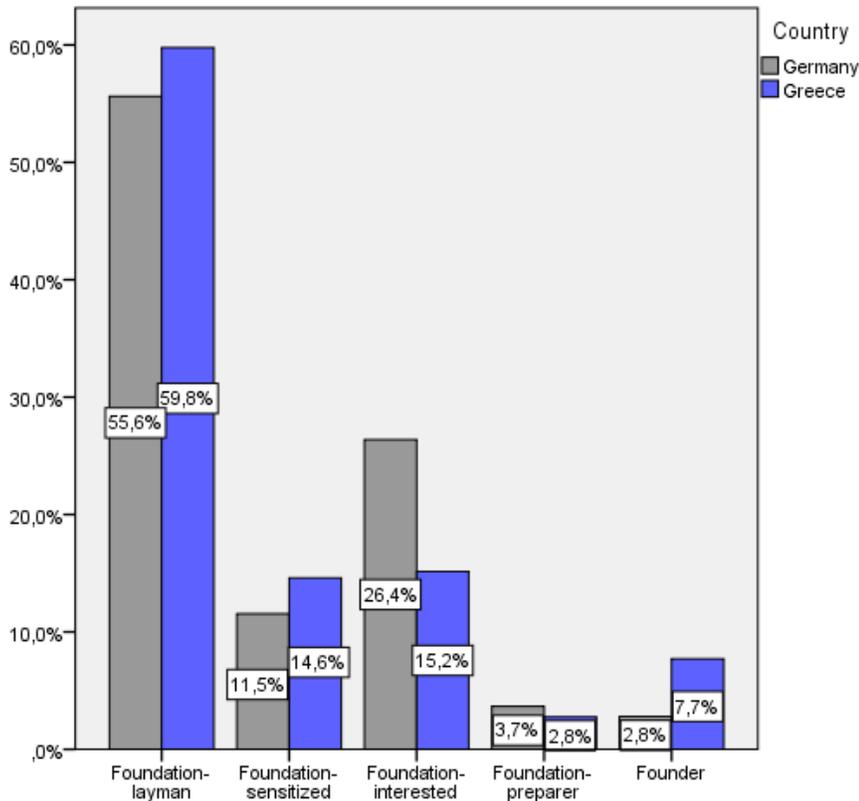
RESULTS

In the German sample every second student is enrolled in engineering, 21 percent in business administration, 20 percent in informatics, six percent in architecture and three percent in applied life sciences. 89 percent of the surveyed students in Greece belong to business administration and economics respectively, and 11 percent to informatics. With 48 percent most of the German students study up to three, 30 percent between four and six, 12 percent more than six semesters, and the remaining 10 percent are postgraduates. In contrast, the Greek sample comprises correspondingly 20, 26, 42, and 11 percent (rounding difference). Thus, compared to the German students their Greek fellows are usually enrolled in higher semesters, at which both samples comprise around one tenth of postgraduates. Concerning the students in Greece with 57 percent females predominate, whereas in Germany almost one third is feminine, what could particularly be due to the high portion of (prospective) engineers in the German sample. The latter represents four percent students younger than 20, 74 percent between 20 and 25, 14 percent between 26 and 29 years, five percent between 30 and 35, and three percent older than 35 years. The Greek sample contains 25, 68, five, one, and only 0.3 percent respectively (rounding difference), hence the Greek students tend to be younger than their German comparison group. Some further descriptive results are illustrated in Table 1 in the appendix.

Regarding the GEST-study's start-up ambition types (Ruda, Martin, Ascúa, & Danko, 2008) in both countries the *foundation-laymen* (have dealt with foundation not at all) predominate clearly. In the Greek sample they represent ca. 60 percent and in the German ca. 56 percent. The *foundation-sensitized* (have considered foundation not yet) can be found somewhat more often between the Greek students (ca. 15

percent) than in the German group (ca. 12 percent). Considerable differences exist in terms of the *foundation-interested* (have already considered foundation but has not started to prepare foundation), being included with ca. 26 percent in the German sample and only with ca. 15 percent between the students in Greece. *Foundation-preparers* (are already engaged in the preliminary foundation) are comprised with around four percent in the German sample and with almost three percent in the Greek comparison group. *Founders* (have already founded) are represented in Germany solely with nearly three percent and in Greece with about eight percent indicating the relatively biggest difference (Figure 1).

FIGURE 1
STUDENT START-UP AMBITION TYPES IN GERMANY AND GREECE



However, due to statistically nonsignificant differences *H1* has to be rejected, what is also the case to *H2* that analyzes only female students (Table 2 in the appendix). The students in Greece estimate a higher start-up probability (46%) than their fellows in Germany (36%), confirming *H3* (Table 2). Only 16 percent of the Greek students evaluate the national start-up climate as rather foundation friendly, compared to 64 percent of their comparison group, causing a significant difference, however because *H4* assumes a contrariwise cause-effect relationship, it has to be dismissed (Table 2).

The Greek students state evidently a higher risk propensity (64 percent are rather willing to take risks) than the students in Germany of whom 56 percent are rather risk proposed. Despite significant differences *H5* expecting the opposite has to be refused (Table 2). The Greek students have with 35 percent markedly more frequently a business idea in mind than the 26 percent in Germany, being in accord with their higher start-up probability. Both the Greek students and their fellows from Germany estimate as potential start-

up time in average approximately five years, at which the latter name a slightly earlier moment, indicating that both groups are not yet prepared enough to create a business.

Within the scope of motivational factors to the Greek students most of the start-up motives are more relevant than to their German fellows, to whom solely self-actualization and slightly the way out of unemployment are of more importance. Since no significant differences between the two samples consist referring the latter, interpreted as necessity-driven start-up motive, *H6* has to be dropped (Table 2). Idea-realization, despite the above mentioned clearly oftener existent business ideas in the Greek group, is only marginally more relevant to them. However, due to not significant differences of this opportunity-driven factor *H7* is rejected (Table 2). The German sample regards self-employment as most crucial, followed by income as well as idea-realization, the way out of unemployment, and high income. Comparatively, the students in Greece evaluate income as most important start-up motive, followed by miscellaneous motivational factors, high income, idea-realization, and self-actualization. Having power is the least relevant start-up motive to both groups, nevertheless it is significantly more relevant to the students surveyed in Greece, confirming *H8* (Table 2).

A bigger quantity of the start-up hurdles are viewed by the students in Germany as more hindering regarding an entrepreneurial activity than by their Greek fellows. The German group evaluates missing equity as biggest difficulty, followed by own financial risk, missing outside capital, missing customer contacts, the cyclical state, fear of failure as well as missing right business ideas. The students in Greece perceive thy cyclical state as most start-up hindering, followed by missing equity, extensive official channels, low profit, low turnover as well as the politico-economic environment, and missing outside capital. As assumed, missing entrepreneurial qualifications are a significant bigger start-up difficulty to the German students, approving *H9* (Table 2). *H10*, anticipating no differences between the two samples concerning fear of failure as start-up barrier, has to be refused because the students in Germany evaluate fear of failure significantly as more start-up inhibiting (Table 2). Following the Mann-Whitney-Wilcoxon test no significant differences concerning extensive official channels, that is bureaucracy, as start-up hurdle exist between the two samples, in contrast the Kolmogorov-Smirnov test indicates the opposite (Table 2), suggesting that *H11* can neither refused nor affirmed certainly and should be tested again in further research. *H12* assumes Greek students perceive missing debt capital as bigger start-up hurdle than students in Germany, however, because the latter regard this factor significantly as more start-up hindering, the supposition has to be rejected (Table 2). In contrast, *H13* is verified because students in Greece evaluate indeed the politico-economic environment significantly stronger as start-up difficulty (Table 2).

The Students in Germany normally have dealt more time with entrepreneurship (19 percent between one and three years and nine percent more than three years) than their comparison group from Greece (13 and three percent respectively). In contrast, the Greek students have used more sources of entrepreneurship information (two in average), compared to their German fellows (1.4). The former have more often self-employed parents, whereas the students in Germany are more frequently surrounded by other self-employed persons in their private environment. Furthermore, the German sample comprises considerable more leadership experiences than the Greek group, that is, 70 percent of the former and 88 percent of the latter have no leadership experience. With 61 percent the students in Germany tend significantly stronger to found team-based than one third of their Greek fellows, however, *H14* has to be dismissed because it expects the opposite cause-effect relationship (Table 2). Two thirds of the German students strive being self-employed on regular basis, compared to each other Greek, letting assume that many business ideas of the latter are rather non-innovative, especially by considering the relatively small fraction of intended team start-ups that could compensate a lower exertion. However, with usually 6.9 years the Greek students estimate needing more years in order to be established on the market and fewer seed capital (almost 188,000 euros) than their fellows in Germany who forecast in average 5.4 years and approximately 209,000 euros seed capital. 69 percent of the students in Greece have already thought of the possibility of business creation, what applies to solely 54 percent of their German counterparts.

Interestingly, except start-up-specific contact points that are slightly more relevant to the German sample, the students in Greece request all other university start-up support measures stronger. In Greece

as most desired start-up support miscellaneous measures are mentioned, followed by coaching and consulting, contact courses with enterprisers (the two latter are not surprising considering the above mentioned highly requested “mentoring by entrepreneurs”), courses, and meetings and discussions with professors. In contrast the German students assess coaching and consulting as most important start-up support, followed by contact courses with enterprisers, courses, specific contact points, and impulsion financing. Within both rankings business plan workshops and business games comprise a fewer importance, but in the German sample specific contact points and impulsion financing are ranked noticeably better than in the Greek group, suggesting the students in Germany being further advanced within the start-up process, like also underpinned by their earlier prognosticated average start-up time.

IMPLICATIONS

On the one hand considerably more of the students in Greece have already found an enterprise, on the other hand they state a higher probability of business creation than their German comparison group, though the latter comprises more foundation-preparers and noticeable more students interested in starting a business leading to a usually slightly higher German students’ start-up ambition. Moreover, the German group perceives a clearly better national entrepreneurial climate, whereas the Greek students are somewhat more risk-willing and have more frequently a business idea in mind. However, both samples estimate as potential start-up time in average approximately five years, indicating that both groups are usually not yet prepared enough to create a business. This is also underpinned by the fact that in both samples more than every second student has dealt with business venturing not at all.

Two thirds of the German students strive being self-employed on regular basis, compared to each other Greek, letting assume that many business ideas of the latter are rather non-innovative, especially by considering the relatively small fraction of intended team start-ups in the Greece case that could compensate a lower exertion. However, to both samples the start-up motivation from economic necessity seems to be equally strong pronounced and relatively important, what is also the case regarding opportunity-driven entrepreneurship. Moreover, the Greek students strive stronger for having power in case of business venturing, whereas to their German fellows self-actualization is of higher importance. The latter normally have dealt more time with entrepreneurship and comprise considerable more leadership experiences than their Greek counterparts, nevertheless they are stronger hindered by the presumption of missing entrepreneurial qualifications as well as lacking debt capital and perceive a bigger fear of failure in case of starting a business. In contrast, the students in Greece perceive higher bureaucratic and politico-economic-environmental start-up hurdles. However, the latter request usually stronger start-up support measures from their universities than the German students, what could be also due to the better public start-up and SME support infrastructure in Germany.

When interpreting these results one has to consider some sample differences, for instance the comparatively relatively high fraction of engineering students and hence males in the German group. Moreover, although the students in Greece usually are enrolled in higher semesters, they tend to be younger than their fellows in Germany.

Altogether, the findings indicate the importance of advancing entrepreneurship education and support in both countries by considering the contextual framework conditions as well as individual requirements of the students having various accesses to resources and being located in diverse phases of the start-up process. In order to receive knowledge how to upgrade accordingly entrepreneurship support infrastructures for students and graduates in Germany and Greece, further analyses with an aim group-differentiated focus should be undertaken which is enabled by the GEST-study due to the provision of resource-based data about the questioned students who ultimately are the deciders on their potential entrepreneurial activity. Also individuals having not dealt with entrepreneurship at all or having not yet considered starting a business can be regarded as potential entrepreneurs, that is being not yet sensitized to entrepreneurship or being not (yet) interested in the topic does de facto not mean an exclusion from a possible future start-up realization, it solely means that currently there is no (significant) progress toward an entrepreneurial activity and within the start-up process respectively. The target should not be

heightening solely the amount of enterprises by forcing students to entrepreneurial activity but rather to sensitize them to business creation, teaching them entrepreneurial basic knowledge, and offering them support during all phases of their start-up processes, so that they are already during their studies open to look for and to perceive potential business opportunities that maybe could result – possibly after some years of work experience – in innovations and high-potential firms respectively or at least facilitate them to create their own jobs and realizing themselves and their ideas respectively.

REFERENCES

Acs, Z.J., Desai, S. & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics*, 31, (3), 219-234.

Acs, Z.J. & Varga, A. (2005). Entrepreneurship, agglomeration and technological change. *Small Business Economics*, 24, (3), 323-334.

Aidis, R. & van Praag, M. (2004). Illegal Entrepreneurship Experience. *Tinbergen Institute Discussion Paper*, TI 2004-105/3, Amsterdam.

Apergis, N. & Pekka-Economou, V. (2010). Incentives and Female Entrepreneurial Activity: Evidence from Panel Level Data. *International Atlantic Economic Society*, 16, 371-387.

BBC (2012). Q&A: Greek debt crisis. *BBC News*. <<http://www.bbc.co.uk/news/business-13798000>>. Accessed on Apr. 14, 2012.

Béchar, J.-P. & Grégoire, D. (2005). Entrepreneurship Education Research Revisited: The Case of Higher Education. *Academy of Management Learning and Education*, 4, (1), 22-43.

Birch, D. (1979). *The Job Generation Process*. MIT Program on Neighborhood and Regional Change, Cambridge, MA.

Bosma, N., Wennekers, S. & Amorós, J.E. (2012). *Global Entrepreneurship Monitor. 2011 Extended Report: Entrepreneurs and Entrepreneurial Employees Across the Globe*. Global Entrepreneurship Research Association (GERA).

Bouncken, R.B. (2010). International Entrepreneurship: Eine empirische Untersuchung von Gründungstreibern, -hemmnissen und -absichten in vier Ländern. *Zeitschrift für KMU und Entrepreneurship*, 58, (2), 93-119.

Brislin, R.W. (1970). Back translation for Cross-Cultural Research. *Journal of Cross-Cultural Psychology*, 1, (3), 185-216.

Brixy, U., Hundt, C. & Sternberg, R. (2010). *Global Entrepreneurship Monitor (GEM). Länderbericht Deutschland 2009*, Hannover & Nürnberg.

Brixy, U., Hundt, C., Sternberg, R. & Vorderwülbecke, A. (2011). *Global Entrepreneurship Monitor. Unternehmensgründungen im weltweiten Vergleich. Länderbericht Deutschland 2010*, Hannover & Nürnberg.

DIHK (ed.) (2010). *Pioniere gesucht. DIHK-Gründerreport 2010*, Berlin.

- Dimelis, S.P. (2004). *Prospects for the Greek Economy in the Post-enlargement Era*. Oxford & Malden, MA.
- Drakopoulou, S. & Patra, E. (2002). National differences in entrepreneurial networking. *Entrepreneurship & Regional Development*, 14, 117-134.
- Fafaliou, I. (2010). Entrepreneurial Intentions of University Students: Evidence from Greece. *Proceedings of the 5th European Conference on Innovation and Entrepreneurship, National and Kapodistrian University of Athens, 16-17 September 2010*.
- Folster, S. (2000). Do Entrepreneurs Create Jobs? *Small Business Economics*, 14, (2), 137-148.
- Gibb, A.A. (2005). *Towards the Entrepreneurial University. Entrepreneurship Education as a lever for change*. A Policy Paper for the National Council for Graduate Entrepreneurship (NCGE) UK.
- Glaeser, E.L., Kallal, H.D., Scheinkman, J.A. & Shleifer, A. (1992). Growth of Cities. *Journal of Political Economy*, 100, (6), 1126-1152.
- Glancey, K., Greig, M. & Pettigrew, M. (1998). Entrepreneurial dynamics in the small business service sector. *International Journal of Entrepreneurial Behavior & Research*, 4, (3), 249-268.
- Hannon, P. & Brittain, A. (2012). Euro-Zone Data Paint Bad Picture for Growth. *The Wall Street Journal*. <http://online.wsj.com/article/SB10001424052702304023504577319013025430878.html?mod=djemalertEuropenews&_nocache=1333509862725&user=welcome&mg=id-wsj#project%3DEZNUMBS0312%26articleTabs%3Darticle>. Accessed on Apr. 04, 2013.
- IOBE (2005). *Entrepreneurship in Greece 2004–2005*, Athens.
- Hofstede, G. (2001). *Lokales Denken, globales Handeln. Interkulturelle Zusammenarbeit und globales Management*. 2nd ed. Munich.
- Karagiannis, A.D. (1999). *Entrepreneurship and the Economy*, Athens.
- Karagiannis, A. D. (2003). *The entrepreneurial environment and the Greek economic policy*. University of Piraeus, Piraeus.
- Katz, J. & Gartner, W. (1988). Properties of emerging organizations. *Academy of Management Review*, 13, (3), 429-441.
- Klandt, H. (2006). Das aktuelle Gründungsklima in Deutschland. Deutschland und seine Zukunft. *Innovation und Veränderung in Bildung, Forschung und Wirtschaft. Festschrift zum 75. Geburtstag von Prof. Dr. Dr. h. c. Norbert Szyperski*. Ed. H. J. Oppelland. Lohmar & Köln, 117-147.
- Klapper, R. & Leger-Jarniou, C. (2006). Entrepreneurship Intention among French Grande Ecole and University Students: An Application of Shapero's Model. *Industry and Higher Education*, 20, (2), 97-110.
- Krueger, N.F. & Carsrud, A.L. (1993). Entrepreneurial Intentions: Applying the theory of planned behavior. *Entrepreneurship & Regional Development*, 5, (4), 315-330.

- Kuratko, D.F. (2003). Entrepreneurship Education: Emerging Trends and Challenges for the 21st Century. *Coleman Foundation White Paper series for the U.S. Association of Small Business & Entrepreneurship*.
- Kuratko, D.F. (2005). The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *Entrepreneurship: Theory and Practice*, 29, (5), 577-597.
- Maggina, A.G. (1992). SMES in Greece: Toward 1992 and Beyond. *Journal of Small Business Management*, 30, (3), 87-90.
- Mellewigt, T., Schmidt, F. & Weller, I. (2006). Stuck in the Middle. Eine Empirische Untersuchung zu Barrieren im Vorgründungsprozess. *ZfB. Special Issue 4/2006. Entrepreneurship*. Ed. Ehrmann, T. & Witt, P. Wiesbaden, 93-115.
- Patiniotis, N. & Stavroulakis, D. (1997). The development of vocational education policy in Greece: a critical approach. *Journal of European Industrial Training*, 21, (6/7), 192-202.
- Petmesidou, M. (1996). Social Protection in Greece: A Brief Glimpse of a Welfare State. *Social Policy & Administration*, 30, (4), 324-347.
- Romer, P.M. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, 94, (5), 1002-1037.
- Ruda, W., Martin, Th. A., Ascúa, R. & Danko, B. (2008). Foundation Propensity and Entrepreneurship Characteristics of Students in Germany. *Proceedings of the 53th World Conference of the International Council for Small Business*, Halifax.
- Ruda, W., Martin, Th. A., Ascúa, R. & Danko, B. (2011). Señales de entrepreneurship a partir de una comparación entre muestras de estudiantes alemanes y argentinos. *Los desafíos de la integración en el siglo XXI: Presentaciones del I Congreso Internacional de la Red de Integración Latinoamericana 2011*. Universidad Nacional del Litoral, Santa Fe, Argentina. Ed. Theiler, J.C., Maíz, C. & Agramunt, L.F. 181-205.
- Ruda, W., Martin, Th. A. & Danko, B. (2008). Essential Attitudes in Founding of New Ventures and Cultivating Entrepreneurship among Students: the German Experience. *Scientific Papers University of Latvia. Management*, 721, 360-376.
- Ruda, W., Martin, Th. A. & Danko, B. (2009). Target Group-Specific Design of Student Entrepreneurship Support – A German Example Focusing on Start-Up Motives and Barriers. *Acta Polytechnica Hungarica. Journal of Applied Sciences. Special Issue on Management, Enterprise and Benchmarking*, 6, (3), 5-22.
- Sarri, K. & Trihopoulou, A. (2004). Female entrepreneurs' personal characteristics and motivation: a review of the Greek situation. *Women in Management Review*, 20, (1), 24-36.
- Sarri, K. & Petridou, E. (2007). *Mentoring support for startup female entrepreneurs: The Greek situation*. National Council for Graduate Entrepreneurship, Working Paper 002/007.
- Scarborough, N. & Zimmerer, T. (2006). *Effective Small Business Management: An Entrepreneurial Approach*. 8th ed., New Jersey.

Sinclair, R.F. (2008). The First Step toward a Theory of the Entrepreneurial Career. *Proceedings of United States Association for Small Business and Entrepreneurship USASBE Conference 2008*, San Antonio, 773-796.

Spiegel Online (2012a). 130-Milliarden-Paket. Weltwährungsfonds segnet Griechenland-Hilfen ab. *Spiegel Online*. <<http://www.spiegel.de/wirtschaft/soziales/0,1518,821654,00.html>>. Accessed on Apr. 04, 2013.

Spiegel Online (2012b). Schuldenkrise. Griechenland tastet nach drittem Rettungspaket. *Spiegel Online*. <<http://www.spiegel.de/wirtschaft/soziales/0,1518,824842,00.html>>. Accessed on Apr. 04, 2013.

Szerb, L. & Imreh, S. (2007). Entrepreneurship Education and Entrepreneurial Attitudes of Hungarian Students: An International Comparison. *Proceedings of 5th International Conference on Management, Enterprise and Benchmarking, MEB 2007, Budapest*. Ed. Budapest Polytechnic. Budapest.

Tiessen, J.H. (1997). Individualism, collectivism and entrepreneurship: A framework for international comparative research. *Journal of Business Venturing*, 12, (5), 367-384.

Uebelacker, S. (2005). *Gründungsausbildung. Entrepreneurship Education an deutschen Hochschulen und ihre raumrelevanten Strukturen, Inhalte und Effekte*. Wiesbaden.

Welter, F., Smallbone, D., Isakova, N., Aculai, E. & Schakirova, N. (2004). Female Entrepreneurship in the Ukraine, Moldova and Uzbekistan: Characteristics, Barriers and Enabling Factors and Policy Issues. *Access to Financing and ICT: Women Entrepreneurs in the ECE Region*, United Nations. Ed. UNECE. Geneva, 39-52.

Witt, P. (2004). Entrepreneurs' Networks and the Success of Start-Ups, *Entrepreneurship and Regional Development*, 16, 391-412.

APPENDIX

TABLE 1
DESCRIPTIVE STATISTICS OF STUDENT ENTREPRENEURIAL CHARACTERISTICS

Variables	Germany		Greece	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gender (0: female; 1: male)	0.68	0.466	0.44	0.496
Age (0: < 20 years; 1: 20-25 years; 2: 26-29 years; 3: 30-35 years; 4: > 35 years)	1.27	0.724	0.82	0.577
Number of terms	4.43	3.035	6.08	2.337
National start-up climate (0: rather foundation adverse; 1: rather foundation friendly)	0.64	0.479	0.16	0.367
Dealt with business start-up (0: none; 1: considered not yet; 2: perhaps in future; 3: in preparation; 4: already founded)	0.86	1.096	0.84	1.238
Risk propensity (0: very risk averse; 1: risk averse; 2: willing to take risks; 3: very willing to take risks)	1.56	0.630	1.67	0.725
Foundation idea (0: no; 1: yes)	0.26	0.438	0.35	0.477
Probability of founding (in percent)	35.50	26.662	46.49	24.842
If, when willing to found (in years)	5.01	3.111	5.14	3.213
Importance concerning start-up (0: very non-relevant; 1: non-relevant; 2: relevant; 3: very relevant)				
Way out of unemployment	2.18	0.828	2.16	0.751
Income	2.44	0.590	2.72	0.483
Self-actualization	2.45	0.662	2.32	0.707
Prestige	1.78	0.793	2.05	0.836
High Income	2.15	0.723	2.56	0.560
Flexible hours of work	2.02	0.793	2.10	0.824
Having power	1.32	0.819	1.88	0.883
Be one's own boss	1.98	0.812	2.19	0.868
Realize ideas of one's own	2.44	0.641	2.48	0.683
Miscellaneous	1.93	1.159	2.57	0.852
Difficulties concerning start-up (0: none; 1: smallest; 2: small; 3: less; 4: balanced; 5: more; 6: big; 7: biggest)				
Missing „right“ business idea	4.51	2.204	3.82	1.595
Missing „right“ foundation partner	4.37	1.959	4.11	1.654
Missing entrepreneurial qualification	4.00	1.952	3.49	1.936
Missing courage	3.92	2.219	2.90	2.124
Missing available time	3.47	2.136	3.33	1.895
Missing customer contacts	4.63	1.921	3.96	1.750
Missing equity	5.31	1.825	4.72	1.374
Missing outside capital	4.81	1.837	4.42	1.490
Know-how deficit	3.89	1.930	3.90	1.643
Own financial risk	5.09	1.848	4.11	1.599
Low turnover	4.42	1.751	4.44	1.393
Low profit	4.37	1.774	4.55	1.411
Support from family and friends	2.46	2.072	2.41	2.042
Politico-economic environment	4.05	1.891	4.44	1.512
Cyclical state	4.62	1.811	4.77	1.401
Fear of failure	4.51	2.120	3.75	1.711
Extensive official channels	4.43	2.099	4.62	1.446

TABLE 1
Continued

Variables	Germany		Greece	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Desired college support (0: very non-relevant; 1: non-relevant; 2: relevant; 3: very relevant)				
Courses	2.22	0.700	2.51	0.639
Business game	1.85	0.754	2.28	0.699
Business plan workshop	1.95	0.745	2.38	0.701
Contact bourse with enterprisers	2.24	0.710	2.57	0.663
Meetings and discussions with professors	1.96	0.719	2.39	0.666
Coaching and consulting	2.26	0.670	2.61	0.562
Impulsion financing	2.03	0.779	2.10	0.873
Specific contact point	2.06	0.712	2.05	0.786
Incubator	1.65	0.741	1.82	0.939
Miscellaneous	1.57	1.025	2.90	0.316
Dealt with entrepreneurship (0: < 1 year; 1: 1-3 years; 2: > 3 years)	0.36	0.637	0.20	0.472
Used entrepreneurship information sources	1.45	2.095	2.04	2.049
Self-employed person(s) in private environment (0: no; 1: yes)				
No	0.51	0.500	0.55	0.498
Mother	0.09	0.293	0.16	0.364
Father	0.20	0.402	0.34	0.474
Other person(s)	0.25	0.435	0.06	0.233
Experience in leadership (0: no; 1: < 2 years; 2: 2-5 years; 3: > 5 years)	0.47	0.821	0.15	0.454
How to found (0: alone; 0.5: alone and/or team; 1: team)	0.61	0.479	0.33	0.469
Extent of self-employed work (0: sideline basis; 0.5: sideline and/or regular basis; 1: regular basis)	0.67	0.467	0.48	0.500
Preferential sector (0: no; 1: yes)				
Commerce	0.28	0.447	0.39	0.488
Consulting	0.24	0.425	0.26	0.441
IT	0.19	0.391	0.20	0.401
Other	0.20	0.398	0.12	0.323
Market to operate (0: local; 1: regional; 2: national; 3: international)	1.74	0.922	1.38	1.075
Established on the market (in years)	5.41	3.952	6.85	4.616
Seed capital (in euros)	209,435	648,517	187,728	670,456
Prefer to practice activity (0: no; 1: yes)				
At home	0.22	0.413	0.11	0.313
In the office off home	0.61	0.489	0.79	0.409
Direct at the customer's	0.13	0.333	0.07	0.249
Pay for start-up consultation (0: no; 1: yes)	0.58	0.494	0.70	0.457
Already thought of start-up possibility (0: no; 1: yes)	0.54	0.498	0.69	0.464

TABLE 2
RESULTS OF HYPOTHESES TESTING

<i>H</i>	Hypothesis Description	Spearman Correlation ^a	<i>p</i> ^b	<i>p</i> ^c
<i>H1</i>	<i>Students in Greece are more start-up ambitioned than students in Germany.</i>	-.031	.190 (ns)	.100 (ns)
<i>H2</i>	<i>Female students in Greece are more start-up ambitioned than female students in Germany.</i>	-.046	.239 (ns)	.633 (ns)
<i>H3</i>	<i>Students in Greece show a higher start-up probability than students in Germany.</i>	.184	.000 (***)	.000 (***)
<i>H4</i>	<i>Students in Greece perceive a better start-up climate than students in Germany.</i>	-.405	.000 (ns) ^d	.000 (ns) ^d
<i>H5</i>	<i>Students in Germany are more risk-willing than students in Greece.</i>	.078	.001 (ns) ^d	.025 (ns) ^d
<i>H6</i>	<i>Students in Greece are motivated stronger by necessity-driven entrepreneurship than students in Germany.</i>	-.025	.299 (ns)	.183 (ns)
<i>H7</i>	<i>Students in Germany are motivated stronger by opportunity-driven entrepreneurship than students in Greece.</i>	.038	.110 (ns)	.264 (ns)
<i>H8</i>	<i>Students in Greece strive stronger for power as start-up motive than students in Germany.</i>	.261	.000 (***)	.000 (***)
<i>H9</i>	<i>Students in Germany perceive missing entrepreneurial qualifications as more start-up hindering than students in Greece.</i>	-.098	.000 (***)	.000 (***)
<i>H10</i>	<i>No significant differences exist between students in Germany and Greece regarding the fear of failure as start-up hurdle.</i>	-.181	.000 (ns) ^d	.000 (ns) ^d
<i>H11</i>	<i>Students in Greece perceive bureaucracy as more start-up hindering than students in Germany.</i>	.009	.714 (ns)	.000 (***)
<i>H12</i>	<i>Students in Greece perceive missing debt capital as more start-up hindering than students in Germany.</i>	-.112	.000 (ns) ^d	.000 (ns) ^d
<i>H13</i>	<i>Students in Greece perceive the politico-economic environment as more start-up hindering than students in Germany.</i>	.098	.000 (***)	.000 (***)
<i>H14</i>	<i>Students in Greece tend stronger to team start-ups than students in Germany.</i>	-.230	.000 (ns) ^d	.000 (ns) ^d

^aNegative sign indicates stronger German sample's value; missing negative sign indicates stronger Greek sample's value.

^bAccording to the Mann-Whitney-Wilcoxon test.

^cAccording to the two-sample Kolmogorov-Smirnov test.

^dNotwithstanding insignificant due to contrariwise assumed cause-effect relationship.

ns: not significant at $p > .05$ (not significant).

*Significant at $\leq .05$ (significant).

**Significant at $p \leq .01$ (very significant).

***Significant at $p \leq .001$ (most significant).