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Comparing Entrepreneurial Criteria of Students in Germany and China within the Pre-start-up Process

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Abstract: The paper emerges from the international empirical research project "Starting up Businesses and Entrepreneurship by Students" (GESt Study). It compares start-up ambitions and entrepreneurial criteria of students in Germany and China within the pre-start-up process. The used questionnaire is based on a theoretical reference framework of student start-up propensities. Because of the subject- and process-oriented nature of the analysis, student requirements can be analyzed target group-differentiated. The results implicate students in Germany being hindered particularly by their comparatively high risk avoidance and students in China with their stronger intrinsic start-up motivation lacking especially in basic entrepreneurship sensitization.

Key words: GESt Study; entrepreneurial criteria; pre-start-up process; Germany; China

JEL code: L26

1. Introduction

The universal aim of upgrading the economic competitiveness through innovativeness is accompanied by thorough discussions of entrepreneurship. Since the Lisbon Agenda 2000 (European Council, 2000) entrepreneurship has been included intensely as strategic topic in the politico-economic agenda in Europe. Entrepreneurship education is focusing particularly on students and graduates respectively because they provide more innovations coming along with steady and qualified employment (Uebelacker 2005; Braukmann 2003; Franke and Lüthje, 2000; Koch, 2002; Görisch, 2002). Especially high potential firms establish new markets but comprise the least start-up fraction (Reinemann, 2007).

In Germany the government adopted laws, policies and programs to advance entrepreneurship, for example

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"EXIST" (University-Based Business Start-Ups) in 1998, enlarged to "EXIST III" in 2007 (Federal Ministry of Economics and Technology, 2011). In 2010 the German Federal Ministry of Economics and Technology commenced the initiative "Founder Nation Germany" targeting to cultivate the entrepreneurial mind and to assist especially innovation-based start-ups (German Bundestag, 2010). The German Entrepreneurship Week in November 2010, one outcome of this program, caused beside other activities an improvement of entrepreneurship education in Germany (Mathis, 2010).

In China the government approved the relevancy of entrepreneurship on economic growth and adopted new laws and policies facilitating the financial acquisition for entrepreneurs since the late 1990s to advance business creations. For example in 1997 the Partnership Enterprise Law of the People's Republic of China was adopted (Clarke, 2003), in 1999 the Sole Proprietorship Law as well as the Amendment to the Constitution that focuses on the protection of private property, and in 2002 the Small Business Promotion Law (Li, Zhang, and Matlay, 2003). However, basic restrictions to the access of state assistance for private sector progress exist (Atherton, and Smallbone, 2010). Due to the difficult labor market situation of undergraduates the State Council initiated policies to animate students to create their businesses (Mathis, 2010).

Since the 1990s the global economic impact of China has risen immensely. In 2009 China passed Germany's position as the world's export champion and in 2007 Germany's Gross Domestic Product. Furthermore, in 2007 China obtained with 18 percent the largest fraction of foreign investments (Wang, and Campbell, 2010). The emerging prosperity in China is also accompanied by a rise of private consumption and business creation. While most nations worldwide have been affected negatively by the recent economic crisis, it had no considerable influence on China's Gross Domestic Product development (Goldman Sachs International, 2010). However, entrepreneurship education can be categorized as comparatively novel in China. Despite the new business start-up beneficial laws and directives, in China entrepreneurship in general and entrepreneurial intentions in special are widely unexplored (Mathis, 2010; Li, Zhang, and Matlay, 2003).

With the recent economic crisis also the framework of entrepreneurship has shifted—in Germany during recession more necessity-driven enterprises are created (Weber, 2009). Thus, it is important to upgrade entrepreneurial education and support, so that students mature as potential entrepreneurs (Ofstad, 2008). Information about the students' needs regarding business creation is required. However, the pre-start-up process as individual developing and deciding process of potential entrepreneurs with its fundamental economic momentousness (Bamford, Dean, and McDougall, 1999; Brüderl, Preisendörfer, and Ziegler, 1996) is largely unexplored (Mellewigt, Schmidt, and Weller, 2006; Frank, and Korunka, 1996). Further, no accordance exists concerning a basic conception of entrepreneurship education (Gibb, 2002; Volery, and Müller, 2006). Educating a general entrepreneurial competence is postulated and demands a subject-oriented analysis of student requirements (Braukmann, 2003). Solely a personally-oriented analysis about conducive and obstructive procedures within the pre-start-up process will identify how to raise start-up quantity and quality based on adequate entrepreneurship education and assistance.

With 14.4 percent China shows a clearly higher Early-Stage Entrepreneurial Activity (TEA) than Germany with solely 4.2 percent (Kelley, Bosma, and Amorós, 2011). Developed nations usually show lower start-up quotas than developing countries. Because of exceptions lower start-up activities are not simply due to economic wealth. Necessarily otherwise existing causes can only be researched through international comparisons. Hence, cultural diversities are analyzed regarding their impact on student entrepreneurial criteria. The paper aims at highlighting, if students also show these differences and discusses implications regarding the implementation of holistic and/or

individualistic entrepreneurship education and assistance conceptions in Germany and China. Thus, the paper aims at providing an overview, if entrepreneurship education and assistance in China needs a substantially different approach than in Germany.

2. Hypotheses Deduction

With estimated 7.5 percent Germany seems to represent a higher unemployment rate in 2009 than China with 4.3 percent according to the latest estimation in 2009 (Central Intelligence Agency, 2011), leading to the assumption that students in Germany show a stronger start-up motivation from economic need than their counterparts in China:

H1: The student start-up motivation from economic necessity diverges in Germany and China.

Germany's culture is affected obviously lower by power distance and considerably stronger by individualism as well as uncertainty avoidance than China's culture (Hofstede, 2011), thus, one can expect students in China to strive stronger to power as well as team start-ups, whereas students in Germany should be more risk averse:

H2: The student striving for power as start-up motive diverges in Germany and China.

H3: The student ambition to team start-ups diverges in Germany and China.

H4: The student risk propensity diverges in Germany and China.

Moreover, Germany presents with 4.2 a clearly lower TEA than China with 14.4 (Kelley, Bosma, and Amorós, 2011), so that students in China are hypothesized to typify a higher start-up probability as well as a stronger start-up intention than students in Germany:

H5: The student start-up probability diverges in Germany and China.

H6: The student start-up intention diverges in Germany and China.

3. Research Design

The paper presents results of a large scale survey. Almost 1,000 students at three German (761) and two Chinese (217) universities (of applied sciences) were surveyed during their lectures in 2009 and/or 2010 with a standardized questionnaire. The original German questionnaire has been derived from a literature review and was translated by Chinese native speakers and experts into Chinese. The methodology of the survey is described in relationship with a theoretical framework considering the relevant classified pre-start-up procedural influencing factors (Ruda, Martin, and Danko, 2008). Particularly students and graduates—with several years of work and leadership experiences—of engineering, informatics, and business administration have been questioned because they generate the most innovations (Josten, van Elkan, Laux, and Thomm, 2008). The personally written form of the questioning counters weaknesses of self-selection biases of internet-based surveys and leads to higher return rates (Brockmann, and Greaney, 2006; Schnell, Hill, and Esser, 2005). Because of the relatively initial stage of the research project, within this paper the developed hypotheses are tested solely univariately, however, this supports anyhow first insights into potential influences.

4. Results

Some descriptive results are highlighted in Table 1.

Table 1 Descriptive Statistics of Student Entrepreneurial Characteristics

Variables	Germany		China	
	M	SD	M	SD
Gender (0: female; 1: male)	0.70	0.461	0.73	0.447
Age (0: < 20 years; 1: 20-25 years; 2: 26-29 years; 3: 30-35 years; 4: > 35 years)	1.30	0.787	1.19	0.577
Number of terms	4.20	3.389	5.38	2.857
National start-up climate (0: rather foundation adverse; 1: rather foundation friendly)	0.64	0.481	0.48	0.501
Dealt with business start-up (0: none; 1: considered not yet; 2: perhaps in future; 3: in preparation; 4: already founded)	0.90	1.119	0.84	1.325
Risk propensity (0: very risk averse; 1: risk averse; 2: willing to take risks; 3: very willing to take risks)	1.60	0.633	1.87	0.676
Start-up idea (0: no; 1: yes)	0.28	0.452	0.31	0.464
Probability of founding (in percent)	38.29	27.062	40.43	26.450
If, when willing to found (in years)	5.06	2.992	3.50	2.755
Importance concerning start-up (0: very non-relevant; 1: non-relevant; 2: relevant; 3: very relevant)				
Way out of unemployment	2.23	0.803	2.05	0.847
Income	2.46	0.576	2.28	0.609
Self-actualization	2.46	0.649	2.65	0.551
Prestige	1.80	0.802	2.20	0.730
High income	2.17	0.720	2.11	0.693
Flexible hours of work	2.03	0.807	1.99	0.828
Having power	1.33	0.821	2.05	0.714
Be one's own boss	2.00	0.818	2.06	0.802
Realize ideas of one's own	2.47	0.632	2.58	0.612
Miscellaneous	1.75	1.410	1.55	0.775
Difficulties concerning start-up (0: none; 1: smallest; 2: small; 3: less; 4: balanced; 5: more; 6: big; 7: biggest)				
Missing "right" business idea	4.27	2.296	4.06	2.015
Missing "right" foundation partner	4.35	1.997	4.11	1.853
Missing entrepreneurial qualification	3.95	1.960	4.03	1.840
Missing courage	3.83	2.286	3.80	1.983
Missing available time	3.52	2.120	3.36	1.793
Missing customer contacts	4.62	1.958	4.64	1.623
Missing equity	5.26	1.905	4.98	1.565
Missing outside capital	4.72	1.902	4.79	1.524
Know-how deficit	3.83	1.977	4.47	1.710
Own financial risk	5.02	1.870	3.87	1.655
Low turnover	4.28	1.810	3.76	1.528
Low profit	4.23	1.831	3.77	1.645
Support from family and friends	2.43	2.082	3.05	1.849
Politico-economic environment	3.96	1.981	3.80	1.609
Cyclical state	4.54	1.916	3.56	1.450
Fear of failure	4.45	2.140	3.59	1.821
Extensive official channels	4.48	2.128	3.90	1.961
Desired college support (0: very non-relevant; 1: non-relevant; 2: relevant; 3: very relevant)				
Courses	2.26	0.695	2.07	0.727
Business game	1.83	0.776	2.33	0.688
Business plan workshop	1.94	0.752	2.29	0.664

(Table 1 continued)

Variables	Germany		China	
	M	SD	M	SD
Contact bourse with enterprisers	2.25	0.706	2.45	0.667
Meetings and discussions with professors	1.98	0.708	2.06	0.719
Coaching and consulting	2.29	0.669	2.26	0.640
Impulsion financing	2.05	0.773	2.40	0.617
Specific contact point	2.05	0.710	2.23	0.678
Incubator	1.66	0.768	2.00	0.699
Miscellaneous	1.70	1.160	1.44	0.604
Dealt with entrepreneurship (0: < 1 year; 1: 1-3 years; 2: > 3 years)	0.38	0.654	0.14	0.378
Used entrepreneurship information sources	1.47	2.054	2.59	2.705
Self-employed person(s) in private environment (0: no; 1: yes)				
No	0.50	0.500	0.59	0.494
Mother	0.10	0.300	0.07	0.254
Father	0.21	0.410	0.15	0.355
Other person(s)	0.25	0.432	0.17	0.377
Experience in leadership (0: no; 1: < 2 years; 2: 2-5 years; 3: > 5 years)	0.50	0.843	0.43	0.795
How to found (0: alone; 0.5: alone and/or team; 1: team)	0.57	0.481	0.81	0.395
Extent of self-employed work (0: sideline basis; 0.5: sideline and/or regular basis; 1: regular basis)	0.67	0.467	0.64	0.480
Preferential sector (0: no; 1: yes)				
Commerce	0.27	0.443	0.26	0.439
Consulting	0.24	0.426	0.24	0.431
IT	0.18	0.386	0.15	0.360
Other	0.22	0.417	0.24	0.428
Market to operate (0: local; 1: regional; 2: national; 3: international)	1.72	0.931	1.11	0.859
Established on the market (in years)	5.31	3.823	4.53	2.860
Seed capital (in euros)	218,122	632,086	109,523	217,349
Prefer to practice activity (0: no; 1: yes)				
At home	0.23	0.420	0.14	0.346
In the office off home	0.61	0.488	0.61	0.489
Direct at the customer's	0.13	0.338	0.15	0.360
Pay for start-up consultation (0: no; 1: yes)	0.56	0.497	0.56	0.498
Already thought of start-up possibility (0: no; 1: yes)	0.55	0.498	0.31	0.466

From the students in Germany 60 percent study engineering, 16 percent informatics, 14 percent business administration, nine percent architecture, and two percent other subjects. From the students in China almost one third studies business administration, 32 percent engineering, 15 percent informatics, three percent architecture, and 17 percent other study fields. Whereas in the German sample students up to three semesters are overrepresented, in the Chinese sample this is case for students between four and six semesters. Furthermore, in Germany 14 percent of students in postgraduate study courses have been polled, compared to nine percent in China. A third of the students in Germany and 27 percent of the students in China are female. Both samples consist mostly of students between 20 and 25 years (Germany: 72 percent; China: 78 percent). Altogether, the students questioned in Germany are older, and in the Chinese sample no students exist who are older than 35 years, compared to three percent of the German sample.

According to the Foundation Ambition Types of Ruda, Martin, Ascúa, and Danko (2008), in each country the Foundation-layman (has dealt with foundation not at all) represents the biggest fraction: 55 percent in Germany and

65 percent in China. The Foundation-sensitized (has considered foundation not yet) is included each with 10 percent. Noticeable differences exist regarding the Foundation-interested (has already considered foundation but has not started to prepare foundation), that is, this start-up ambition type comprises 28 percent in Germany and solely five percent in China. The Foundation-preparer (is already engaged in the preliminary foundation) can be found to almost four percent between the students in Germany and to 13 percent between their Chinese counterparts. At last, the Founder (has already founded) is represented in Germany with three and in China with six percent. However, all in all students in Germany show a higher start-up interest, whereas their fellow students in China have started more frequently to prepare their business and have founded more often respectively (Figure 1).

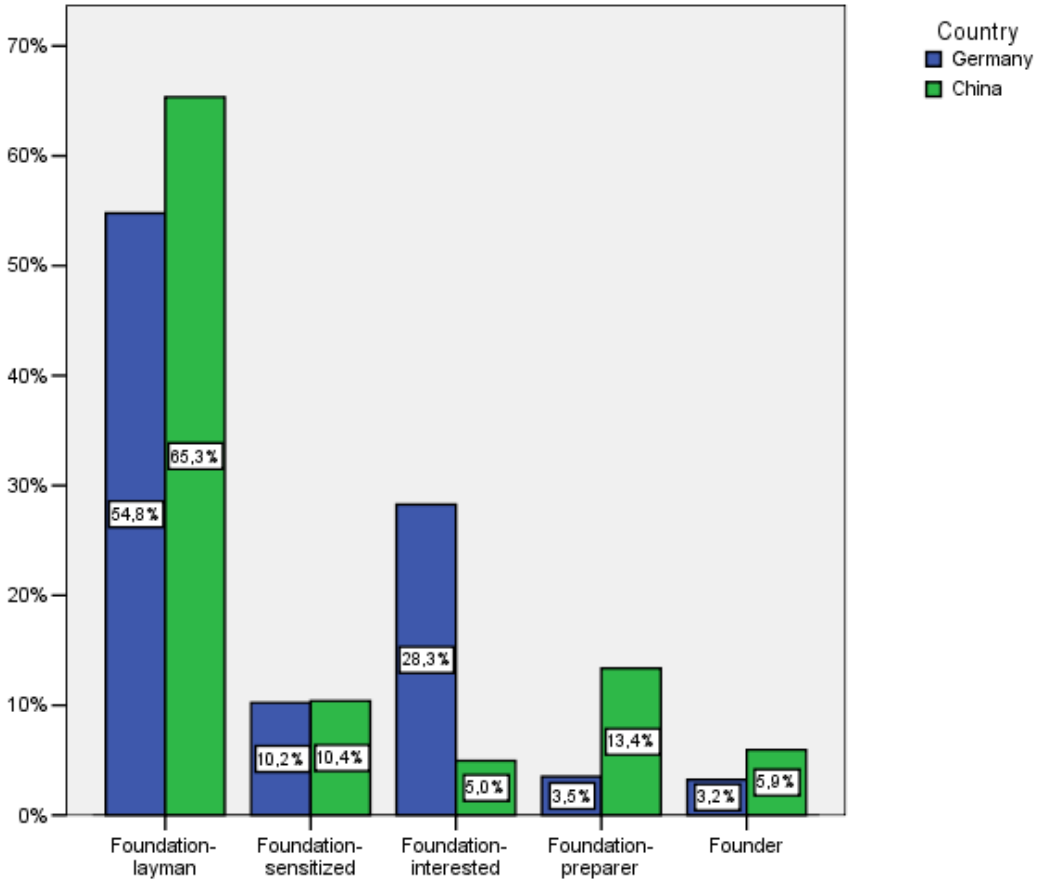

Figure 1 Student Start-up Ambition Types in Germany and China

In Germany the national start-up climate is evaluated by almost two thirds of the polled students as rather beneficial, compared to almost the half of the Chinese sample. The Chinese students show obviously a lower risk aversion (78 percent are rather willing to take risks) than the students in Germany of whom 60 percent are rather risk proposed. Moreover, with 31 percent slightly more Chinese students have a business idea in mind than the 28 percent of their German fellow students. Further, 40 percent of the former estimate to found in future (on average in 3.5 years), compared to 38 percent (averaged with five years) in Germany.

In the context of start-up motives, to the German students most important is realizing own ideas, followed by generating income as well as self-actualization, to the Chinese students these three start-up motives are also the most important ones of which self-actualization however is the most important. Only in Germany one start-up

motive is assessed as rather non-relevant, namely having power which is important to the Chinese students. To the German students the way out of unemployment, generating income, high income, flexible hours of work, and miscellaneous are more relevant start-up motives than to their Chinese counterparts, to whom self-actualization, prestige, having power, autonomy, and realizing own ideas are more fundamental.

Students in Germany usually have dealt longer with entrepreneurship than their Chinese fellow students but have used fewer sources of entrepreneurship information although they are surrounded more often by self-employed persons in their private environment. Besides, they have more leadership experience than the students in China. 57 percent of the German sample intends to found in team and one third prefers being self-employed on sideline basis, compared to 81 percent in China striving to team start-ups and 36 percent focusing on a sideline-based self-employment. In Germany the students estimate to need in average 5.3 years of self-employed activity to be established on the market and approximately 220,000 Euros as seed capital, whereas the Chinese students expect to need 4.5 years and about 110,000 Euros to start up their business. Not surprisingly, the students in China with its large home market tend with five percent fewer than the students in Germany with 23 percent to operate on an international level with their (potential) business. Of both samples 56 percent would pay for business start-up consultation. 55 percent of the students in Germany have already thought of the possibility to found a business, what applies to only 31 percent of their Chinese counterparts.

Concerning start-up barriers, to the students in Germany are most crucial missing equity, own financial risk, missing outside capital, missing customer contacts, and the cyclical state, whereas the students in China mention as most start-up hindering also missing equity, missing outside capital, and missing customer contacts, but furthermore know-how deficit and missing adequate foundation partners. In both countries support from family and friends and missing available time are rather unimportant start-up barriers, and in China additionally the cyclical state and fear of failure. The students in Germany consider missing business ideas, missing foundation partners, missing courage, missing available time, missing equity, own financial risk, low turnover, low profit, the politico-economic environment, the cyclical state, fear of failure, and extensive official channels as more start-up hindering than their Chinese counterparts, to whom missing entrepreneurial qualifications, missing customer contacts, missing outside capital, know-how deficit, and support from family and friends are more crucial.

Concerning university start-up assistance the students in Germany name coaching and consulting as most important, followed by courses, and contact bourses with enterprisers. The latter start-up support is most relevant in China, followed by impulsion financing, and business games. To the Chinese sample miscellaneous start-up support measures are rather non-relevant, and to the students in Germany incubators comprise the lowest importance. In Germany courses, coaching and consulting, and miscellaneous are more fundamental start-up assistance measures than in China, whereas business games, business plan workshops, contact bourses with enterprisers, meetings and discussions with professors, impulsion financing, specific contact points, and incubators are more important to the Chinese students.

In order to accomplish insight into beneficial target group-specific—based on the foundation ambition types—entrepreneurship assistance programs at universities in developed and developing countries, it is necessary to collect information about the suitability of a cross-national or a country-specific approach. This selection process could be accomplished by investigating possible significant divergences in a first step within this paper particularly of start-up barriers and start-up assistance requirements between students in Germany and China.

4.1 Target Group-specific Start-up Barriers

The country analysis of start-up barriers is highlighted in Table 2. In terms of missing business ideas, missing

foundation partners, missing entrepreneurial qualifications, missing courage, missing available time, missing customer contacts, missing outside capital, and politico-economic environment no significant divergences between Germany and China are found. Hence, these start-up barriers underlie a holistic approach within the following target group-specific analysis. Students in Germany assess missing equity, own financial risk, low turnover, low profit, the cyclical state, fear of failure, and extensive official channels (most) significantly as more start-up hindering than their Chinese counterparts. Thus, these start-up barriers are subject to the target group-specific approach in the context of the Germany-specific analysis. Chinese students evaluate know-how deficit, and support of family and friends (most) significantly as higher start-up barriers than students in Germany, so that these two factors are taken up in the target group-specific approach of the China-specific analysis.

Table 2 Divergences of Student Start-up Barriers in Germany and China

Start-up Barrier	Spearman Correlation	p
Missing "right" business idea	-0.065	0.052 (ns)
Missing "right" foundation partner	-0.057	0.091 (ns)
Missing entrepreneurial qualification	0.028	0.397 (ns)
Missing courage	-0.016	0.628 (ns)
Missing available time	-0.033	0.320 (ns)
Missing customer contacts	-0.018	0.595 (ns)
Missing equity	-0.132	0.000 (***)
Missing outside capital	0.002	0.961 (ns)
Know-how deficit	0.158	0.000 (***)
Own financial risk	-0.302	0.000 (***)
Low turnover	-0.148	0.000 (***)
Low profit	-0.124	0.000 (***)
Support of family and friends	0.143	0.000 (***)
Politico-economic environment	-0.052	0.128 (ns)
Cyclical state	-0.273	0.000 (***)
Fear of failure	-0.195	0.000 (***)
Extensive official channels	-0.127	0.000 (***)

Note: ns: not significant at $p > 0.05$ (not significant); ***significant at $p \leq 0.001$ (most significant).

The start-up barriers analyzed target group-specifically in a holistic approach are indicated in Figure 2. The assumption of missing right business ideas decreases in the course of the pre-start-up process, though this barrier is expected slightly higher by the German and Chinese students when having been sensitized for entrepreneurship. Not surprisingly, when having already founded the students regard missing right business ideas as small start-up hurdle. Also missing right foundation partners are estimated the same way, but with a somewhat tighter rise to the foundation-sensitized and a milder descent. The founders value missing right foundation partners still as fewer start-up barrier, it seems being a challenge to found an adequate team for creating a business. Missing entrepreneurial qualifications are considered to slump continuously during the pre-start-up process and, however, still are seen as not unimportant start-up barrier during the founding phase. Missing courage falls uninterrupted in the course of the pre-start-up process and becomes less important during the preparation and the creation of the business. Interestingly, missing available time preserves its relevancy during the pre-start-up process and, admittedly, underlies during the start-up preparation a slight drop. Missing customer contacts also recede through

the start-up realization where they are still evaluated as balanced start-up barrier. Missing outside capital experiences its peak when the students are sensitized for foundation and decrease continuously afterwards. The politico-economic environment is regarded as lowest start-up barrier by the foundation-interested students and especially by the founders. During start-up preparation it is assessed as one of the most important hurdles within the start-up barriers analyzed in a cross-national approach.

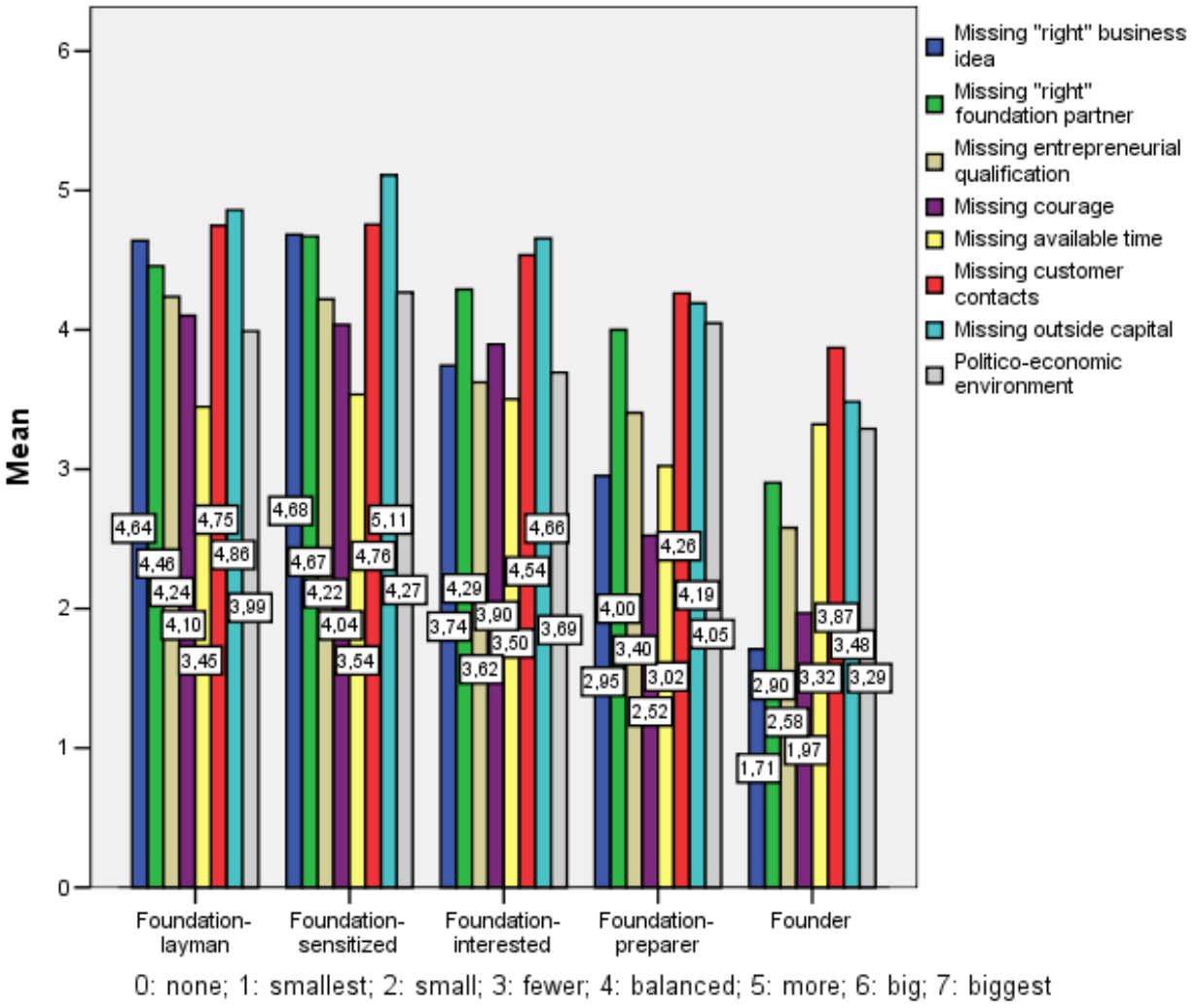

Figure 2 Target Group-specific Cross-national Start-up Barriers

The start-up barriers being observed as at least significantly more relevant to students in Germany than in China are analyzed target group-specifically within the German sample (Figure 3). Missing equity is estimated as highest start-up barrier by the foundation-laymen in Germany, decreases during the pre-start-up process but rises again slightly in the phase of start-up interest and, altogether, keeps being a crucial hurdle. Own financial risk keeps a big relevancy in the first three phases, declines during preparation and rises again in the founding phase, where it does not reach again its primary momentousness. Interestingly, low turnover—rising in the sensitization phase—overall is evaluated as declining hurdle by time. This is also case to low profit, with the difference that it gets somewhat more relevant during the preparation phase. Thus, low turnover and low profit seem getting more manageable as soon as the business creation has been undertaken. The cyclical state is especially to

foundation-laymen and foundation-sensitized a bigger start-up barrier in Germany because it loses slightly its meaningfulness in the three subsequent phases of the pre-start-up process. Fear of failure also declines in the course of the process, experiencing a break in the phase of start-up interest and falling again during preparation of the business. Extensive official channels underlie an increase of relevancy when the business is being prepared, however, as soon as the start-up phase has been reached the importance declines obviously.

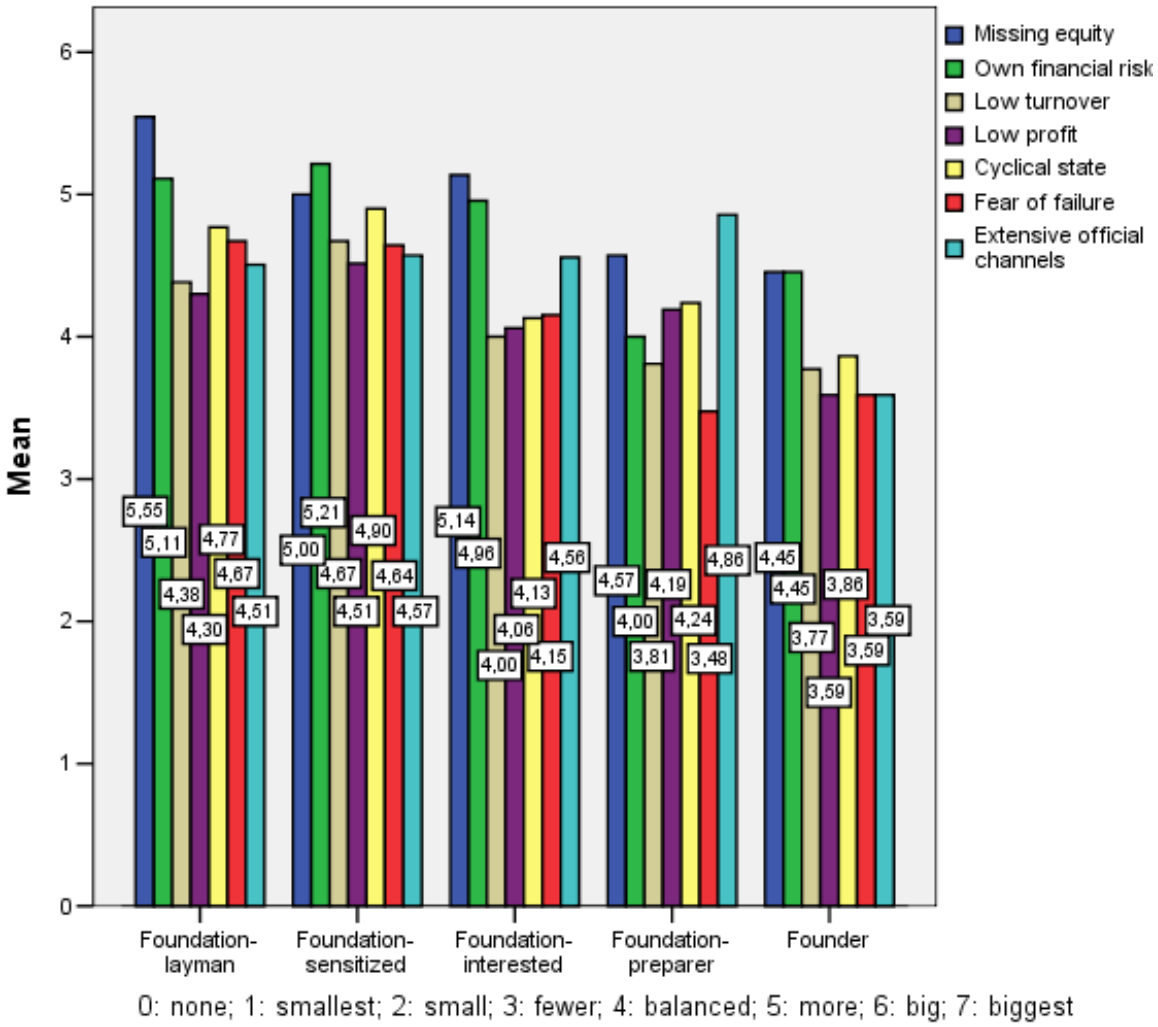

Figure 3 Target Group-specific Start-up Barriers in Germany

Those start-up barriers which are determined at least as significantly more crucial to students in China than in Germany underlie a target group-specific analysis in the context of the Chinese data (Figure 4). Know-how deficit as crucial start-up barrier in China decreases remarkably as soon as the students are interested in founding and preparing their business respectively. Another big drop emerges during the start-up phase, leading know-how deficit to remain as small hurdle. Support of family and friends follows the same development with an immense fall while founding the business. This could be interpreted as follows. As soon as the founder undertakes the creation of his business, his family and friends assist him or her more intensely than before, when still having had the chance to prevent the start-up realization.

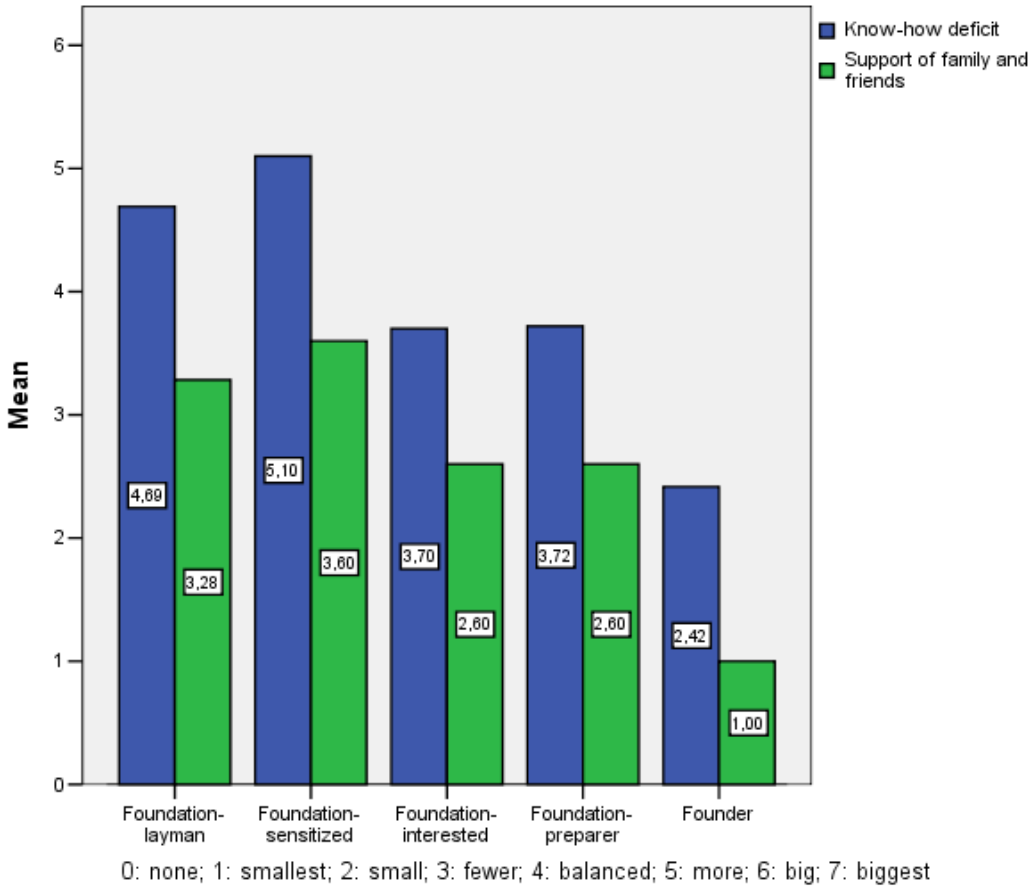

Figure 4 Target Group-specific Start-up Barriers in China

4.2 Target Group-specific Start-up Assistance Requirements

The country comparison of start-up assistance requirements is shown in Table 3. Relating to meetings and discussions with professors, coaching and consulting, and miscellaneous no significant discrepancies are observed, consequently the target group-specific analysis of these start-up assistance measures is object to a holistic approach. Students in Germany prefer solely courses (most) significantly stronger than their Chinese counterparts, thus, this start-up assistance measure is analyzed in the target group-specific approach of the Germany-specific analysis. Chinese students consider business games, business plan workshops, contact bourses with enterprisers, impulsion financing as well as incubators most significantly and specific contact points very significantly as more important than the students in Germany, so that these start-up assistance measures are included in the target group-specific analysis of the China-specific analysis.

The start-up assistance that is explored target group-specifically in a cross-national approach is highlighted in Figure 5. Meetings and discussions with professors are regarded as most important by foundation-preparers in Germany and China, followed by foundation-laymen. This start-up support is assessed as least important by founders. The obviously big momentousness of coaching and consulting decreases first until the phase of interest where this assistance measure underlies a turnaround to reach finally in the founding phase a strong relevancy to the students of both countries. Miscellaneous start-up support measures are seen as less important by foundation-laymen and particularly by founders, leading to the assumption that there are no crucial assistance activities left within the questioning.

Table 3 Divergences of Student Start-up Assistance Requirements in Germany and China

Start-up Assistant Requirement	Spearman Correlation	p
Courses	-0.114	0.000 (***)
Business game	0.272	0.000 (***)
Business plan workshop	0.196	0.000 (***)
Contact bourse with enterprisers	0.122	0.000 (***)
Meetings and discussions with professors	0.050	0.125 (ns)
Coaching and consulting	-0.024	0.454 (ns)
Impulsion financing	0.189	0.000 (***)
Specific contact point	0.104	0.002 (**)
Incubator	0.193	0.000 (***)
Miscellaneous	-0.119	0.349 (ns)

Note: ns: not significant at $p > 0.05$ (not significant); **significant at $p \leq 0.01$ (very significant); ***significant at $p \leq 0.001$ (most significant).

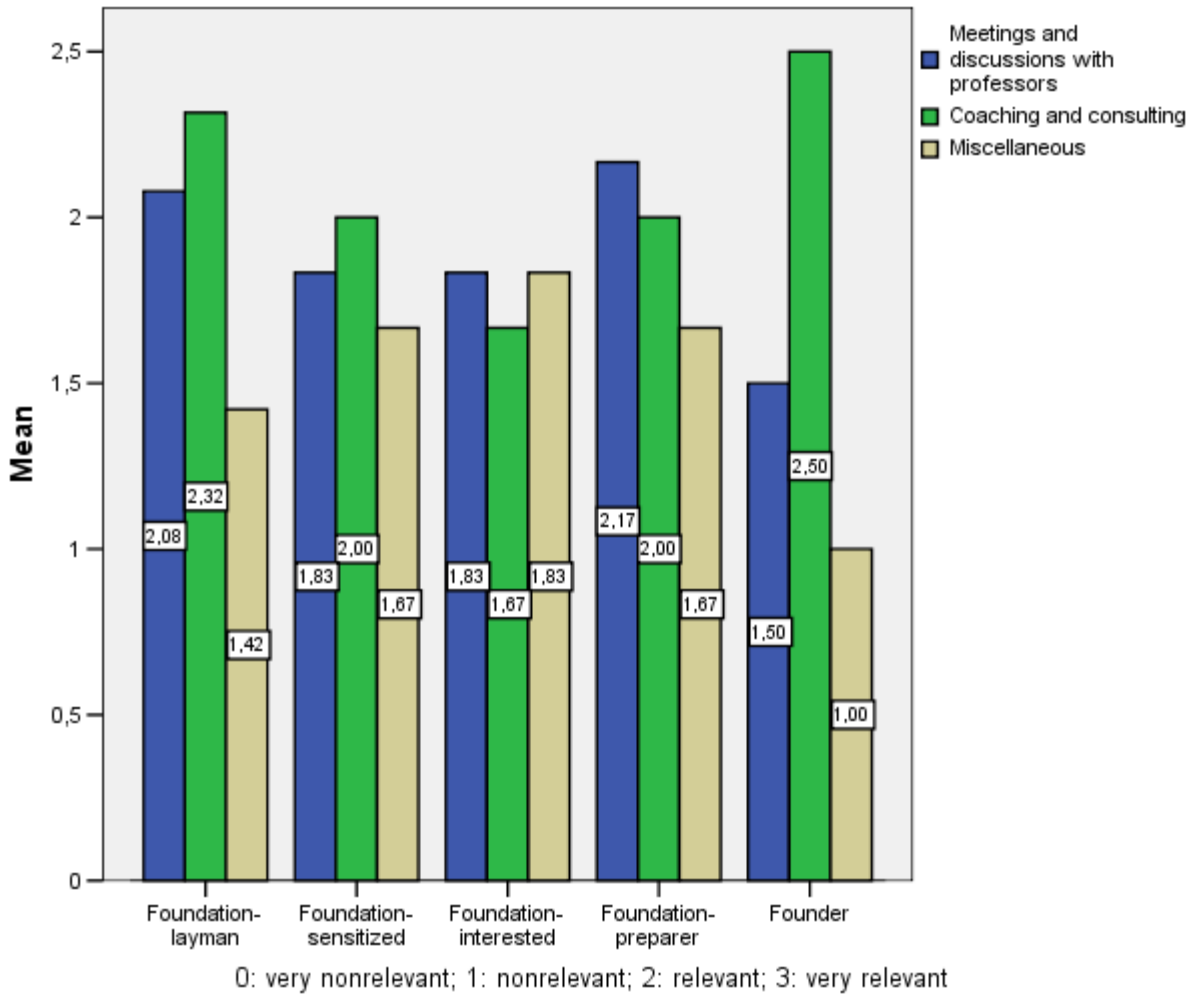

Figure 5 Target Group-specific Cross-national Start-up Assistance Requirements

The start-up assistance activity that is observed as at least significantly more required by students in Germany than in China is analyzed target group-specifically within the German sample (Figure 6). Courses as entrepreneurship support at universities are evaluated permanently as fundamental to the students in Germany.

However, particularly foundation-preparers, followed by founders show a higher demand, leading to the assumption that the potential entrepreneurship courses in Germany having been conducted to the surveyed students lack behind, assumedly especially concerning practical relevance. Thus, the foundation-preparers wish most intensely having been taught better how found their businesses.

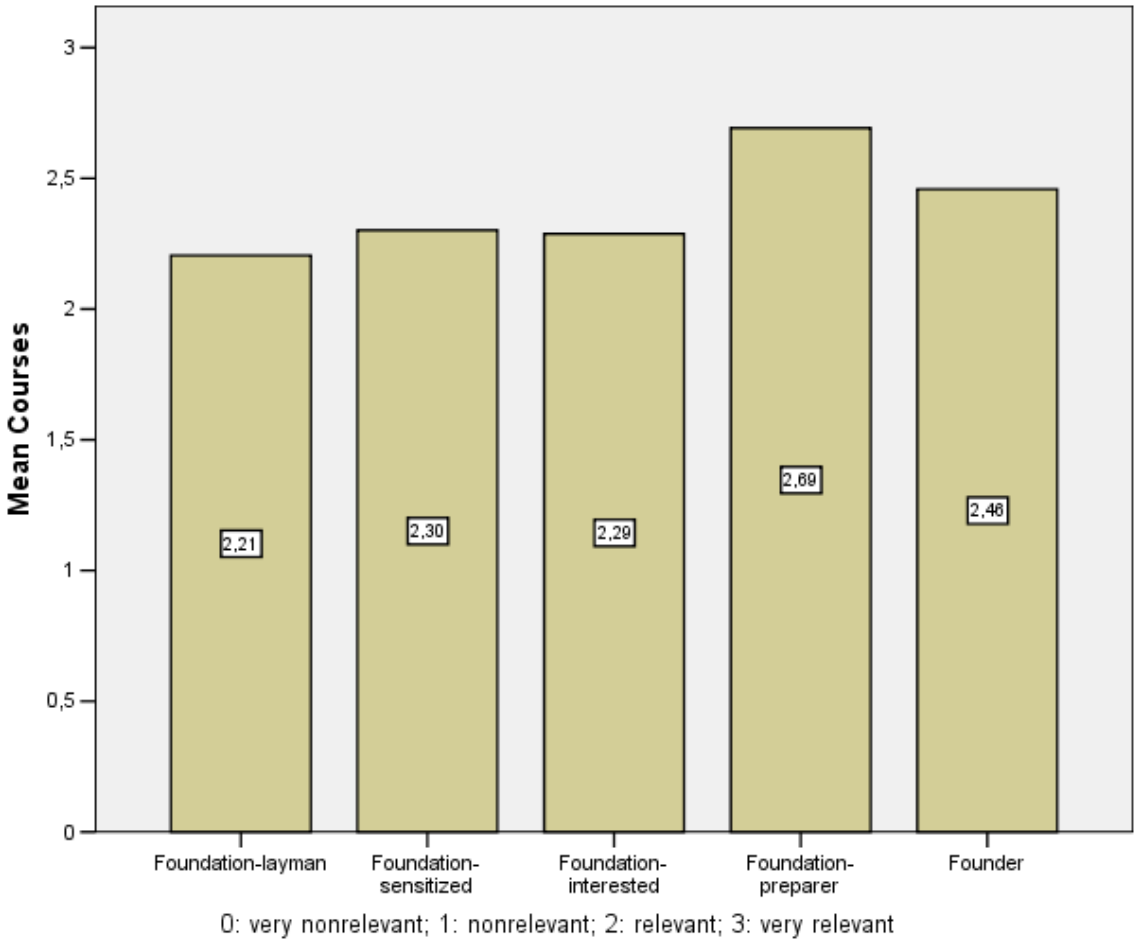

Figure 6 Target Group-specific Start-up Assistance Requirements in Germany

The start-up assistance activities that are investigated as at least significantly more required by students in China than in Germany are analyzed target group-specifically within the Chinese data (Figure 7). Business games are interpreted continuously as relevant support by all foundation ambition types in China. Business plan workshops are seen as most important by founders and particularly by foundation-preparers. However, already the foundation-laymen anticipate their relevance in the business creation process. Contact bourses with enterprisers also are subject to an integrated momentousness, while they are required mostly by the foundation-interested helping them to decide whether they finally should start to prepare their business intentions. An impulsion financing is demanded mostly by founders, followed by foundation-preparers, what is not surprising due to the concrete capital needs in these two phases of the pre-start-up process. Specific contact points are also considered continuously as relevant start-up support and are more demanded at the beginning and at the end of the pre-start-up process. Incubators also are of universal interest, however, within the Chinese sample they are evaluated in each stage as the least important assistance measure.

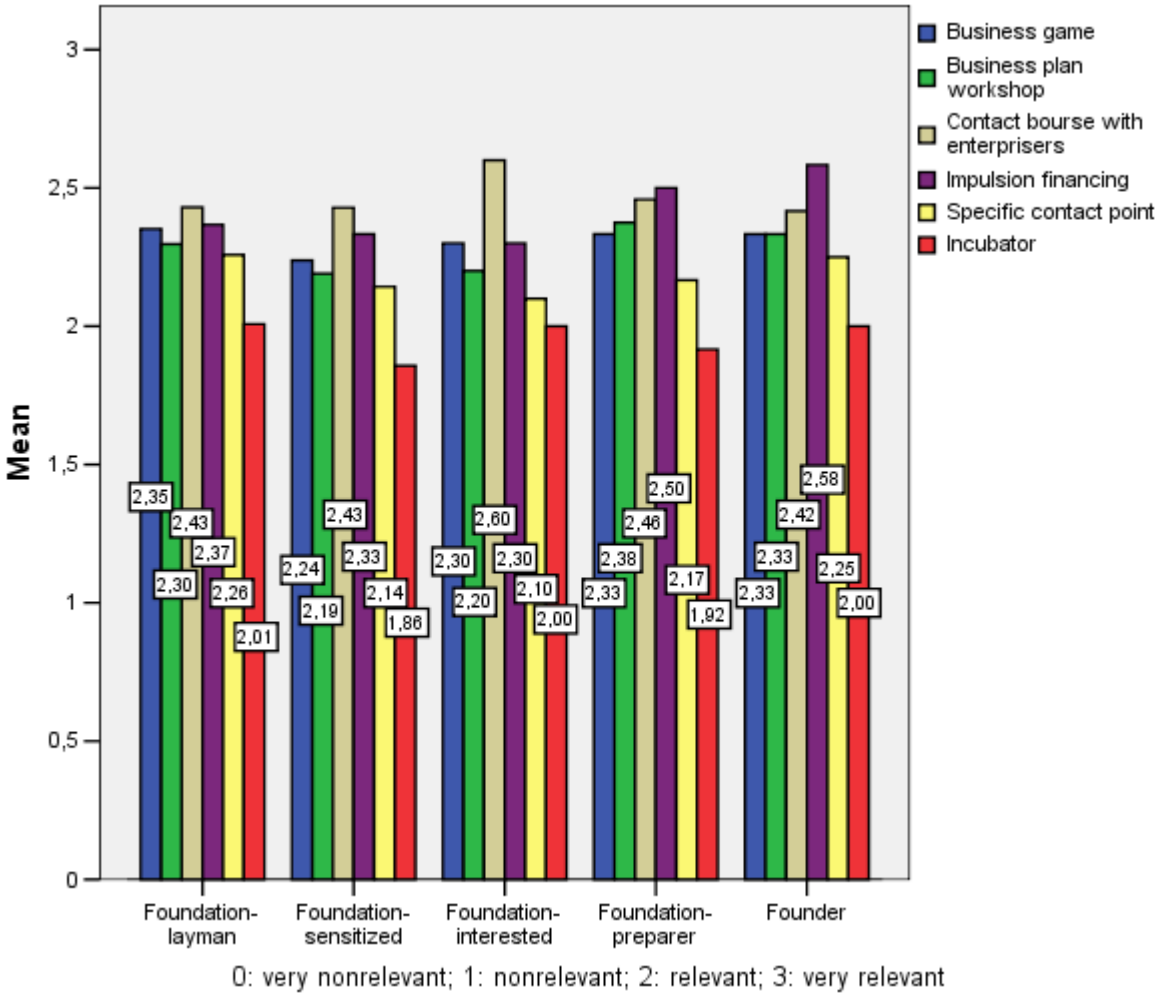

Figure 7 Target Group-specific Start-up Assistance Requirements in China

4.3 Hypotheses Testing

Table 4 illustrates the following results of the hypotheses tests:

Table 4 Results of Hypotheses Testing

Hypothesis	Spearman Correlation	p
H1: The student start-up motivation from economic necessity diverges in Germany and China.	-0.093	0.004 (**)
H2: The student striving for power as start-up motive diverges in Germany and China.	0.359	0.000 (***)
H3: The student ambition to team start-ups diverges in Germany and China.	0.220	0.000 (***)
H4: The student risk propensity diverges in Germany and China.	0.179	0.000 (***)
H5: The student start-up probability diverges in Germany and China.	0.038	0.270 (ns)
H6: The student start-up intention diverges in Germany and China.	-0.054	0.096 (ns)

Note: ns: not significant at $p > 0.05$ (not significant); **significant at $p \leq 0.01$ (very significant); ***significant at $p \leq 0.001$ (most significant).

Students in Germany show very significantly a bigger start-up motivation from economic necessity than students in China, confirming H1. Students in China strive most significantly more intensely for power as start-up motive than their counterparts in Germany, affirming H2. Furthermore, the Chinese sample comprises most

significantly both a higher ambition to found in team and a bigger risk propensity than the in Germany questioned students, so that H3 and H4 are verified. However, due to the lack of significant sample divergences within the scope of the start-up probabilities as well as the start-up intentions of the students in Germany and China, H5 and H6 could not be confirmed.

5. Implications

The findings show that two thirds of the Chinese students are foundation-laymen, whereas circa every second of the students in Germany has dealt with entrepreneurship not at all, thus, the universities in both countries—but even more in China—do not a bit sufficiently communicate entrepreneurship and self-employment as vocational alternative to their students, though they promote training their "customers for years" for their potential careers while neglecting obviously and assumedly intentionally that entrepreneurial skills are nowadays a critical factor for a successful professionalism. The fact that employers can decide whether they hire and dismiss their employees is accompanied by definite job insecurities both in Germany and China, requires the universities to take over more responsibility and impart at least basic entrepreneurial knowledge to their students. However, these results can be recognized as chance to animate already these students—who are at least not unopposed to potential business creations—to entrepreneurship.

Further big differences between Germany and China in the context of the student start-up ambitions exist concerning clearly bigger start-up interests in Germany, on the one hand, and conspicuous higher fractions of foundation-preparers and founders, on the other hand, leading to the assumption that the students in China—despite a worse perceived national start-up climate—concentrate, like reflected by the lower expected start-up time, faster on their business creation as soon as they consider it as attractive job alternative. The higher risk propensities of the Chinese students support these results, too, and are in accord with their higher usage of entrepreneurship information sources than their fellow students in Germany, who have already dealt longer with entrepreneurship, more leadership experiences, and more self-employed persons in their private environment. Nevertheless these latter factors seem not being able to reduce their significantly higher fear of failure and own financial risk in the case of starting up their own business. These culture-caused start-up barriers in Germany can only be overcome by adequate entrepreneurship support, assumedly best by entrepreneurship courses, like shown by the assistance requirements, leading to fundamental entrepreneurial knowledge that, combined with detailed information, could be able that the students in Germany assume the risk factors lower. The students in China, who show stronger intrinsic-grounded start-up motivations than their counterparts in Germany, demand more intensely practical-oriented entrepreneurship assistance that could, beside team start-ups, reduce in additional way their stronger assumed know-how deficit.

However, these are only first implications, how to advance student entrepreneurial activity in Germany and China through an appropriate design of entrepreneurship support. For the purpose of generating deeper insights, the data set allows more detailed exploration—also of groups like gender and study fields—that is beyond the capacity of this paper. Anyway, the results point up that entrepreneurship education and assistance should also consider country-specific requirements and should be offered based on start-up intention-oriented sequence. Like business creation, also entrepreneurship education should follow a procedural character and presupposes continuous student learning processes that satisfy the immense personal momentousness of the start-up decision.

Further comparisons with other nations can be considered as beneficial for generating meaningful

international average values as well as country clusters in order to explore, how to approach adequately student demand-driven entrepreneurship support.

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