

# Target Group-Specific Design of Student Entrepreneurship Support – A German Example Focusing on Start-Up Motives and Barriers

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*Abstract: The research project „Foundation and Entrepreneurship of Students“ (GEST-study) analyzes entrepreneurial criteria and existing cause-effect relationships within the pre-start-up process of students, in order to generate recommended actions for advancing and improving the design of student entrepreneurship support and entrepreneurship education. This benefits the entrepreneurial activity of the most innovative target group of students and academics and, thus, employment and the competitiveness of the economy. The research paper recommends a target group-specific approach within the scope of student entrepreneurship support. For this purpose, the foundation-ambition types are illustrated, whereupon their start-up motives, barriers and desiderata are compared based on a data set of approximately 1,500 students from four German universities (of applied sciences). Due to the conducted factor and cluster analyses, indeed, different requirements of the diverse foundation-ambition types are identified. Moreover, starting points at the universities and colleges in the context of student entrepreneurship support and education are suggested, followed by a demand for further research.*

*Keywords: Entrepreneurship Support, Start-up, Foundation-Ambition, Students, Germany*

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## 1 Introduction

Entrepreneurship and entrepreneurship education have been included as an increasingly more important strategic issue into the politico-economic discussion since the Lisbon Agenda 2000, where the European Union stipulated the strategic goal, „to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and

*greater social cohesion*“ [10]. This aim seems especially attainable by means of innovative business start-ups with their de facto positive effects on employment, economic growth and competition [31]. Within such a challenge of the major industrial nations, Germany seems to be gradually losing its „Champion League“ position within the domain of highly advanced technology [34]. Hence, innovative start-ups represent a most important factor in maintaining Germany’s economic position. However, for years, liquidations have exceeded the number of new companies and only a few start-ups actually contribute with their newly developed products and services to new innovation. Particularly high-potential enterprises – that strengthen innovation in Germany on the basis of structure-altering and market-exploiting products, processes and service developments – represent the fewest number of start-up firms. Therefore, simply increasing the number of start-up companies cannot solve this problem [34, 45].

Further, business conditions around the world have been considerably negatively affected by the deepening financial crisis during the last months. Similar to earlier recessions, the employment market situation is worsening substantially [23]. Whereas in the past years in Germany, because of good labor market conditions as well as reduced financial encouragement for start-up entrepreneurs, a smaller portion of the labor force ventured starting a business, the present crisis is accompanied by a contrary phenomenon, where more people consider self-employment as vocational alternative [56]. Since the difficulty of the labor shortage in a community – exposed in an enduring structural pressure to change within a competitive globalization – particularly affects the generation of young people processing or just having finished their (collegiate) education and looking for work, self-employment as an earning alternative should be directed to this target group in particular [31, 39]. In a similar manner, entrepreneurship education as well as public start-up support programs should focus upon the student and academic aim group, due to their heightened contribution to seminal innovations through which steady and skilled employment are established [5, 14, 17, 21, 27, 45, 53]. Mainly academic entrepreneurs usually found companies quickly as well as more strongly expanding start-ups than their non-academic counterparts; as well, academic entrepreneurs typify a superior level of competence and education [6, 9, 15, 41]. “Consequently, it is necessary to upgrade entrepreneurial education and assistance at colleges/universities so that students are capable of maturing to potential entrepreneurs and finally quest for and dare becoming self-employed” [39].

Suitable supportive measures have to be developed and offered to the national operating business entities as well as to potential start-ups in order to develop international economic competitiveness. Therefore, it is necessary to explore and be attuned to the motivations and reasons of individuals’ start-up decisions [45]. “Lacking knowledge of real context and interrelations exertions of influence stay at random, and arbitrary interferences possibly could slow down or even destruct

exactly those interactions working towards a structural adjustment” [51].<sup>1</sup> Thus, it is necessary to acquire information about the students’ desiderata within the entrepreneurial context, considering that they themselves are the decision-makers in founding their potential start-up company. [39].

Regardless of the primary importance of the business start-up process for business management [37] – entrepreneurship research frequently highlights the influence of resource endowment at foundation time upon the prosperity of enterprises [3, 6, 28] – the issue of the emergence of new companies is only infrequently addressed. Rather, the existence of entrepreneurs and businesses is simply assumed [20, 28, 29, 33, 36]. Hence, research studies primarily concentrate on entrepreneurs with already completed business foundation processes and on established business ventures [12, 28, 41].

Because of this, the pre-foundation process – as individual developing and decision process of potential entrepreneurs [43] – in general is widely unexplored [13, 28, 45, 57]. Nonetheless, the pre-start-up process usually constitutes the decisive stage of development of enterprises [31]. “An assumedly not inconsiderable number of foundation willing persons abandons their start-up intention in the course of their prearrangement; when, why and how this occurs is, so far, unexplained, although this is both managerial and politico-economically of substantial interest“ [12].<sup>2</sup>

From this follows the necessary empirical analysis of students’ and postgraduates’ entrepreneurial criteria that yields insights into an adequate design of start-up encouragement as well as collegiate entrepreneurship education [55]. Though the teachability and learnability of entrepreneurial decision-making and responsibility within academic education are repeatedly considered as empirically confirmed [11, 22, 30, 52, 54, 55], in the framework of entrepreneurship education, no consensus exists concerning a general concept [16, 55]. Hence – not only because of its basic economic importance, but also because of the immense individual consequences of the foundation decision, the pre-foundation process has to be analyzed from the students’ subjective outlook and requests [5]. “Only an individual-oriented analysis about constructive or obstructive proceedings within the pre-start-up process will identify how to raise foundation in the manner of quantity and quality based on adequate entrepreneurial encouragement, given that

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<sup>1</sup> Own translation into English; original German quotation: „Bei nicht ausreichender Kenntnis der realen Zusammenhänge bleiben Einflußnahmen zufällig und können willkürliche Eingriffe möglicherweise gerade diejenigen Kräfte, die auf eine Strukturanpassung hinarbeiten, bremsen oder gar zerstören“ [51].

<sup>2</sup> Own translation into English; original German quotation: „Eine vermutlich nicht unbeträchtliche Zahl von Gründungswilligen gibt im Zuge der Vorbereitung ihre Gründungsabsicht auf; wann, warum und wie dies erfolgt, ist bislang ungeklärt, obwohl dies sowohl betriebswirtschaftlich als auch wirtschaftspolitisch von beträchtlichem Interesse ist“ [12].

finally the students themselves develop their entrepreneurial intention and are the decision-makers regarding their potential start-up activity” [40].

Accordingly, start-up encouragement and entrepreneurship education should be considered in terms of how best to facilitate this education, that is, in terms of procedure. Students require a continuous and integrated entrepreneurial learning process [21], in order to being able to mature as potential entrepreneurs. Moreover, the development of a concrete foundation intention is process-driven, as shown in the *Foundation Ambition Types-Model* [38]. Consequently, instead of focusing solely upon students and academics with a precise intention of founding a company, entrepreneurial education and support should be didactically directed upon *foundation-laymen* [5, 40].<sup>3</sup>

## 2 Foundation Ambition Types

In this empirical research project „Foundations and Entrepreneurship of Students” (GEST-study), entrepreneurship is widely defined as “the imagination, development, and realization of own objectives and visions in a competition-determined environment” [8]. Foundation refers to the – individual or team-based – creation and development of a new economic operation or undertaking such as a self-employed occupation or business start-up [18, 42].

The vocational and occupational literature describes career choice as an enlargement of the personality or interest of individuals [46, 49, 50] so that the personal employment choice is an extension of oneself and is supposedly expressed in the career selection reasons given by the individual [46]. It is supported that “individuals who choose to enter entrepreneurship differ in specific ways which are measurable from individuals with no current entrepreneurial intentions” [49].

According to the “Foundation process and founder types” [57] as well as to the “Reversed stairs-model” [53], people and students respectively are categorizable into diverse classes, each representing a possibility of realizing a business start-up [53, 57]. Welter’s model lacks differentiation concerning whether the questioned target-group already is sensitized to foundation and entrepreneurship or has not even dealt with those topics. Further, the drafted „foundation funnel“ is not suitable for describing true-to-life processes because it is assumed that all persons picked up by this model will, over time, become founders [57]. Uebelacker’s model, in which every category in the direction of the founder represents an increasing likelihood of foundation realization, seems to be more adequate

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<sup>3</sup> Further research findings also highlight existent gender and study field divergencies in the context of student entrepreneurship criteria [44].

regarding the necessary clear differentiation of the foundation propensity values enabling one to analyze them appropriately. Though it considers the target group of foundation-sensitized persons, it assumes a „drop-out“ within the change into the next category so that a fraction of a potential transition into a category with stronger foundation propensity is totally excluded [53]. This assumption does not satisfy the procedural character of the pre-foundation process in which also the foundation nonsensitized persons, over time, can mature to entrepreneurs. Thus, both models are inappropriate concerning an aim-oriented classification of student foundation propensities [38].

In order to counter this deficiency, within the scope of the GEST-study an upgraded typology with an increasing probability of foundation realization has been developed (Figure 1). The foundation ambition types are categorized in the following way. The *foundation-layman* has not dealt with foundation at all; the *foundation-sensitized* has not yet considered foundation; the *foundation-interested* has already considered foundation but has not started to prepare foundation; the *foundation-preparer* is already engaged in the preliminary foundation; and the *founder* has already founded a company. This true-to-life *foundation ambition types-model* permits a clear differentiation of the foundation propensity values with unambiguous definitions; this follows from the process-related character of the foundation; considered over time, the potential increasing probability of the foundation realization allows a persistence within each typification as well as a backslide into subordinated stages;<sup>4</sup> it is not expected that all individuals eventually reach a higher classification, and it does not exclude any subcategory from a potential foundation realization [38].

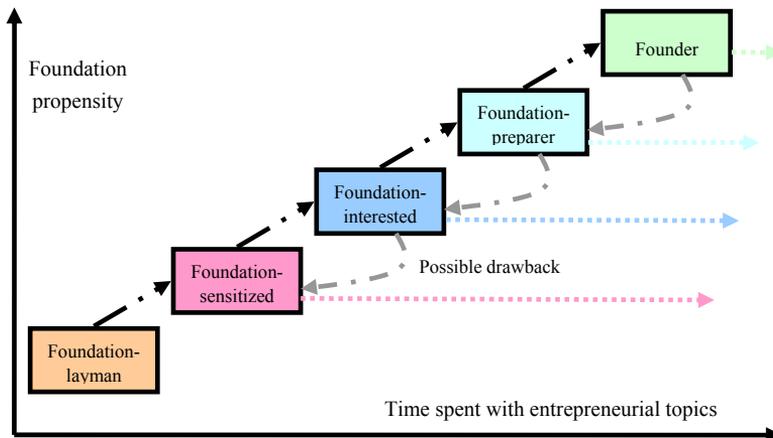


Figure 1  
Foundation Ambition Types [38]

<sup>4</sup> Except for the shift back to the *foundation-layman*, due to the already existent sensitization to foundation and entrepreneurial issues.

The *foundation ambition types-model* shows that a more intense examination of foundation over time enables a gradual or volatile emergence of a stronger foundation intention. Because the development of foundation propensities and the activities of foundation preparations do not necessarily follow a specified sequence of influences or operations, but rather are affected by an evolutionary process with discontinuities as well as recursive progressions [57], the model contains potential drawbacks as well as horizontal arrows which signify that (potential) founders also are able to successively or abruptly relapse into typifications with lower foundation propensities and temporarily or steadily retain their present foundation ambition. In such a scenario, the pre-start-up process can be systematically shaped by its actors, but solely within a defined scope, for which reason its outcome and completion respectively, are, in principle, unforeseeable [57]. At this point, only a procedural approach offers analyses of structural as well as situative influencing factors within the pre-foundation process [38]. The process-oriented *foundation ambition types-model* illustrates over time the potentially emerging foundation intention, whereby the postulated target group differentiation is considered [45].

### **3 Resource Endowment**

“In reality, strategies are not just choices, but also plans. Strategies are constructed, molded and adapted in processes of interaction with environments. Entrepreneurs have the potential of learning during the process of constructing their firms, based on feedback from their outcomes” [1]. However, the result of the start-up process decisively depends on the potential founder’s available resources [7, 42] such as particular knowledge, financial capital, incentives as well as social networks are of decisive importance [2, 25, 28, 41]. Concerning entrepreneurial success factors, the entrepreneurship literature widely agrees that the person plays a major role; however, the importance placed on the person is based rather on experiences and skills than on traits [35]. Both technological and managerial knowledge seem to be pivotal in detecting and effectively commercializing on the innovative start-up ideas. Research shows that especially at universities, technological findings drawn from and often caused by improved technologies [25]. Financial capital – equity and debt – provides allocating further resources in order to materialize and implement innovative business foundations [25]. Referring to entrepreneurial incentives, advantage seems to be the most fundamental resource. Entrepreneurs aspire to individual utility, e.g. income, as well as social utility such as appreciation [25, 26]. The outcome of the start-up process depends on the person’s ability to avoid resource shortages that can be tackled especially by means of personal networks [28, 38, 41, 58]. “Such objectified social boundaries manifest access and distribution to resources and opportunities” [4, according to 24].

## 4 Research Design

A review of the literature and empirical studies, particularly the relevant classified pre-foundation procedural influencing factors, have been specified. On the basis of a standardized questionnaire developed [42] in 2007 and 2008, approximately 1,500 students of undergraduate as well as postgraduate study courses were surveyed during their lectures at four German universities and universities of applied sciences. Thus, the sample also includes students with several years of work, leadership as well as foundation experiences. This fact can be categorized as appropriate to managerial research [59]. Further, the personally written form of the questionnaires counters the weaknesses of online surveys; that is to say, self-selection effects are prevented [47] because within this procedure, the foundation-uninterested students are used to filling out the questionnaire. With the main focus on study courses in the fields of business administration, engineering and informatics, the study surveys particularly students whose fields of study represent the strongest start-up intention and entrepreneurial activity of their students relative to other special fields [17, 19, 32, 45, 48].

The methodical approach refers the framework of collegiate foundation propensity [41, 42] that specifies fundamental influencing factors of a potential developing foundation intention over time within the scope of the student and academic pre-foundation process [41, 42].

## 5 Results and Interpretation

Analyzing the differences in entrepreneurial criteria such as motives, barriers, and desiderata of the diverse foundation ambition types within the student pre-foundation process results in knowledge of an appropriate design for a target group, specifically regarding entrepreneurship support. It seems expedient to conduct *K-Means Cluster Analyses* within the scope of student start-up motives, barriers as well as desiderata in order to relate the resulting clusters to the foundation ambition types. However, before executing the cluster analyses, on the basis of factor analyses (principal components extraction and varimax rotation) reductions of the variable quantities are conducted in each case [45].

In the context of start-up motives, from a factor analysis arise two factors with eigenvalues above one that explain 45.3 percent of the total variance. However, because two eigenvalues with 0.999 and 0.985 reach nearly the value one, the reference value which determines the number of the extractable factors has been reduced to 0.98 so that, in the end, four factors are generated which together describe 67.3 percent of the total variance: (1) *material prestige mentality* (comprises the start-up motives *income*, *high income*, and *prestige*); (2) *idea and*

*self-realization* (comprises the start-up motives *realize ideas of one's own and self-actualization*); (3) *determination* (comprises the start-up motives *flexible hours of work, having power, and be one's own boss*); (4) *economic necessity* (comprises the start-up motive *way out of unemployment*). From the following cluster analysis arise four start-up motive-oriented clusters with case numbers between 288 and 347: (1) *material prestige mentality and determination*; (2) *low developed motives*; (3) *economic necessity*; (4) *idea and self-realization*. Appraising these start-up motive-oriented clusters regarding the foundation ambition types shows the following (Figure 2).<sup>5</sup>

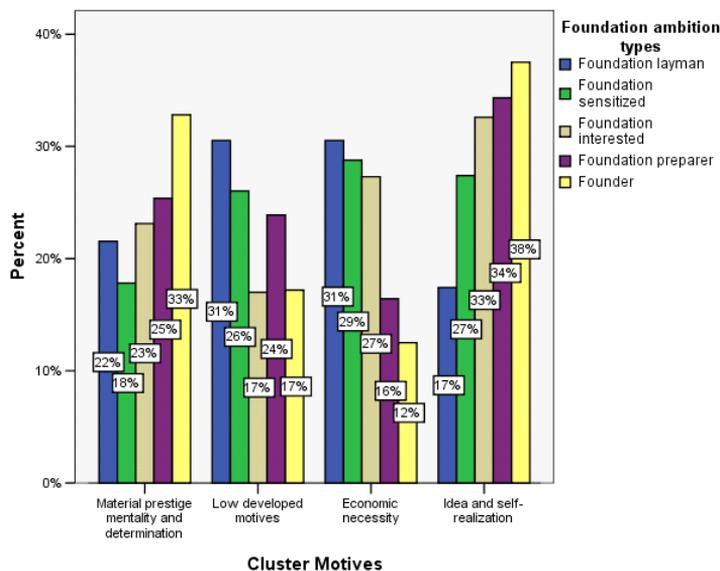


Figure 2  
Clustered Start-Up Motives According to Foundation Ambitions

The *foundation-laymen* mostly – nearly two thirds of them – are equally embodied in the clusters *low-developed motives* as well as *economic necessity*. They rarely present a foundation motivation from economic self-realization. If at all, rather the push factors dominate their potential start-up tendency. This presumably could alter in case of a positive foundation climate and established entrepreneurship support programs at their educational institutions. As the example of the *foundation-sensitized* shows, the examination of entrepreneurship eventually results in a decrease of low developed start-up motives. In the meantime, realizing business ideas and self-actualizing a self-identity seem to be more interesting to them. Admittedly, the *foundation-sensitized* represent the smallest percentage that

<sup>5</sup> The existent divergences are statistically most significant ( $p \leq .001$ ).

strive for income, prestige and determination within the realms of entrepreneurship. These factors are also not decisive to the *foundation-interested* who demonstrate only slightly low-developed start-up motives. A third of them belong to the cluster *idea and self-realization*, but to approximately one quarter of the *foundation-interested*, the push factors are the crucial foundation motives. The latter start-up motivation appears to decline noticeably strongly when starting with the concrete foundation preparation, whereas the other start-up motives increase. The remarkable jump of the *foundation-preparers* within the cluster *low-developed motives*, however, indicates the foundation preparation being a critical phase in the pre-foundation process that could be overcome more easily with appropriate entrepreneurship support. After having just started a business, the *founders* infrequently represent low-developed motives or foundation motivations from economic necessities. To them, the pull factors are of pivotal importance.

Concerning the questioned start-up barriers, from the factor analysis result six factors with eigenvalues over one that describe 61.8 percent of the total variance: (1) „*knowledge/idea/partner*“ (comprises the start-up barriers *missing entrepreneurial qualification, know-how deficit, missing right business idea, and missing right foundation partner*); (2) *income statement* (comprises the start-up barriers *low turnover, and low profit*); (3) *macroeconomic framework/family & friends* (comprises the start-up barriers *politico-economic environment, cyclical state, extensive official channels, and support of family and friends*); (4) *equity/debt* (comprises the start-up barriers *missing equity, and missing outside capital*); (5) *failure/courage/risk* (comprises the start-up barriers *fear of failure, missing courage, and own financial risk*); (6) *time/customers* (comprises the start-up barriers *missing available time, and missing customer contacts*). The subsequent cluster analysis results in four start-up barrier-oriented clusters with case numbers between 171 and 393: (1) *macroeconomic and financial framework*; (2) *qualifications and income statement*; (3) *low evaluated barriers*; (4) *risk and networking*. Analyzing these start-up barrier-oriented clusters within the scope of the foundation ambition types leads to the subsequent findings (Figure 3).<sup>6</sup> The *foundation-laymen* are mostly detectable in the clusters *risk and networking* as well as *qualifications and income statement*. Impartial to entrepreneurship, they lack foundation contextual knowledge. Through first contacting and acquisition of corresponding qualifications, high risk perceptions and profitability doubts concerning one's own self-employment could be relativized. Referring to the *foundation-sensitized*, the condition seems to be quite similar, whereas within this target group – due to already occurred confrontation with entrepreneurship – the start-up obstacles in general, as well as risk perception and networking in particular, constitute comparatively lower hurdles. The *foundation-interested* apparently already have dealt more intensely with entrepreneurship and have already considered the foundation possibility. That also explains, meanwhile, the

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<sup>6</sup> The existent divergences are statistically most significant ( $p \leq .001$ ).

strongly reduced qualification barriers and profitability doubts of one’s own start-up as well as the recurring intensifying difficulties regarding risk expectation and existing network which currently is evaluated as more important. Also, the macroeconomic and financial framework is more strongly opposed to the *own foundation* decision which also applies to the *foundation-preparers* with an already present concretization of the foundation intention. This aim group already develops a start-up concept which diminishes the risk perception and eventually leads to contacts and, furthermore, to overall lower noticed start-up barriers. Once foundation is eventually realized, affiliation with the cluster *risk and networking* is reduced by 50 percent, whereas the fractions of the low-evaluated start-up barriers double. Further, necessary qualifications mostly seem to be present, and the profitability of the *own enterprise* appears to be unproblematic [45].

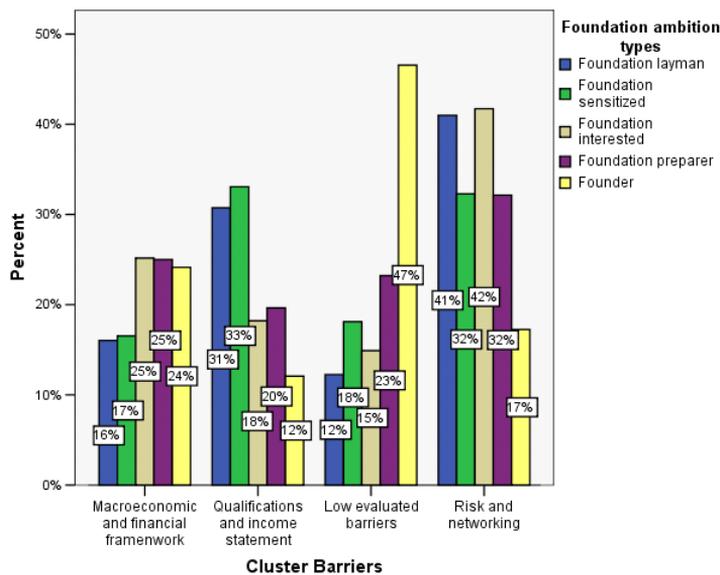


Figure 3  
Clustered Start-Up Barriers According to Foundation Ambitions [45]

In the range of start-up desiderata, the factor analysis leads to three factors that together explain 58.4 percent of the total variance: (1) *individual support* (comprises the start-up desiderata *specific contact point*, *impulsion financing*, *incubator*, and *coaching and consulting*); (2) *impart basics* (comprises the start-up desiderata *business game*, *business plan workshop*, and *courses*); (3) *networking support* (comprises the start-up desiderata *contact forum with enterprises*, and *meetings and discussions with professors*). From the conducted cluster analysis follow four clusters with case numbers between 191 and 312: (1) *individual and networking*; (2) *individual and impart basics*; (3) *impart basics and networking*; (4) *low support demand*. Examining these start-up desiderata-oriented clusters

concerning the foundation ambition types leads to findings, as follows (Figure 4):<sup>7</sup> The *foundation-laymen* are uniformly distributed within all start-up desiderata-oriented clusters, whereby, at first, a positive entrepreneurial mission statement has to be created at the universities. Once the students are sensitized to foundation, they desire far above average that foundation-specific basic knowledge is imparted and contact persons provided for this purpose. This – somewhat fewer – also applies to the *foundation-interested* who certainly are equally often represented in the cluster *individual and impart basics*. In this connection, it is assumedly about *foundation-interested* with already concrete business ideas who – besides basic education – also demand individual support. Both *foundation-sensitized* and *foundation-interested* seldom truly express low-support demands. However, this does not apply to *foundation-preparers* who, in addition, strongly emphasize either imparting basics and networking or individual support and networking. Assumedly, this depends on the progress of their start-up preparation. To the *founders*, especially those imparting basic knowledge as well as individual support, it appears to be vital; however, contact forums with enterprises are also evaluated as useful in order to enlarge the own network with business partners [45].

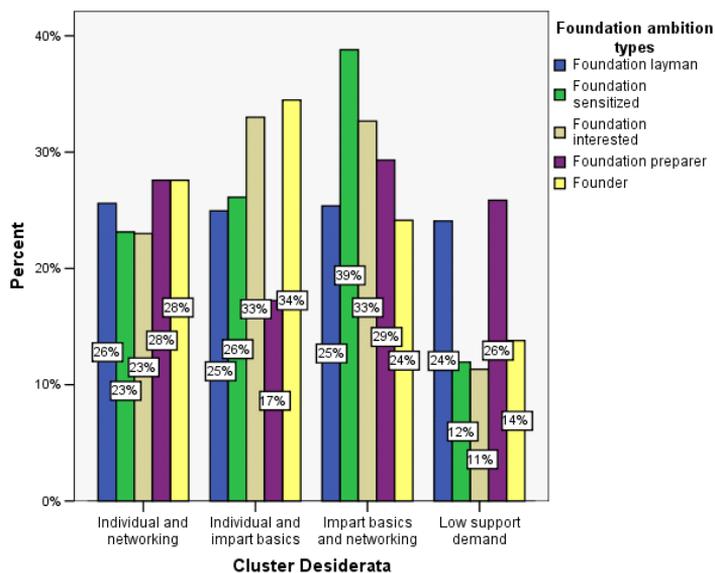


Figure 4  
Clustered Start-Up Desiderata According to Foundation Ambitions [45]

<sup>7</sup> The existent divergences are statistically most significant ( $p \leq .001$ ).

## Conclusions and Further Research

Entrepreneurship support should not – as this is oftentimes the case – be solely focused on and limited to financial support measures. Thus, the desiderata of potential founders without previously concretized business ideas remain unconsidered. Also, to the potential founders and to the foundation ambition types of earlier phases within the pre-foundation process respectively, an integrated entrepreneurship support at universities and colleges has to be implemented, namely, the establishment of a positive image of the entrepreneur and a beneficial foundation climate as well as a continuous student examination of foundation-relevant issues and problems in the context of lectures and, further, the implementation of a start-up-specific contact point offering both general information about entrepreneurship and specific consulting and networking services tailored to the students' and graduates' particular requirements and business ideas. Students and academics should appreciate their college and university respectively – the location where specialized knowledge about their subsequent professionalism is imparted – as advisory center of excellence regarding their individual vocational career options, considering the huge personal importance and momentousness of the foundation decision. Such contact points concerning all entrepreneurial questions and circumstances could, for instance, clarify gaps in knowledge of foundation-interested students and relativize last doubts in cases of indecisiveness or anxiety, whereby more start-up-intended students and academics could be encouraged to their own foundation realization.

The purpose of entrepreneurship education should not only be the foundation sensitization but also to impart general entrepreneurial competences within the scope of an interdisciplinary intersection of teachings with entrepreneurial aspects that, however, needs to be effected successively and with appropriate intensity. Once the students have to deal permanently and more intensely with entrepreneurship, the likelihood of eventually developing a concrete start-up interest noticeably increases. This approach to teaching entrepreneurial foundation in effect encourages the students' inventions of new business ideas and is indispensable to a market-oriented commercialization of resultant product, process and service innovations.

Such a design of entrepreneurship support measures and entrepreneurship education leads to positive effects in the perceived entrepreneurial climate and start-up sensitization, interest and finally realization. Certainly, the purpose of imparting students and academics about self-employment options as an attractive vocational alternative as well as general entrepreneurial competencies, is an interdisciplinary task that requires pronounced overall competencies and necessarily further research activities.

This paper provides concrete indications regarding which phase of the pre-foundation process and which start-up support measures could be appropriately implemented and offered to the students surveyed. Admittedly, other surveys

could cause different findings, for instance result in other factors or clusters. Therefore, also students from other universities and colleges should be questioned, preferably in diverse countries with different political, economic and cultural environments as well as foundation climates and entrepreneurial activity rates. Such international comparisons could enable deeper insights into and knowledge about crucial features and interdependencies within the pre-start-up process. However, there also remains the challenge of expediently designing entrepreneurship support programs, in order to set the stage for the students' and academics' possibilities of maturing as entrepreneurial thinking and perhaps eventually entrepreneurial acting personalities.

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