Entrepreneurial Activities of Hungarian Students[1]

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Abstract: Promoting entrepreneurship and enhancing successful entrepreneurial activities play a determining role in economic performance of a country. Since students studying in tertiary education may become successful entrepreneurs in the future, it is important to map their current visions about starting a business and identify the ways of channelling their visions in a positive direction.
Tertiary education institutions through their education structure and offered services can make students know and understand business activities related to business operations and help them overcome potential obstacles they face while conducting business activities.
Hungary joined the GUESSS (Global University Entrepreneurial Spirit Students' Survey) international research project organised and led by the University of St. Gallen, Switzerland in 2006. The GUESSS evaluated students' entrepreneurial intentions and activities of students in a survey based on a questionnaire. Using the survey results of 2011, the article attempts to identify and evaluate business start-up factors.

Keywords: entrepreneurship, Global University Entrepreneurial Spirit Students' Survey

1   Introduction

Promoting entrepreneurship and enhancing entrepreneurial activities have become economic policy priority issues recently since they affect generation of jobs and economic growth. Primarily, fast growing 'gazella' firms play a determining role in this process. A survey conducted in Hungary shows that the fastest growing 5%

of enterprises created to 45.8 % of new jobs and the fastest growing 1% generated 20% jobs between 2002 and 2005 in Hungary (Békés, Muraközy 2011). These enterprises were more receptive to innovation than their competitors who failed to produce rapid growth (OECD 2002, Autio et al. 2007, Papanek 2010).

According to Autio (2005), enterprises with high growth potential are founded by well-qualified young entrepreneurs with solid financial background, who are motivated to pursue perceived business. Thus, identifying factors influencing entrepreneurial activities of students studying in higher education and areas of intervention are of crucial importance in terms of economic growth and job creation over the coming years.

2   GUESSS research

The international research project GUESSS (Global University Entrepreneurial Spirit Students' Survey)[2] investigates entrepreneurial intentions and activities of students. In order to have a better understanding of the start-up process, the survey explores the career intentions of students both immediately after graduation and several years hence, examines family and students' own businesses and investigates their future entrepreneurial visions. It helps to identify with systematic and long term analysis the processes and factors which can be decisive in entrepreneurial intention.

The primarily aim of the research is to identify the individual motives and personal background traits which considerably affect the process of entrepreneurship The research makes it possible to analyse the impact of cultural and institutional factors on start-up activities. Within the framework of the research, the type of services and courses higher educational institutions offer to students to support the students' entrepreneurial intentions and the ways to create entrepreneur-friendly environment can also be identified. Due to the international character of the research, the surveyed universities can be compared at both national and international levels.

Apart from the research questions in the narrow sense of the word, the project serves community objectives as well. By collecting and processing data, the participant countries receive a comprehensive picture about an important area of business start-up activities. The students' entrepreneurial attitudes, the summary indicator of entrepreneurial attitudes, the entrepreneurship power will have a long- and middle-term impact on entrepreneurial activities of particular countries and on their social and economic development. A different utilisation of the research findings may lead to formulation of recommendations for the decision making of

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[2] The research project website: http://guesssurvey.org.

societies and various areas of economic policy (enterprise development policy). The education and enterprise development programmes elaborated on the basis of the research findings support students' career objectives.

The project is coordinated by the Swiss Research Institute of Small Business and Entrepreneurship at the University of St. Gallen (KMU-HSG). The Institute processes the collected data. The participants in the research receive access to the database, which they can use for scientific analysis.

3   ISCE/GUESSS Data and the Composition of the Hungarian Sample of 2011

The survey is conducted every second year. The first survey was conducted in 2003 with the participation of two countries. Since then the international character of the survey has grown and the circle of countries and universities participating in the research has been constantly expanding. In 2011 about 26 countries joined the project.

The questionnaire provides an opportunity to follow certain changes through time, and to understand the underlying factors. Moreover, by the growing numbers of participating universities and countries, there is more room for geographical comparisons.

In 2011, in the fifth survey 93265 students took part in the survey from 502 higher institutions. In Hungary, 5677 students filled the electronic questionnaire (the average response rate was 8%). In the academic year of 2010/2011, there were 361 347 students matriculated in Hungary. Only the institutions where over 1000 students studied were selected for the survey. Thus, the number of the surveyed students amounted to 289 336 for the GUESSS in 2011, which roughly accounted for 80% of the total students (Table 1).

Institution[3]	No. of students enrolled for yr. 2009/2010	Distribution of enrolled students [%]	No. of sent inquiries (link)	No. of filled questionnaires	Distribution of filled questionnaires [%]	Response rate [%]
BME	23219	8.0	0	5	0,1	
BCE	17422	6.0	4800	201	3.5	4.2
SZE	10786	3.7	8900	681	12.0	7.7

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[3] The abbreviations used for the names of the institutions are in accordance with the common abbreviations in higher education, see at the last page.

DE	30728	10.6	n.a.	538	9.5	
ME	13940	4.8	14055	620	10.9	4.4
PTE	29032	10.0	8400	757	13.3	9.0
SZTE	27436	9.5	n.a.	254	4.5	
PE	10125	3.5	0	1	0.0	
KE	3244	1.1	n.a.	38	0.7	
NYME	14261	4.9	7600	291	5.1	3.8
ELTE	30767	10.6	n.a.	175	3.1	
SZIE	10786	3.7	n.a.	166	2.9	
BGF	17911	6.2	13622	620	10.9	4.6
BMF	11438	4.0	0	5	0.1	
DF	4312	1.5	2460	158	2.8	6.4
KRF	11530	4.0	8000	97	1.7	1.2
ÁVF	2949	1.0	n.a.	147	2.6	
GDF	2720	0.9	n.a.	182	3.2	
EJF	1634	0.6	1350	65	1.1	4.8
BKF	2353	0.8	0	1	0.0	
KJF	6673	2.3	n.a.	423	7.5	
MÜTF	2073	0.7	1200	145	2.6	12.1
SE	3173	1.1	330	65	1.1	19.7
Others		0.0		42	0.7	
Total	289336	100.0	70717	5677	100	8.0 (average)

Table 1

Peculiarities of participation in GUESSS 2011

Source: GUESSS 2011 database

Explanation: Sent inquiry (link) – the number of students that received the internet link for filling out the GUESSS questionnaire. 0 means that the institution has not made the questionnaire available for its students either through internal system or in any other form.

The GUESSS survey basically deals with four groups of questions, namely the willingness to start a venture traceable in the students' career plans, the influence of university/college environment, the entrepreneurial intention of students and the role of family businesses influencing this attitude. Each of the four question groups is made up of 16 question blocks with closed-end questions, both alternative and selective ones. The questionnaire offers an option to choose the answer „other" five times.

4   The Concept of the Research

As promoting entrepreneurship is a core objective of many countries, measuring its actual level and developing models to understand its substances are crucial. Several methodologies are described in the technical literature. The Eurobarometer Survey on Entrepreneurship has been studying the development of entrepreneurship in EU Member States for over a decade in order to explain how to set up businesses and achieve business growth (EC 2012). The GEDI index of GEM (Global Entrepreneurship and Development Index) considers entrepreneurship to be a multidimensional concept where both individual and environmental factors are important and the institutional setup determines the effectiveness of individuals (Szerb et al. 2012). The Entrepreneurial Event model of Shapero and Sokol (1982) and the Theory of Planned Behaviour of Ajzen (1991) also attempt to describe the above mentioned multidimensional nature.

The GUESSS's research concept relies on Ajzen's Theory of Planned Behaviour (1991, 2006). According to this theory, attitude, subjective norms and the degree of behavioural control together influence the individual's willingness to become an entrepreneur that can eventually manifest in actions. According to this model, there is a direct positive relationship between the entrepreneurial attitude and the willingness to start up a business. A supporting social environment is also nourishing for entrepreneurship intentions. The impact of the perceived behavioural control on intentions and actions is twofold. Firstly, the more an individual feels that he is in control of his surroundings, the more likely he is in favour of starting up his own venture. Secondly, self-efficacy also has a positive effect on entrepreneurial spirit. The more the person feels that he has acquired the appropriate skills and knowledge to start up an enterprise, the more likely he thinks his own business can be launched.

There are several factors that influence model variables, according to the research concept the individual and family background as well as motives are determining.

The boundary condition of the research is the University context, it is investigated with specific attention. Figure 1 illustrates the concept of the research.
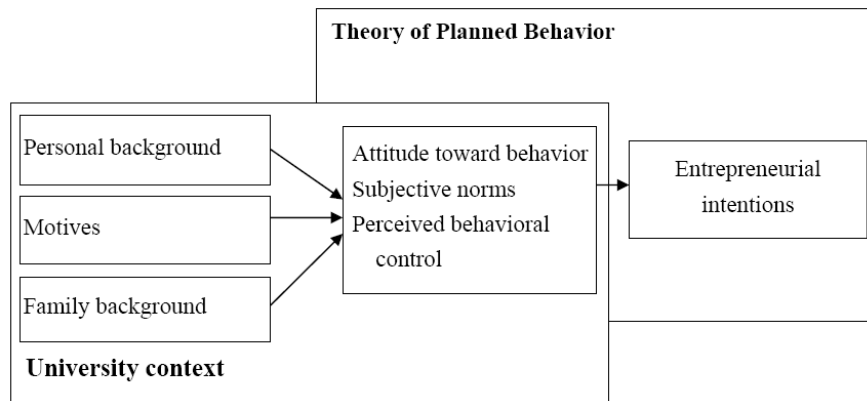
Figure 1
Theoretical framework of GUESSS 2011
Sieger et al. 2011

On the basis of this survey, the factors of Ajzen's model, as well as the most important factors influencing them can be analysed.

5   Students' Entrepreneurship Index

From the GUESSS questionnaire an Entrepreneurship Index was calculated. The calculation is based on two questions. The first one is: „*Please indicate if and how seriously you have been thinking about founding an own company* (only one answer was allowed). The second was: *Which steps have you already undertaken to found your company?* (Multiple answers were possible). The index quantifies the entrepreneurial power of students across countries.

The Entrepreneurship Index was calculated for every student. However, by aggregating the indices by several criteria (countries and institutions), this index can be used for comparison.

The first question set offered eight response options. Since the response options reflected an increasing level of entrepreneurial star-up intentions, by effect coding (weighting) the response options were assigned a score (1, 3, 5, 7 and 10) as follows: Non-founder (1), Intentional founder (3-7) and Founder (8-10). Table 2 shows the responses and their weights.

	Option	Weight	Type of founder
1	Never	1	Non-founder
2	Sketchily	1	Non-founder
3	Repeatedly	3	Intentional founder
4	Relatively concrete	3	Intentional founder
5	I have made an explicit decision to found a company	5	Intentional founder
6	I have a concrete time plan when to do the different steps for founding	7	Intentional founder
7	I have already started with the realization	7	Intentional founder
8	I am already self-employed in my own founded firm	8	Existing founder
9	I have already founded more than one company, and am active in at least one of them	10	Existing founder

Table 2

Index weights of the Question 1

Sieger et al. 2011

Intentional founders received an additional set of questions pertaining to the steps that they had already undertaken. The questions reflected the increasing intentions and were weighted differently A score was given to each option, as shown in the following table.

	Option	Score
1	Nothing done so far	1
2	Thought of first business ideas	3
3	Formulated business plan	5
4	Identified market opportunity	5
5	Looked for potential partners	5
6	Purchased equipment	7
7	Worked on product development	7
8	Discussed with potential customers	7
9	Asked institutions for funding	6
10	Decided on date of foundation	10

Table 3

Index weights of the Question 2

Sieger et al. 2011

Since multiple answers were also possible, the point values of certain answers were added and the received results were taken into consideration when the Entrepreneurship Index was calculated. For existing founders, it is assumed that they have undertaken all possible steps. Their score has been adapted accordingly. The responses 'Never' and 'Sketchily' were assigned 1 index value since the second question set could not be interpreted and the respondents did not need to answer it.

Compared to GUESSS 2006 and 2008, answer categories, options, and weights of both questions used for the index were slightly adapted based on other large-scale research projects (Panel Study of Entrepreneurial Dynamics, PSED, and Global Entrepreneurship Monitor, GEM) (Sieger et al. 2011). Thus, absolute index values of 2011 and index values of the previous years cannot be compared.

6 The survey hypotheses - the most important factors of the index

This paper investigated three major exogenous areas in terms of the Ajzen's model which affected the Entrepreneurship Index. The areas were as follows: personal background (age, gender, and personal characteristics), family background and the role of the educational institution.

The students' personal background, namely their age and gender, determine the students' Entrepreneurship Index. Students' personality traits (risk taking intentions, creativity and so on) also have an impact on the Entrepreneurship Index (Elam 2008). In addition, it is crucial to find out whether the responded students have any previous entrepreneurial experience in the family business. Their relationship to their family business is likely to show further deviations. The stronger the link to the family business is, the deeper insight the students have into their family business activities and the more involved they are in these activities, the higher the Entrepreneurship Index is likely to be (Birley 2002). The educational background also affects the index. First, students acquire knowledge from a wide range of training programmes (entrepreneurship, economics), which they can use in entrepreneurship processes. Second, they can benefit from the entrepreneurship environment created by the higher institution and the infrastructure offered by it (Fayolle 2000).

The following hypotheses were formulated and tested:

H1a: Male students have higher index value and are more open to business start-ups than their female counterparts.

H1b: The Entrepreneurship Index increases with the respondents' age.

H2: The family business background has a favourable effect on the Entrepreneurship Index.

H3a: Services, courses and resources provided by universities positively affect the Entrepreneurship Index. The more entrepreneurship-related training programmes are offered, the wider range the services and resources are provided and available, the higher the Entrepreneurship Index is.

H3b: The more entrepreneurship-oriented the university environment is, the more favourable the Entrepreneurship Index is.

H3c: The field of studies plays a determining role in the development of the Entrepreneurship Index. The highest index was experienced in business students.

H3d: The training level also positively affects the Entrepreneurship Index. The higher level students study at (the more knowledge is acquired), the higher the Entrepreneurship Index is measured.

7   Results

7.1   The role of personality traits

It is common knowledge that entrepreneurship is a predominantly male field. This specific feature of entrepreneurship is reflected in the calculated Entrepreneurship Index, since this index in the case of male entrepreneurs was nearly twice as high as in female entrepreneurs. Compared to male, the rate of female respondents preferring public life styles was much higher, especially in the years right after graduation.

Gender	Mean	N	Std. Deviation
Male	10.102	2305	14.137
Female	5.932	3372	10.514
Total	7.625	5677	12.287

Table 4

Students' Entrepreneurship Index in 2011

The age is another factor that considerably affects the entrepreneurial career intentions. There is a significant negative correlation between the date of birth and the index value (Pearson Correlation=-0.226, p=0.000). The obtained results show that H1a and H1b hypotheses can be accepted.

7.2   The role of family business background

The family business background plays an important role in the development of entrepreneurial intentions and business start-ups. Students raised in a business

environment can acquire not only knowledge related to business and venture, but they easily adopt business life styles as well.

The table below shows Entrepreneurship Index of students with a business background. The findings confirm the formulated hypotheses: the mean Entrepreneurship Index of students with a family business background is significantly higher than of those without a business background (Eta=0.134, p=0.000). (Table 5).

Family Business Background	Mean	N	Std. Deviation
No family business background	6.208	3260	10.968
Yes, raised in a family business	9.547	2414	13.646
Total	7.628	5674	12.290

Table 5

Family business background and the Entrepreneurship Index in 2011

Students with emotional attachment with family businesses produce higher index values than those without this (Pearson Correlation=0.283, p=0.000). The similar results are measured among students with family business traditions and customs (Pearson Correlation=0.078, p=0,003), and those who come from families where retaining the family business is given a high priority (Pearson Correlation=0.141, p=0.000). The Entrepreneurship Index is also high in case of students who have an insight into family business (financial) performance (Pearson Correlation=0.18, p=0.000).

The obtained results show that there are several motives lying in the background of the favourable impact the family business has on the Entrepreneurship Index and all of them channel this index in a positive direction.

7.3 Education

The students' Entrepreneurship Index in terms of education can be evaluated from two different aspects. First, the study fields students are interested in (Business and Economics, Natural Sciences, Social Sciences) and second, the training level.

There are no differences in terms of the level of studies (H3d is not supported). However, there are significant correlation differences in study fields. The Entrepreneurship Index of students enrolled for business programmes is higher than the average.

Field of study	Mean	N	Std. Deviation
Business and Economics	8.330	2185	13.181
Natural Sciences	7.186	1738	11.517
Social Sciences	6.884	796	12.235
Total	7.665	4719	12.445

Table 6

Entrepreneurship Index by field of studies in 2008 and 2011

The obtained index values are aggregated by institutions and an institution ranking is compiled (See Table 7). There are similar rankings in the analyses conducted by Farkas, Kovács (2010).

	Mean	N	Std. Deviation
ÁVF	13.013	147	18.430
GDF	11.494	182	14.926
MÜTF	10.641	145	16.306
BCE	8.940	201	13.365
KJF	8.898	423	13.693
SZE	8.321	681	13.473
SZIE	8.006	166	14.306
DE	7.905	538	12.279
ME	7.643	620	12.345
KRF	7.350	97	10.366
DF	7.335	158	10.527
NYME	7.333	291	13.490
ELTE	6.668	175	10.815
KE	6.552	38	11.310
BGF	6.309	620	8.807
EJF	6.261	65	10.371
PTE	5.788	757	9.768
SZTE	4.956	254	8.686
SE	3.753	65	5.138
Total	7.625	5677	12.287

Table 7

Entrepreneurship Index by higher institutions in 2011

The Budapest College of Management, the Dennis Gabor College and the College for Modern Business Studies are at the top of the ranking list. The deviations in the Entrepreneurship Index by higher institutions can be explained be several

factors, some of which are tested in the questionnaire. One of them is the prosperity of the place where the higher institution is based. There is a significant correlation between counties. The higher economic performance a county where the higher institution is based can achieve (GDP per capita), the higher the Entrepreneurship Index is. (See Table 8).

County	GDP per capita (thousand Ft), 2009	Entrepreneurship Index	N	Std. Deviation
Komárom-Esztergom	2506	10.641	145	16.306
Fejér	2152	8.473	581	12.919
Budapest	5800	8.032	1401	12.150
Győr-Moson-Sopron	2735	8.025	972	13.479
Pest	2169	8.006	166	14.306
Hajdú-Bihar	1879	7.905	538	12.279
Borsod-Abaúj-Zemplén	1577	7.643	620	12.345
Heves	1783	7.350	97	10.366
Somogy	1626	6.552	38	11.310
Bács-KIskun	1698	6.261	65	10.371
Baranya	1773	5.788	757	9.768
Csongrád	1907	4.956	254	8.686

Table 8

County ranking by economic performance and Entrepreneurship Index in 2011

Education and educational institutions play a determining role in entrepreneurial intentions. One of the aims of the GUESS research is to evaluate the impact of the institutional context, to elaborate educational and supporting programmes tailored to the context and their implementation.

The entrepreneurial environment created by tertiary institutions is in a weak positive correlation with the Entrepreneurship Index values. Even if the economic potential variable (GDP per capita) is controlled (partial correlation), the poor and insignificant explanatory power is still retained showing that different efforts the higher institutions attempt to make are reflected in the index values.

Apart from the entrepreneur-friendly environment created by higher institutions, the services provided by these institutions also positively affect the Entrepreneurship Index. Three areas were analysed from this aspect: the information about the available business and economics courses, the provided services and offered resources the students had access to.

The findings show that the respondents preferred conventional forms of education to advanced resources ensured by their institutions. As for the offered courses, the

difference in the index values was the largest. The same difference was experienced in the services. However, there was no deviation in the index values related to resources.

	Is there such an offering at your University?			Have you attended?	
	Yes	No	Do not know	Yes	No
Lectures and seminars about…					
Entrepreneurship in general	8.113	7.354	6.359	8.648	6.279
Family firms	8.869	8.060	7.205	9.066	8.694
Financing entrepreneurial ventures	8.322	7.544	6.968	9.112	7.393
Technology entrepreneurship	9.055	7.721	7.264	10.762	8.110
Social entrepreneurship	8.511	8.091	7.243	8.506	8.514
Entrepreneurial marketing	8.599	7.227	6.347	10.095	6.886
Innovation and idea generation	9.001	7.837	6.954	11.002	7.486
Business planning	8.410	6.817	6.457	9.285	7.336
Networking and coaching offerings					
Workshops/networking with experienced entrepreneurs	8.680	7.868	7.160	9.977	8.104
Contact platforms with potential investors	8.359	7.985	7.165	8.853	8.116
Business plan contests / workshops	8.284	7.733	7.063	10.285	7.646
Mentoring and coaching programs for entrepreneurs	8.507	8.442	7.174	9.863	8.154
Contact point for entrepreneurial issues	8.096	8.487	7.256	10.202	7.361
Provision of resources for founders/entrepreneurs					
Technology and research resources (library, web)	7.508	8.472	7.825	7.602	7.198
Seed funding / financial support from University	6.246	9.951	7.700	6.084	6.409

Table 9

Entrepreneurship Index by services provided by tertiary institutions and used by students in 2011

The deviations in the mean index values are even higher than that if not the students' awareness about the offered courses and available services is analysed, but what courses they sign up for and what services they use. The correlation in this case is the same, too. The participants and users have higher index values than those who have only some information about the available services and courses, but do not utilise them. As for the ensured resources, there is no significant deviation (See table 9).

Gubik (2011) conducted a regression analysis and came to the conclusion that the available services are efficient in terms of triggering entrepreneurial intentions if the services are both available and highly utilised. It becomes obvious that the aim is not to increase the number of offered courses, services and resources or to improve access to them, but to increase the students' needs for them. The research findings confirm this conclusion.

Conclusions

Fostering entrepreneurship has become a priority for economic policy makers. It is of essential importance to identify the factors that shape the students' entrepreneurial intentions. It has also become crucial to analyse the areas that considerably contribute to developing these intentions.

Apart from the personal background (age, gender, and personal traits), such environmental factors as the family business background and the university or college context are of essential importance in fostering entrepreneurial intentions. The research findings confirm the favourable impact of these factors on the Entrepreneurship Index.

As for the areas under analysis, the role of higher institutions should be highlighted since here we can channel the students' entrepreneurial intentions in a positive direction. The findings show that the role of the conventional solutions (courses) remains important. The results of this research are in contradiction with other research findings. Apart from conventional solutions, other services offered by institutions also positively affect students' entrepreneurial intentions. In both cases the role of students' participation and involvement is of utmost importance. The students who actively attend courses and events are not only aware of them, achieve higher index values. The aim is not to widen the choice of services and courses, but to increase students' participation in them.

In order to have a better understanding of the role of the institutional context, further investigation of students' entrepreneurial attitudes, values and motives is of utmost importance.

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Abb. of higher education institutions

BME – Budapesti Műszaki és Gazdaságtudományi Egyetem (Budapest University of Technology and Economics), BCE – Budapesti Corvinus Egyetem (Corvinus University of Budapest), SZE – Széchenyi István Egyetem (Szechenyi Istvan University), DE – Debreceni Tudományegyetem (University of Debrecen), ME – Miskolci Egyetem (University of Miskolc), PTE – Pécsi Tudományegyetem (University of Pécs), SZTE – Szegedi Tudományegyetem (University of Szeged), PE – Pannon Egyetem (University of Pannonia), KE – Kaposvári Egyetem (Kaposvár University), NYME – Nyugat-magyarországi Egyetem (University of West Hungary), ELTE – Eötvös Lóránd Tudományegyetem (Eötvös Lóránd University), SZIE – Szent István Egyetem (Szent István University), BGF – Budapesti Gazdasági Főiskola (Budapest Business School), BMF – Óbudai Egyetem (Obuda University), DF – Dunaújvárosi Főiskola (College of Dunaújváros), KRF – Károly Róbert Főiskola (Károly Róbert College), ÁVF – Általános Vállalkozási Főiskola (Budapest College of Management), GDF – Gábor Dénes Főiskola (Dennis Gabor College), IBS – Nemzetközi Üzleti Főiskola (International Business School), EJF – Eötvös József Főiskola (Eötvös József College), HFF – Heller Farkas Főiskola (Heller Farkas College), KJF – Kodolányi János Főiskola (Kodolányi János University of Applied Sciences), MÜTF – Modern Üzleti Tudományok Főiskolája (College for Modern Business Studies), SE-ETK – Semmelweis Egyetem - Egészségtudományi Kar (Semmelweis University, Faculty of Health Sciences)