

ACADEMIC ENTREPRENEURSHIP WITHOUT BORDERS

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Abstract:

Since march 2013, Lublin Science and Technology Park (LSTP) and Maria Curie Skłodowska University have been implementing the INNO-BROKER project. In the framework of the project, a strategy and a model of education for innovation brokers is to be developed. The task of people employed as innovation brokers will be to acquire novel and innovative technologies and solutions developed in Lublin universities and find buyer among businesses. Innovation brokers will also provide consultancy for entrepreneurs, identify research problems and find contractors to solve these. The initiative of the LSTP aims at increasing innovation in Lublin region by the development of academic entrepreneurship. The present paper is concerned with academic entrepreneurship understood as entrepreneurial activity of the academia- students, graduates and scientists. The paper presents recruitment results of Inno-broker project, motivation of people to become innovation brokers and their future professional plans as regards entrepreneurship. Authors' objective is to analyse factors influencing the development of academic entrepreneurship and young people's motivation to undertake entrepreneurial activities. Empirical data was collected as a result of recruitment process in INNO-BROKER LSTP project. Analysis of application questionnaires allowed for data from 151 out of the total of 210 respondents (students, graduates, scientists interested in the development of academic entrepreneurship) to be collected.

Keywords: academic entrepreneurship, students, graduates, innovation

1. INTRODUCTION

The issue of academic entrepreneurship has become immensely popular in recent years. It is largely a consequence of the changing role of the university, which is gradually becoming the third generation university as opposed to the previous medieval and Humboldt-type ones. A modern university does not only educate and develop and is no longer detached from the socio-economic conditions. In the knowledge-based economy, education becomes a significant economic growth factor contributing to the emergence of innovation, establishment of hi-tech and spin-off/ spin-out companies and, consequently, development of competitiveness (Borges & Filion, 2013, pp. 22-23). At present, the university fulfils not only the previous, education and research roles but, more and more frequently, shapes entrepreneurial attitudes among students and scientists enabling them to function on the market independently.

The present paper is concerned with academic entrepreneurship understood as entrepreneurial activity of the academia – students, graduates and scientists. The paper presents recruitment results of Inno-broker project, motivation of people to become innovation brokers and their future professional plans as regards entrepreneurship. Authors' objective is to analyse factors influencing the development of academic entrepreneurship and young people's motivation to undertake entrepreneurial activities.

2. THE ISSUE AND THE LITERATURE

The mission of modern university in global world is not only to be a knowledge-generating institution. At present another mission of university is a response to global processes, changing environment, internationalization of studies and science, and increased competition (Binkauskas, 2012, pp. 232-233).

In order to survive in a global market, modern university must be flexible. Nowadays university have to act as provider of intellectual capital as well as a medium for the creation of new companies and innovations. "The mission of an entrepreneurial university implies that universities have now found themselves in the conditions of global competition in striving for students in the so-called 'mass market of higher education'; moreover, they are encouraged to provide their own research for practical application and get benefit from this activity" (Binkauskas, 2012, p. 234).

The emergence of entrepreneurial mission of the university was stimulated by several external factors. The first of these is the decrease in public financing for universities, which demands a higher degree of competitiveness on their part in order to obtain additional external resources. Next factor exerting influence upon the issue is the fact that business and industry operate in close proximity to the academia and more and more frequently play a significant role in its activities. The influence of business upon universities and scientists is growing. On the other hand, universities- innovation generators cooperate in the process of knowledge, technology and innovation moulding.

Current position of universities is closely related to the ever-stronger local, regional and even global cooperation. Common projects are implemented, new companies are established. These companies generate new work-places for students and graduates (Schulte, 2013, p. 118).

The interest in the issue of academic entrepreneurship has led to the emergence of numerous definitions of the term. Predominantly, it is understood as entrepreneurship of the academia manifesting itself in the involvement of research institutions, their employees, students, doctoral students and graduates in various types of business activities.

The development of academic entrepreneurship is fostered not only by the above-mentioned external factors, but also by internal ones, which depend on the academia, such as the pursuit of development and intensification of business-university cooperation, focus on novelties and innovation (Osiri, McCarty, 2013, p. 4). Universities' autonomy and independence, which enable the shaping of development and innovation culture and emergence of conditions favourable to innovation, is of crucial importance. Researchers are unanimous in the opinion that current flexibility of the academia and capacity of adapting to a novel educational model, which demands more intensive cooperation with business, pro-activity and innovation, seem extremely significant (Shattock, 2005).

In such innovative activities, universities ought to grant their young faculty members freedom of undertaking additional entrepreneurial activities and develop organisational infrastructure and mechanisms supporting young people in such activities (e.g. involvement in technology transfer centres, science parks, innovation centres, business incubators) (Brennan & McGowan, 2005). Literature of the subject emphasises the fact that academic entrepreneurship is a complex issue and universities' decisions as regards the development of such strategies require scientists and students to be presented with the opportunity of participation in projects aiming at the development of entrepreneurship (Laukkanen, 2003).

Economic indicators for Lublin region confirm the fact that Lublin Voivodeship currently ranks among the poorest regions of the EU. Companies located in the region are characterised by low innovation and the region's inhabitants by low activity. However, the voivodeship possesses significant intellectual and social potential moulded by an exceptionally large number of universities and research institutions. Due to the considerably high unemployment rate, talented and well-educated young people decide to migrate, which leads to the drainage of potential in the region. In order to counteract these unfavourable trends, local authorities search for methods of encouraging the people to remain in the voivodeship. In the face of insufficient number of job offers there arises the necessity of encouraging self-employment, supporting the development of academic entrepreneurship and closer cooperation between research institutions and businesses leading to the commercialisation of knowledge and research results.

Business-university cooperation networks, present in the framework of regional innovation initiatives, play a significant role. An example of such cooperation is the INNO-BROKER project currently under implementation by Lublin Science and Technology Park (LSTP) and Maria Curie Skłodowska University.

In the framework of the project, a strategy and a model of education for innovation brokers is to be developed. The task of people employed as innovation brokers will be to acquire novel and innovative technologies and solutions developed in Lublin universities and find buyers among businesses. Innovation brokers will also provide consultancy for entrepreneurs, identify research problems and find contractors to solve these. The initiative of the LSTP aims at increasing innovation in Lublin region by the development of academic entrepreneurship.

3. RESEARCH METHODOLOGY

Empirical data was collected in January 2014 as a result of recruitment process in INNO-BROKER LSTP project. Analysis of application questionnaires allowed for data from 151 out of the total of 210 respondents (students, graduates, scientists interested in the development of academic entrepreneurship) to be collected.

Project organisers requested candidates to fill in application forms. Initial selection of participants in the project was carried out on the basis of information supplied in these. The form consisted of questions regarding:

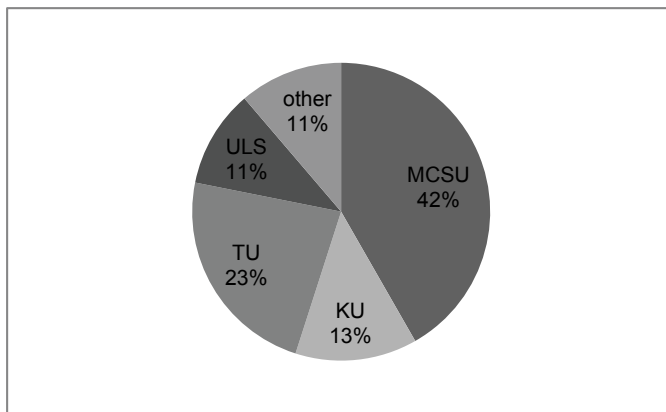
- university degrees;
- applicant's age (30 years old or lower);
- academic grades;
- membership in university organisations acting for science and business;
- membership in extramural organisations acting for science and business;
- other public activities;
- participation in international student exchange (e.g. Erasmus programme, international conferences, fairs);
- level of proficiency in English;
- level of proficiency in other foreign languages;
- undertaking employment while studying;
- current employment;
- self-evaluation of familiarity with innovative technologies in the acquired profession;

- self-evaluation of familiarity with general technological innovation (in ICT, automotive, medical, aviation branches, bioengineering, nanotechnologies, etc.);
- scientific activity (scientific publications);
- experience in trade;
- computer games;
- declared desire to work in a large, international corporation.

4. RESEARCH OUTCOME

Applicants' analysis was carried out on the basis of information supplied in the application forms.

Picture 1: The structure the candidates group – university

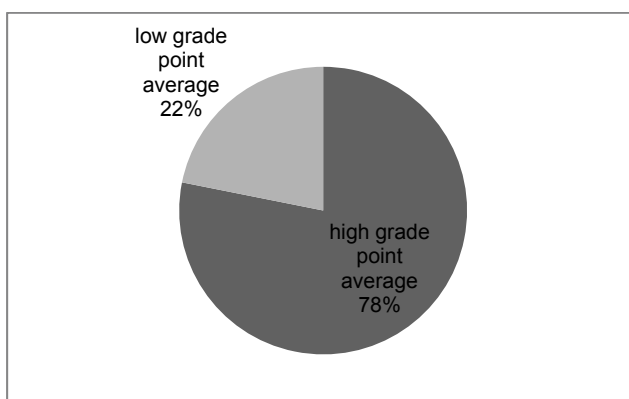


Notes: MCSU – Maria Curie-Skłodowska University, KU – John Paul II Catholic University, TU – Technical University of Lublin, ULS – University of Life Science
Source: authors' own findings.

The largest group of applicants (42%) consisted of graduates of Maria Curie Skłodowska University. 23% of applicants represented Lublin University of Technology, 13% John Paul II Catholic University of Lublin. Both University of Life Sciences in Lublin and other universities were represented by 11% of respondents (Picture 1).

Taking applicants' age under consideration, it turned out that substantial majority of respondents did not reach 30 years old. As far as academic grades are concerned, majority of applicants (80%) achieved very good grades (Picture 2).

Picture 2: The structure of the candidates group – grade point average

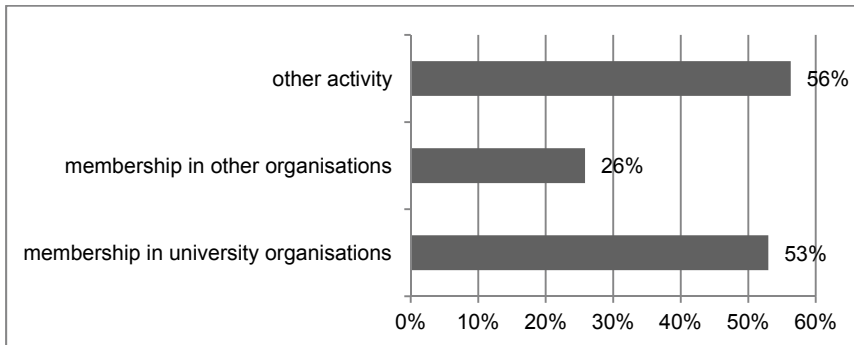


Source: authors' own findings.

Position of innovation broker requires intermediate skills in English at minimum. Approximately 74% of applicants declared at least B2 English proficiency. 62% of applicants indicated additional skills in other foreign languages.

Applicants exhibited pro-active attitudes, which is supported by their application for the position. When asked about their activities, 53% of applicants declared membership in university organisations acting for science and business (science clubs, student government bodies, etc.) (Picture 3). One in four applicants participated in activities of extramural organisations acting for science and business. In addition, more than half (56%) of applicants declared participation in other forms of public activities (e.g. voluntary work, activity in organisations uninvolved with science and business).

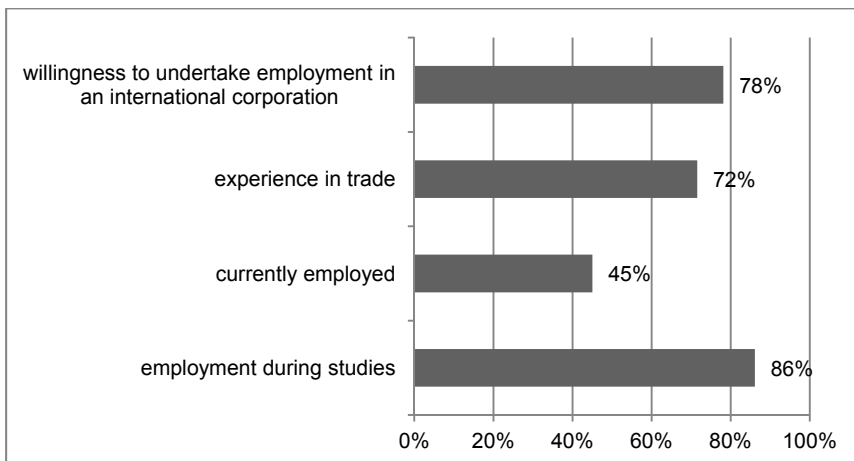
Picture 3: Applicants' activity



Source: authors' own findings.

As far as work experience is concerned, 86% of applicants stated they undertook employment during their studies. In addition, 45% stated that they are currently employed. 78% of applicants declared willingness to undertake employment in an international corporation in the future. 72% of applicants declared previous experience in trade (Picture 4).

Picture 4: Candidates' experiences



Source: authors' own findings.

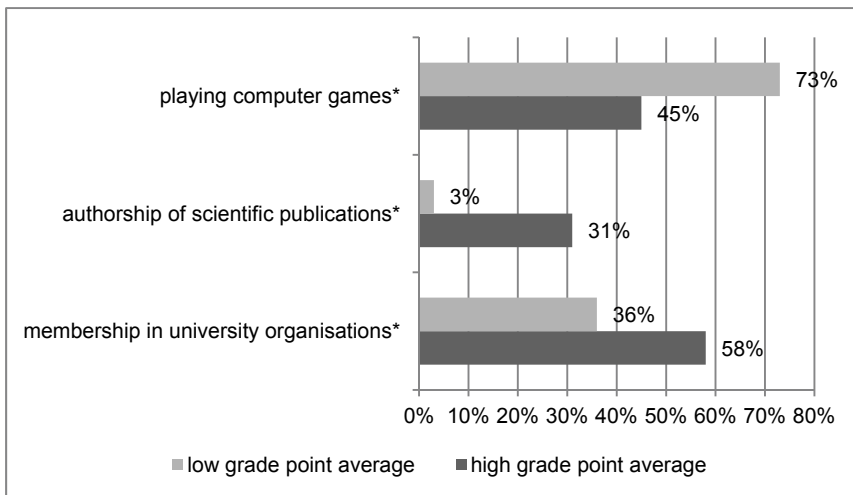
8 in 10 applicants declared familiarity with technological innovation in their acquired profession and 43% familiarity with such technologies on a general level (in ICT, automotive, medical, aviation branches, bioengineering, nanotechnologies, etc.). Every fourth applicant declared scientific activity (scientific publications). Every second applicant spent their free time playing computer games.

The analysis of the degree to which variables characterising applicants influenced activities they undertook indicated that the type of university applicants graduated from did not differentiate the

activities. The case was not so as far as academic grades were concerned (Picture 5). Applicants who achieved high grades, undertook activities in organisations for business and science more frequently than those with lower grade point average (58% vs. 36% respectively, $X^2=4,71$, $df=1$).

Applicants with very good grades were often scientifically active i.e. had their articles/ papers published (31% vs. 3%, $X^2=14,6$, $df=1$). On the other hand, applicants with lower grade point average, spent significantly more of their free time playing computer games (45% of applicants achieving high grade point average vs. 73% of those who did not achieve such high GPAs, $X^2=8,24$, $df=1$).

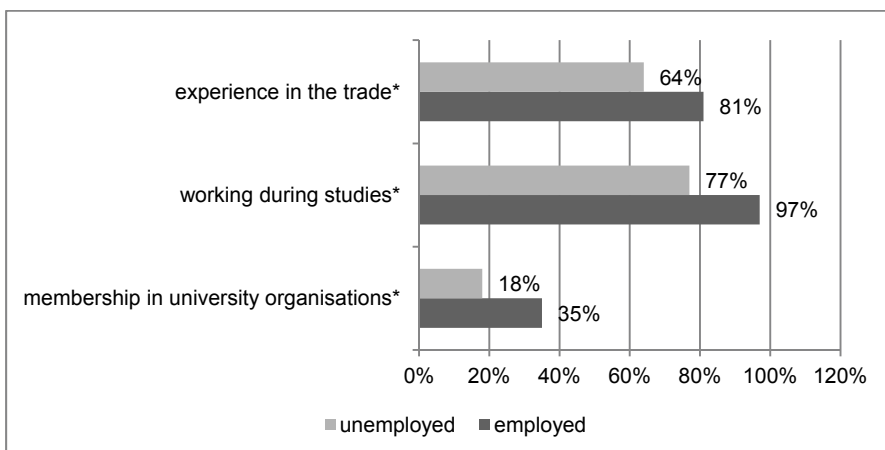
Picture 5: Academic grades vs undertaken activities



Notes: *- statistically significant differences ($p<0,05$)
Source: authors' own findings.

Applicants' current employment status differentiated some of the activities (Picture 6). Those employed declared membership in university organisations for science and business more frequently than their unemployed counterparts (35% vs. 18% respectively, $X^2=5,79$, $df=1$). In addition, such applicants connected studies with employment (97% vs. 77%, $X^2=14,4$, $df=1$) and declared previous experience in trade (81% vs. 64%, $X^2=5,45$, $df=1$).

Picture 6: Academic grades vs. undertaken activities



Notes: *- statistically significant differences ($p<0,05$)
Source: authors' own findings.

5. CONCLUSIONS

Study results' analysis indicated that young people applying for the position of innovation broker exhibited activity in various areas. The majority of applicants, despite their young age (95% of them were below 30 years old) possessed previous work experience (86% of them connected studies with employment), were members in university (53%) and extramural organisations (26%) for science and business or were involved in other types of activities (56%) such as voluntary work or community service. Moreover, applicants were characterised by high grade point average (78%) and familiarity with technological innovations, not only in their acquired professions but also on a general level.

Despite the fact that applicants for Inno-broker project exhibited pro-active attitudes, the attempt at selecting those who exhibited higher than average activity indicated differentiation in the group. It turned out that applicants who achieved very good academic results, became members of university organisations or could boast academic publications more often than other applicants. This fact can be clearly connected with the association of high grade point average with scientific activity- people who enjoy studying and achieve high results, are more willing to attend conferences, conduct research, publicise results, participate in science clubs, etc.

In addition, applicants' current employment status influenced their activity as well- those employed became members in university organisations for science and business and connected studies with employment more often.

The profession of innovation broker is a novelty on Polish market. Such profession seems to be desired as a link connecting science and universities with business. It is difficult to evaluate the efficiency of such initiatives at the moment. However, in the opinion of Inno-broker project authors, it will prove beneficial. The project, in accordance with its stipulations, ought to improve science-business cooperation, foster the development of academic entrepreneurship, and at the same time, directly contribute to lifting the current barriers in cooperation as regards this area.

At present, representatives of Lublin universities and business as well declare willingness to cooperate as regards the development of novel technologies, commercialisation of research results, and implementation of innovations. In addition, business environment institutions operating in the region declare their interest in cooperation with universities and businesses. In accordance with a 2011 expert study (Boguszewski, 2011, p. 43), approximately 70% of institutions operating in Lublin Voivodeship declared willingness to cooperate with R&D institutions and businesses as regards the establishment of a common business incubator, organisation of internships for scientists and students, clustering initiatives, etc. At the same time, representatives of these institutions pointed out barriers in cooperation, such as little interest of university management regarding business-science projects, considerable teaching workload of scientists, forgoing the potential of business environment institutions, largely dispersed offer of these institutions.

Innovation brokers' activities may contribute to lifting current barriers in the development of academic entrepreneurship. Provided that brokers are motivated enough and are able to present an interesting cooperation offer, the business-science cooperation in the region may improve. Undeniably, the challenge is great. However, should the desired effects be achieved, it will provide not only for an effective realisation of the project's stipulations but will also bring tangible benefits for institutions operating in the region.

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