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Thematic Issue

Economics of Higher Education

edited by
Jan Brzozowski
Università Politecnica delle Marche, Italy
Marco Cucculelli
Università Politecnica delle Marche, Italy

Cracow University of Economics
Faculty of Economics and International Relations
Centre for Strategic and International Entrepreneurship

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Editorial

This issue opens a new chapter in the development process of our journal. In the period of 2013-2015 our quarterly has published only thematic issues. From 2016 onwards, we are starting to publish increasingly more general issues with a dominant topic (covered in the "**Thematic Articles**" section), followed by "**Other Articles**" section. This change was motivated by the growing interest of the academic community in EBER as a platform for publication and research results dissemination, reflected by the continuous increase in the number of submissions outside the scope of thematic issues.

The main topic for the current issue is the Economics of Higher Education. Higher education systems and higher education institutions in Europe, especially in Central and Eastern European countries, are currently facing several challenges. The origins of these problems can be found in the post 1989 period, as the former socialist countries have experienced a massive expansion and growth in the number of higher education institutions in the last two decades (Kwiek, 2007). As the result, the dynamic increase in the number of students, the emergence of private institutions and quantitative expansion of public academic centers could be observed. It is sometimes said that such developments have been a crucial factor of relative success of several transitional economies (Surdej, 2015). But now it becomes clear that these systems face hard challenges due to demographic change, limited public resources and increased international competition.

Therefore, this issue aims to address a number of these challenges by adopting a wide range of theoretical and empirical approaches.

The thematic section, including seven articles, starts with the conceptual papers: Łukasz Sułkowski in his article entitled *Accountability of University: Transition of Public Higher Education* discusses the concept of accountability in terms of the public and private universities management. Then the paper entitled *Historical and Theoretical Framework of the Relation between Higher Education Institutions and the Process of Regional Economic Development*, authored by Alexandru Cristian Fotea and Corneliu Guțu, describes the evolution in the relationship between higher education institutions and their socio-economic environment. Then the two empirical papers with a qualitative approach follow. Hanna Nowak in her paper entitled *The Role of the Polish Higher Education System in the Development of Entrepreneurship* investigates the perceived impact of entrepreneurship education in Poland. The next empirical paper entitled *Entrepreneurship Education at Secondary Level in Transition Economies: A Case of Poland*, authored by Tomasz Rachwał, Sławomir Kurek and Marta Boguś corresponds with the former one, by analyzing changes in entrepreneurship education in Poland at the lower and upper-secondary schools after the reform of the education system of 1999.

The thematic section includes also two research papers with the dominant quantitative approach. Lesław Rządziński and Anna Sworowska in their article entitled *Parametric*

and Non-parametric Methods for Efficiency Assessment of State Higher Vocational Schools in 2009-2011 investigate the technical efficiency of this very specific area of higher education in Poland. Then Krzysztof Wach and Liwiusz Wojciechowski in their paper entitled *Entrepreneurial Intentions of Students in Poland in the View of Ajzen's Theory of Planned Behaviour* analyze the determinants of entrepreneurial intentions among students from seven universities from Krakow, one of the most important academic centers in Central and Eastern Europe. The final paper from the thematic section entitled *Trends in the International Academic Migration: A Case of Spain*, authored by Antonio Mihi-Ramírez, discusses the challenges and opportunities stemming from the increasing international mobility of students.

The issue contains also three off-the-topic papers (Other Articles section). The first one off-the-topic *The Determinants of Sustainable Entrepreneurship of Immigrants in Lapland: An Analysis of Theoretical Factors*, authored by Nafisa Yeasmin, discusses the perspectives of the development of immigrant-run businesses in more peripheral and sparsely populated regions. Then Ghulam Mustafa and Rune Lines in their article off-the-topic *The Emergence and Effects of Culturally Congruent Leadership: Current Status and Future Developments* carry out an extensive and systematic review of the cross-cultural leadership literature and suggest avenues for future research developments. Finally, Jan Brzozowski and Marco Cucculelli in their paper entitled *Proactive and Reactive Attitude to Crisis: Evidence from European Firms* investigate the reaction of the companies to the recent economic crisis (2007-2009), taking into the account the concept of organizational learning (Cucculelli & Bettinelli, 2015).

Thus, we strongly believe that this issue offers an interesting blend of papers that combine the economic aspects of higher education in Central and Eastern Europe, but also immigrant entrepreneurship, cross-cultural leadership and international entrepreneurship.

Jan Brzozowski
Marco Cucculelli
Thematic Issue Editors

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Accountability of University: Transition of Public Higher Education

Łukasz Sułkowski

ABSTRACT

Objective: The main goal of the article is to discuss and elaborate on the basics foundations of the concept of accountability in terms of public universities management.

Research Design & Methods: The article is of descriptive character, based on literature review and its constructive critics.

Findings: The article presents the concept of entrepreneurial university to relate this idea to develop the accountability practices in higher education. Subsequently, the limitations of trends related to the development of the entrepreneurial university and accountability are discussed.

Implications & Recommendations: Higher education is increasingly becoming a business operation, in which competition plays a key role. Accountability at universities is established to implement a specific accounting and reporting system, which is a prerequisite for the existence of this accountability and responsibility. Accounting of higher education systems is a consequence of the marketization of universities.

Contribution & Value Added: The article assembles the scientific developments in four main fields, namely (i) entrepreneurial university, (ii) university accountability, (iii) accounting and autonomy of universities, (iv) measures of university performance.

Article type:	conceptual article
Keywords:	Accountability; university; higher education institutions (HEIs); economics of higher education
JEL codes:	I23, A20, H52

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INTRODUCTION

This article presents the foundations of the concept of accountability in terms of public universities management. General change in the direction of "entrepreneurial university" increases the focus on the economic aspects of the business activities of universities. Consequently, it is necessary not only to develop sources of income and methods of controlling costs, but also expand financial reporting for universities. The answer to these challenges is to establish the concept of accountability, serving to govern universities. The article presents briefly the concept of entrepreneurial university and relate this idea to develop the accountability practices in higher education. Subsequently, the limitations of trends related to the development of the entrepreneurial university and accountability are discussed.

MATERIAL AND METHODS

The main goal of the article is to discuss and elaborate on the basics foundations of the concept of accountability in terms of the public universities management.

The article is of descriptive character, based on literature review and its constructive critics. The article arranges existing scientific developments on accountability at universities in order. The article consists of four main sections of literature review and theory development (except for the introduction and conclusions): (i) entrepreneurial university, (ii) university accountability, (iii) accounting and autonomy of universities, (iv) measures of university performance.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Entrepreneurial University

Many researchers point to the different directions of development of modern universities (Brint, 2005). What dominates is the view of university transformation into an business market organization, executing the concepts of "new public management" (De Boer, Jürgen, Schimank 2007, Hood, 1995, pp. 93-109). Based on this management approach universities become "producers" of educational services in a competitive market.. This applies to teaching students, but equally to research performed by academics. The final shape of a new model is not yet established, although, according to Ronald Barnett, it will enable the resurection of an organization called the university (Barnett, 2000).

Barbara Sporn has identified three general approaches to university management: new public management, entrepreneurialism and academic capitalism. According to Sporn, NPM, in respect of universities in the EU, is focused on the creation and strengthening of education quality management systems based on TQM. This refers to of both British and the Scandinavian universities. Other management methods used in universities and motivated by NMP, are for instance: project management, contract management, evaluation, audit and accreditation, as well as institutional autonomy and accounting (Sporn, 2006, p. 145).

"The entrepreneurial university" is a concept developed and popularized by Clark (1998). By studying five universities and their ability to respond to challenges arising from

the environment, he has identified five variables."The entrepreneurial university" is characterized by:

- strong managerial and leadership core,
- integrated culture of entrepreneurship,
- varied sources of university funds,
- extensive developing peripheral areas,
- stimulating core of academic activities (Clark 1998).

A strong managerial and leadership core refers to a high degree of organizational autonomy, accompanied by a separation of professional managers and administrators and academic structures. Enterprise culture is a source of identification for employees of the university, who combine individual and institutional autonomy. Diversified funding of higher education institutions leads to the strengthening of autonomy and independence, but also economic security. "Entrepreneurial universities" are increasingly investing in new technologies, start-ups and spin-offs. All these aspects of the entrepreneurial university are developing on the high quality base, in the form of educational and research activities of the university (Sporn, 2006, p. 145).

Higher education is increasingly becoming a business operation, in which competition plays a key role (Sporn, 2006, p. 145). These changes strengthen the activities of the management team (executive committee), which consists of the leaders of individual units (Sporn, 2006, p. 148). What is also formed is a group of professional managers and administrators in educational activities (Sporn, 2006, p. 153).

University Accountability

Accountability is for public institutions a continues reliability and clarity of settlements. Thus, it is established to implement a specific accounting and reporting system, which is a prerequisite for the existence of this accountability and responsibility.

The concept of accountability made a great "career" in the discourse of social sciences, becoming in the last decades a kind of buzz-word. This concept is sometimes particularly intensively used in relation to the public sector, including universities. The term is ambiguous and axiological, as evidenced by the discourse analysis carried out by Melvin Dubnick, combining different types of definitions and narratives. Accountability may therefore constitute a commitment to: strengthen democratization, increase control, provide greater fairness or efficiency gains (Dubnick, 2012), as shown in the table below.

Universities receive money from public funds, and in some cases, such as the US, also from significant private donors. This creates a pressure in the direction of transparency of universities' accounts. The public has a right to know how funds are spent by universities, which creates a pressure to introduce institutions and mechanisms enabling those settlements (Bogue & Hall, 2003b, p. 224). In the US, this tendency to increase financial control over universities manifests itself by, among others:

- increasing number of government regulations regarding assessment of quality, curriculum and teaching staff of a university,
- growing number of states requiring the university to undergo the mandatory process of accreditation,

– an increase in the number of states requiring reporting effectiveness and assessing the performance of spending of funds by universities,
– limited autonomy of universities by state and federal agencies (Bogue & Hall, 2003b, p. 228).

Table 1. Ways of understanding the concept of accountability

Understanding of accountability	Concentration of discourse	Promise (value of concept)	Topics and researchers
Solutions and actions to limit the omnipotence of power through social responsibility and strengthening the sensitivity and readiness to provide public explanations by those in power.	Institutionalization	The increase of democratization	Constitution Making (Habermas 2001, Habermas & Regh 2001), Self-Restraining State (Schedler, Diamond &Plattner 1999); Accountability forums (Bovens 2007), Horizontal accountability (O'Donnell 1998)
The methods and concepts allowing for anticipation and management of operations and activities in organizations.	Standardization, mechanization	The increase in the degree of control	Administrative control (Kaufman 1967); Bureaucratization (Eisenstadt 1959; Markoff 1975; Baron, Burton &Hannan 1999); Hummel (2008); Rules (Kaplow 1992), Reporting (Connolly & Hyndman 2004; Cooper & Owen 2007), Auditing (Ashton 1990; Power 1999; Schwarz &Sulitzeanu-Kenan 2002)
The formalization of rules and procedures, usually taking the legal form, which counteracts the effects of unwanted or unacceptable organizational behaviour.	Legislating	The increase of justice, better law regulation	Formality (Stinchcombe 2001), Rulemaking (Kerwin 2003), Criminalization (Dekker 2011), Enforcement (Malone 2010); Truth & Reconciliation (Allan & Allan 2000; Sarkin 2000)
Solutions, standards and measures developed in order to influence organizational behaviour.	Motivating, evaluating and rewarding	The increase of effectiveness and efficiency	TQM (Zbaracki 1998); Performance measurement (Hatry 2006); Performance management (Dubnick 2005), Standards (Kassel 2008).

Source: own elaboration based on Dubnick (2012).

Accounting and Autonomy at Universities

Accounting in higher education institutions is a consequence of the marketization of university. Research indicates that the pace and complexity of accounting and reporting of universities in the world is increasing, both in the private and public sectors. The two most important reasons are: growing economic pressure and the development of the concept of New Public Management. Financial strategies are converging to the business ones,

taking into account the revenue streams from: paid education, tuition fees of foreign students, etc. (Parker, 2012, pp. 247–268). Arthur M. Hauptmann indicates the following types of increasing orientation on accounting:

- audit and monitoring,
- regulatory performance measures,
- financing related to performance,
- market strategy (Hauptmann, 2006, pp. 91–92).

Representative surveys of Quaestors (Chief Financial Officers) in American universities conducted by the Gallup Organization in 2015 in the US indicate the growing complexity of accounting and financial analytics used to manage finacial flows at universities. Controlling systems of American universities allow to monitor revenues, expenses and debts, which is especially important in a situation of financial crisis. Admittedly, the study shows that as many as 81% of the Quaestors believe that their university is not threatened with closure in the foreseeable future. However, at the same time 56% of them confirms that the media information about the financial crisis in higher education are true, and 19% see the threat of closure of their university. Indicators of transparency are also fairly high in the examined sample, because on average, 57% of respondents stated that the financial data about the condition of their schools are made public (74% public, 35% private).The use of financial indicators to assess the condition of the university, controlling of costs and the debt is common and covers over 75% of institutions. 45% of respondents pointed to the profound changes in the last 4 fiscal years, and another 16% are planning such changes in the near future. Economic challenges result in plans among the majority of respondents to increase the revenue streams through: increasing the enrolment (82%), launching new profitable programs (70%), reducing tenures (14%) and assigning more teaching responsibilities to professors (19%). At the same time 61% of Quaestors believe that the key is restructuring costs of a university and that the financial challenges are understood primarily by higher administration (88%) and board members (79%) and in a low degree by the academic staff (32%) (The 2015 Inside Higher Education Survey, 2015).

The image of financial management of universities in the US, therefore, does not differ essentially in terms of organization from other business sectors. It is a professionalised activity managed by specialized staff of financial administration, using a complex system of controlling based on analytical ratios. The financial aspect of university management is also largely excluded from the collegial system and de facto professoriate have a minor impact on financial decisions. In Poland, more power entrusted to collegial bodies such as the senate and faculty councils mean that the degree of collegiality and participation of the academic staff in financial decisions are greater. In the world, most governance systems of universities is evolving towards ever more complex and professionalized accounting using business standards (Tomkins & Green, 1988, pp. 147–164).

Peter Ling conducted a comparative study of higher education systems in Australia and the UK and pointed to the tension between the aspirations for autonomy of universities and university accounting. Using the empirical illustration, Ling has identified several possible system activities conducted on the basis of the logic of New Public Management, which enhance the accountability of universities. First of all, it is possible to create institutions at the national level, which on one hand support, evaluate and disseminate good practices and innovations in the sphere of improvement of the education process, and on

the other hand control and accredit higher education. In Australia this role is played by the National Institute for Learning and Teaching in Higher Education created in 2005, and in the UK, the Quality Assurance Agency and the Higher Education Quality Council founded in 1992. It is also possible to create financial mechanisms promoting and disseminating effective practices via grants and awards for quality and improvement (Learning and Teaching Performance Fund, the Australian Award for University Teaching). Another activity is to create a system of education, certification and improvement, evaluation of teachers and awarding them with bonuses for education quality (Ling, 2005). Paradox is, as Ling indicates, that the growing importance of accountability is accompanied by the decrease in funding of universities from public funds. Yet, it seems that it is a trend that occurs in various sectors benefiting from public funding, as for example in medical sector. The key problems still to solve are: performance measures, limiting the political influence on the process of education, universities reaction subjected to pressures arising from accountability, the impact on the management mechanisms and the costs of introducing the changes.

Maintaining the balance between efficiency and transparency of university funding and its autonomy is a key concern of changes in governance and subsequent development of accountability systems. It concerns not only the education systems of the developed countries, as mentioned earlier: US, UK and Australia, but also fast-growing sectors of universities in the developing countries. Typically, these are the systems with State domination, but often also with a significant participation of private universities. China with its profound State control introduces very little autonomy at universities while increasing the complexity of accounting systems and external reporting. In India, 620 universities and about 35 000 higher education institutions are subject to a complex system of management and reporting at central and regional level, where institutions have very different degrees of autonomy, and thus, different reporting requirements (Gandhi 2013).

Orientation for the implementation of controlling systems focused on efficiency also refers to the quality of education, research, and even the implementation of a social mission (Sandu, 2014, pp. 169–175).

Measures of University Performance

In recent decades there has been a significant increase in accountability systems based on performance indicators both in university funding, as well as quality assurance and commercialization of scientific research (Darling-Hammond, Synder 2015). Polls show that an increase of emphasis on reporting and controlling is an international trend. It is manifested in adapting business models to accounting for finance, management of education quality and other processes in higher education (Welsh & Dey, 2002; Mutula, 2002; Cruickshank, 2003; Sahney et al., 2004; Freeman & Thomas, 2005; Burbules & Torres, 2000).

The use of appropriate performance indicators is essential to implement accountability systems, which in turn are essential for effective management of the university. Serge Cuenin defined performance indicators as a mathematical formula that provides a numerical value, which is the basis of evaluation or performance measurement of the system (Cuenin, 1987, pp. 117-139). Changes in the value of the indicator provide information on whether the system works more or less effectively. Filip Dochy and Mien Segers formulated three proposals, as to an accurate formulation of performance indicators. Firstly, they should be clearly linked to the function of the institution. Secondly, that they allow

for an assessment of only a selected aspect of the organization activity and should therefore be interpreted collectively. Thirdly, they constitute an adequate operationalization, allowing for the measurement, evaluation and interpretation of the operation of a particular aspect of the organization (Dochy & Segers, 1990).

In the Dictionary of Education Quality and Accreditation, more extensive definitions and typology of indicators and performance indicators were proposed. Indicators are defined as "operating variables referring to specific empirically measurable characteristics of higher education institutions or programs that provide information enabling to ascertain whether it meets the established standard". "Performance indicators are a set of statistical parameters representing a measure of the extent to which higher education institution or program implements the established standard." "A simple indicator is a generic pointer type in a form of a number that provides a simplified, relatively objective measure" (Vlăsceanu, Grünberg, & Pârlea, 2004, pp. 59–62; Bogue & Hall, 2003a). An example of a simple indicator would be the average number of candidates for the spot. As a result, performance indicators enable tracking the trends and comparing them between universities and programs. They make it possible to identify the areas requiring action and improvement. Indicators can also be used to create quality standards and quality management procedures of education (i.e. operationalization). At the same time, indicators must be distinguished from the measures, since the latter is merely a specific numerical value representing the reflection of selected efficiency aspect. In turn, a standard means an acceptable level of performance expressed in numbers. We can distinguish several different types of indicators:

- economic indicators (related to budgeting),
- performance indicators (current productivity, the effect in relation to the inputs for a unit),
- performance indicators (degree of goal attainment).

Another division assumes the differentiation of the following indicators: context, input, process and output, called from the English abbreviation the CIPO-model. Context indicators relate to the specific nature of the higher education institution or program regarding the following aspects: social, political, economic, demographic and others. Input indicators relate to organizational, financial and human resources used by institutions. Process indicators are, above all, a way of resource use by universities to achieve the objectives pursued by the organization. Output indicators, on the other hand, relate to educational and scientific achievements of an institution. Examples of commonly used indicators are: the value of research grants, points for publications and scientific achievements, the ratio of teachers to students, expenditures per student, employee, organizational units (Cave, Kogan & Hanney, 1990; Fielden & Abercromby, 2000, p. 7; Spee & Bormanns, 1992, p. 143; Van Damme, 2004, pp. 125-157).

Using a similar set of performance indicators allows to observe changes over time and comparison between organizations, making it an effective method of controlling. However, their formulation is not easy because of the diversity of educational institutions and the difficult access to information. Problematic is also an abuse of indicators (Ball & Wilkinson, 1994, pp. 417-427). As Elton Lewis writes ironically, "a performance indicator becomes all that is easily measurable." (Elton, 1987, p. 12).

Neoliberal changes conducted in the UK in the eighties of the twentieth century were stimulated and recommended by a central authority (The Development of Higher Education ... 1985; Performance Indicators in Higher Education ... 1991). The founded commission was named after the person in charge of the committee – Jarratt. It produced a report, the purpose of which was to support changes. The report consisted of recommendations for universities to use a number of performance indicators (Jarrat Report 1985).

In the US, in the governance practice a number of performance indicators of education are used, among which the most popular are: the degree of implementation of the demands of the labour market, measure of the value added by education (student relative output to input), return on educational investment, and assessment of the quality of education (Reindl & Reyna, 2011, p. 7).

Sample list of performance indicators of a university, used in the UK, includes 39 indicators (Johnes & Taylor, 1989).

1. Average cost of educating a student.
2. Average cost of academic employee.
3. Average cost of an administrative employee in relation to academic employee.
4. Average cost of equipping the academic employee.
5. Average revenue per academic employee from research activities.
6. Percentage of doctoral students in relation to the total amount of students.
7. Percentage of second-cycle students in relation to the total amount of students.
8. Percentage of second-cycle and doctoral students in relation to the total amount of students.
9. The ratio of students to academic employees.
10. Expenditure on central administration in relation to the expenditure of the university as a whole.
11. Expenditure on the salaries of central administration in relation to expenditures on central administration.
12. Expenditure on the central administration in relation to the total costs of educating students.
13. Expenditure on the central administration in relation to the total costs of employment.
14. Expenditure on library in relation to the total costs.
15. Expenditure on library in relation to the total costs of educating students.
16. Expenditure on library in relation to the total costs of employment.
17. Expenditure on library in relation to the total costs of academic employees.
18. Expenditure on books per student.
19. Expenditure on journals per student.
20. Expenditure on computers, software and service as a percentage of total costs.
21. Expenditure on computers, software and service as a percentage of total costs of academic employees.
22. Expenditure on computers, software and service per a statistical student.
23. Expenditure on computers, software and service per a statistical employee.
24. Expenditure on buildings and equipment in relation to the total costs.
25. Expenditure on wages related to the servicing of buildings in relation to the costs of buildings.
26. Operating expenses (electricity, water, heating) in relation to the total costs.

27. Expenditure on cleaning and garbage disposal in relation to the total costs.
28. Repair costs in relation to total costs.
29. Phone costs in relation to total costs.
30. Expenditure on buildings per a statistical student.
31. Expenditure on salaries related to buildings per a statistical student.
32. Operating expenses (electricity, water, heating) per a statistical student.
33. Expenditure on cleaning and garbage disposal per a statistical student.
34. Repair costs per a statistical student.
35. Phone costs per a statistical student.
36. Expenditure on career office and career guidance pre a statistical student.
37. Expenditure on self-government and student associations per a statistical student.
38. Employment of a graduate after 6 months after graduation (Elton, 1987, p. 12).

CONCLUSIONS

Accountability systems are used for surveillance over universities, mainly by institutions co-financing functioning of universities, such as: State, local authorities, third sector organizations. However, opinions on the effectiveness of these systems and funding policy based on the measurement of performance are not unanimous. Thomas Rabovsky?, based on data collected in Postsecondary Education Data System indicates that they contribute to the financial restructuring of universities in a small way and, to a lesser extent, they are used in management (Rabovsky, 2012).

Accountability has also negative aspects, which include mainly the erosion of a culture of trust and bureaucratisation. In 2002, Onora O'Neill posed questions about the negative aspects of accountability, and in particular the decline of public confidence entrusted to the universities and professional group of academics (O'Neill, 2002; Sułkowski, 2016).

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Historical and Theoretical Framework of the Relation between Higher Education Institutions and the Process of Regional Economic Development

Alexandru Cristian Fotea, Corneliu Guțu

ABSTRACT

Objective: The objective of the paper is to investigate the evolution in the relationship between higher education institutions (HEIs) and their surrounding environment and the analysis how higher education can increase the economic competitiveness of regional and national economies.

Research Design & Methods: Review of literature that illustrates the evolution of the relation between higher education institutions and its surroundings.

Findings: In the context of a contemporary global "knowledge economy", higher education institutions contribute to the economic competitiveness of regions and nations by performing quality higher education and innovation activities.

Implications & Recommendations: Both theoretical literature and practical evidence show that the relationship between higher education institutions and the surrounding economies have helped each other become more competitive. More than ever, regions and nations must foster and invest in the most important institutions that provide higher education and innovation, which in turn increase the competitiveness level.

Contribution & Value Added: The originality of this work lies in displaying the historical evolution of higher education in relation to its surrounding environment and the comparative analysis of the two competitivity pillars – higher education and innovation – in Eastern Europe.

Article type:	conceptual paper
Keywords:	higher education institutions; regional economic development; socio-economic impact
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INTRODUCTION

The contribution of higher education institutions (HEIs) to economic development in general, and to regional economic development, in particular, has been the subject of a vast international literature over the past decades (De Meulemeester & Rochat, 1995; Shaw & Allison, 1999; Goldstein & Renault, 2004; Brewer & Brewer, 2010). Complementary or separately from subjects like human capital, technological innovation or the transfer of fundamental and applied research results, the contribution of higher education institutions to economic growth and development started to preoccupy the minds of economists, sociologists, historians etc. approximately three decades ago (Elliott, Levin & Meisel, 1988). The constant structural changes experienced by the global society and national economies - the growing influence of total factor productivity within the sources of economic growth in Western countries, the great importance attributed to non-material actives within business organizations and the increasing education level of the labor force - have intensified and extended the interest of specialists studying the role of research and education institutions within this process (Färe et al., 1994). Two or three decades ago the link between higher education institutions and economy was rather tangential or subsequent to already acknowledged fields in applied economic research rather than a self-subsisting preoccupation. Some economists, especially Fritz Machlup (1962) and Peter Drucker (1995), stressed the idea of knowledge as a production factor. Today, independent researchers from university departments all over the world, as well as various groups of specialists at international organizations (World Bank, UNESCO, OECD etc.) invest time and intellectual energy in analyzing - theoretically and empirically - the contribution of the "knowledge" factor to economic growth, and implicitly the role of higher education institutions as the most important institutions that produce "intellectual values"(Wach, 2015).

But of course, the role of universities and other higher education institutions is not limited just to the production of "scientific knowledge", used in the disembodied technical progress (neoclassical theory, exogenous theory, cf. Solow, 1957; Jorgenson & Griliches, 1967) and embodied technical progress (endogenous theory, cf. Romer, 1994; Crafts, 1996). To a great extent, the functions of higher education institutions contribute to the development of the institutional framework, facilitating the efficient redistribution of resources and thus, raising their productivity. This is why the study of connections between higher education institutions and economics cannot be included in just one specialized field such as "economics of education", "economics of knowledge", "economics of technology" or "economics of science" but is rather interdisciplinary. The tendencies of the international academic environment (e.g. the massification of education and research, the growing involvement of business in academic applied research, the acceleration of technological transfer from universities to the business environment etc.), combined with major economic changes that have occurred over the past decades (e.g. globalization process, development and expansion of high-tech industries etc.) generated a much larger and important role for universities and higher education institutions within the competitiveness of nations and regions (Arbo & Benneworth, 2007).

The main objectives of our research are: (1) to illustrate the evolution of HEI and the way in which the process of regional economic development relates to this evolution; (2) to emphasize the role played by the HEIs in shaping the policies and theories of economic

development at regional and national levels; (3) to argue that HEIs have a significant socio-economic contribution to regional development process by analyzing higher education and innovation pillars in four different Eastern European countries.

MATERIAL AND METHODS

The investigation of scientific literature is approached from an interdisciplinary perspective (economics, history, sociology). The research is based on both the theoretical investigation of the existing literature related to higher education and its contribution to sustainable economic development, but also on the empirical investigation in order to capture and understand the way in which higher education institutions in some Eastern European countries contribute to increasing the country's competitiveness level. To illustrate the relationship between higher education and economic development we use documentary analysis technique and specific methods like analogy, comparison, argument selection etc. The sources of documentation are represented by books, jurnals, article, reports and other specific sources. For the empirical part we will rely on the methods and instruments of quantitative analysis, using statistics, data and information collected from public institutions and higher education institutions in the countries belonging to this region, but also from special country or regional reports and bulletins from international organisations.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Regional Dimension of the Evolution of Higher Education Institutions

The genesis of higher education lies in the centuries V-III B.C, in the ancient Athens and Rome. It is precisely in this period when the notion of *higher education* was born. Indeed, the prototype of the modern university is a philosophy school opened in Constantinopole in 425 (Varvoglis, 2014). Subsequently the role of the proponent education was taken by the Catholic Church. Cathedrals and monastic schools in the late medieval Europe, have been transformed into new study centres, known as *Studium Generale*, and became the craddle for modern universities. In these places, respected researchers also conducted teaching activities, thus attracting people who wanted to study law, medicine or theology (Pedersen, 1997). The word *university* derives from the Latin *Universitas Magistrorum et Scholarum* which describes, as explained by Sir John Henry Newman, "a school of knowledge of every kind, consisting of teachers and learners from every quarter" (Newman, 1917, p. 5) whose main essence was academic debate and the exchange of thoughts and ideas.

The first institutions to be named as universities were the University of Bologna and University of Paris, founded respectively in 1088 and 1150. These two establishments encouraged and inspired other societies and academic circles, thus leading to creation of – among many others – University of Oxford, University of Cambridge, University of Salamanca, University of Heidelberg – which, by the end of 15th century expanded all over Europe. In such form of organization, the European model of University is perceived together with the Roman-Catholic Church, as the oldest and continuous institution in the Western World. As Kerr argues, "they have experienced wars, revolutions, depressions and industrial transformations, and have come out less changed than almost any other

segment of their societies" (Kerr 1980, p. 9). He also indicates that many universities founded at this period "are still in the same locations with some of the same buildings, with professors and students doing much of the same thing and with a governance carried on much in the same way"(Kerr 1982, p. 119).

The fascinating history of higher education institutions reveals values and principles that have survived the great test of evolution (Fotea, 2014). How have these institutions managed to evolve from the medieval universities to the modern "mega-universities" of our time, maintaining at the same time institutional stability, moral principles and cultural diversity? Maybe the secret of this success is the specific relation of these institutions with its surrounding environment? If yes, which have been the changes that both sides of this transforming process have experienced? These are the main questions that drive the analysis of the importance of regional dimension of higher education institutions.

The Birth of Modern University and The Expansion of Higher Education

Early European universities were born in a time of unprecedented expansion of trade and commerce accompanied by a dynamic growth of science. This intellectual revival was associated with the rediscovery of Greek and Roman-Greek cultural heritage, when Western European towns and cities were experiencing an accelerated process of growth and development. As Bender rightly indicates, "this introduced a new order and freedom" (Bender, 1988, p. 3) bringing a fresh breath of air into the medieval society. These activities have led to both positive and negative outcomes. On one hand the universities succeeded in attracting talented people, injected new ideas, enriched the cultural life and strengthened the local economy. On the other, the complexity of the newly-born intellectual life and the intensified interaction of individuals with very different educational and moral backgrounds has led to many conflicts both at regional and national levels (Fotea, 2014).

The end of18th century was a difficult period for universities. They were perceived as institutions unable to adjust to the central or regional administration's new vision of territorial planning dominated by the emergence of new industrialized economies and an accelerated process of urbanization (Gascoigne, 2002). The positive change in this regard occurred only after the French Revolution. From this moment, government efforts to reorganise the administration and curricula of universities have started a process of irreversible change, improving the efficiency of universities and the whole system of higher education. Out of all the reorganization attempts, the Humboldtian reforms adopted by the Humboldt University in Berlin in 1810, were the most successful, serving as model not only for European universities, but also for the ones in United States and Japan (Sauerland, 2007).

This new idea of university involved the promotion of the cultivation of man, and the gradual formation of its character through liberal education which involved the search for knowledge, freedom of learning and teaching, but also an institutional infrastructure that would support these mechanisms. This new organization of knowledge led to the birth of research universities and technical research institutes in the second half of the 19th century, just to name the Massachusetts Institute of Technology (1861) as an example (Layton, 1971). This new higher education institutions aimed at reconciling higher education and scientific research. Thus, the exploration and discovery of the world was not left to "amateurs" in contexts and institutions less academic, but became the duty of "professionals" with an academic background. Universities become prestigious institutions of

higher education and research, promoting modern science, based on rationality, empirical observation and experimental methods (Fotea, 2014). Moreover, they have put much effort in forging long-lasting relations with the surrounding environment. For Bender, the birth of research university becomes a "denial of place" (Bender 1988, p.8). This happens because once the knowledge and science becomes universal, available to all humankind regardless of time and space, the activity of universities transcends the traditional boundaries of its location.

In the very same period – the second part of the 19th century – private companies become interested in cooperation with universities. Big chemical and electric companies, like Bayer or General Electric, inaugurated their own laboratories and research facilities, increasing the demand and expanding the labor market for engineers, technicians and researchers. Initially, the collaboration between universities and the private sector was usually informal, mainly through teachers who received financial and logistic support in their research activities, while the companies secured a constant supply of well-trained graduates and received valuable consultancy services. Subsequently, in the beginning of the 20th century many industrialized countries inaugurated many research institutes with technical and industrial profile, both public and private (Hughes, 1987). In spite of these transformations, the end of the 19th century and the beginning of the 20th century has validated universities as top research institutions. Then, after 1960, an unprecedent boom of higher education was recorded. The number of students, academic and administrative staff alongside the funds allocated to higher education development increased substantially (Kwieck,2006).

The Role of Higher Education Institutions in Technological Development Policies

The rising in importance of both higher education and the research activity has positive and negative aspects. The obvious benefits are the increasing expenditures – both public and private – on universities and research centers. Yet, this expansion and diversification process of higher education and research is followed by increased expectations of the society. The taxpayers and politicians expect to receive even higher returns of investment in this sector (Green & Gilbert, 1995). Even though the first attempts to formulate a coherent research policy dates back to World War I, it was only after the World War II that this project came into being. Both of the World Wars have shown how significant is the impact of carefully designed and supported scientific and engineering policy. Consequently, after 1945, the policy makers elaborated and introduced coherent scientific policies in the Western World. Gibbons et al. describe three stages of the postbelic economic development process to which, as we will point out, higher education has contributed substantially (Gibbons at al., 1994).

The first stage stems from the "Science The Endless Frontier" Report handed to the American President Francklin D. Roosevelt by Vannevar Bush, the Director of the Office of Scientific Research and Development (OSRD) of the US Federal Government. (*Science The Endless Frontier* Report, 1945). This document called for a more consistent financing of scientific research by the US administration. The main idea behind the report was a claim that knowledge is based on a law of nature and thus can be created and discovered through carefully planned scientific research that should be conducted by professional specialists. At the same time, promoting and applying knowledge for practical purposes could bring a set of benefits for the society, contributing to a more vigorous economy,

a more efficient national security and ultimately, to a higher standard of living. In essence, the main objective of the aforementioned document was to increase the capabilities for a more intense research and development process (Fotea, 2014).

According to Gibbons at al. (1994), the second stage of post-war development starts with the introduction of policies that are exploiting research to attain various important national goals. In the first stage, national security, nuclear energy, aeronautics and medicine were the areas that were attracting most of the funding for research. However, in the second stage those sectors were already heavily criticized. Their relevance and gains to civil society was put in question. It was claimed that research funded by public funds should bring major benefits to a larger segment of the national economy and to solve important social problems. The competitively and the rate of growth of national economy, the social issues related living standards and the surrounding environment were considered essential issues that needed to be solved with the help of science (Nelson, 1959). Under these circumstances, the results soon started to appear. Western government's efforts focused more on applied research, and also on the dissemination and implementation of scientific research. These new requirements in research agenda attributed the higher education institutions a central role within the national research systems. Consequently, the universities became the cornerstone in terms of research, expertise, instrumentation and education.

The oil crisis (1973) and subsequent period of economic recession in the West which lasted for almost the entire 1970's had profound implications for research policy and universities in particular. The funds for research have been greatly reduced and have been redirected to save the industries affected by the recession (Carpentier, 2006). It was a period characterized by selective interventions in the industrial sector and new attempts to redefine science and technological policies. The poor economic performance rested on the constant decrease of the technological innovation rate. Consolidating the technological pillars and creating high added value products and services were considered by the United States as top prorities objectives in their attempt to regain their industrial competitiveness, especially in a time when Japan was aiming at the global economic supremacy (Ikenberry, 1986).

The third development stage has been triggered in 1980's by what Roobeeck named "a race for the technological development between the industrialized countries" (Roobeeck, 1990, p. 4). The main characteristic of this epoch was an intense attention devoted to advanced knowledge, high-tech and innovation and to a more efficient and constructive cooperation between science and technology. A new wave of strategic research and technological development programmes focusing on the information technology, biotechnology and other specific fields that could bring national competitive advantage, were launched in this decade. This efforts were visible not only in the US or Japan, but also in Western Europe. For instance, the European Community launched the first, out of eight subsequent programmes for research and technological development, designed to stimulate and support research in the common European space, in 1984. The goal of these programmes was to promote technology transfer, the creation of common research spaces and the intensification of mobilities programmes across the continent. This context attributed higher education institutions a new regional dimension. While national research

institutes were few and mostly centralized, the new implemented educational policy developed a decentralized network of higher education institutions, with stimulating role in regional innovation (Fotea, 2014).

Role of Higher Education Institutions within the Theories and Policies of Regional Development

In the second part of 19th century, the transition from agriculture to industrial society generated significant demographic, economic and social changes. Social protection, territorial planning and development of transport infrastructure were among the new objectives assumed by national governments. First attempts to create a regional development policy go back to the period between the World War I and World War II. One of the most well-known regional policy was the "New Deal" Program initiated by the American president Francklin Roosevelt which was implemented between 1933-1936. The Program launched a new series of economic measures that aimed at reducing unemployment, raising the living standards and stimulating new reforms in various sectors of the economy such as agriculture, industry and banking (Schlesinger, 2003). Between 1929-1933, similar measures were implemented in other countries affected by the Great Depression. Under these circumstances, special attention was given to the territorial planning process, which was designed to stimulate economic development and create new jobs in the areas most affected by the crisis. Even though these plans were postponed by the World War II, the process continued and expanded after the war as part of more larger and complex modernization policies. As a consequence, we can consider institutionalizing the regional development policies is mostly a post-war phenomenon.

Some authors (North, 1994; Williamson, 2008; Broadberry & Gupta, 2006) consider that these circumstances are not new. Uneven economic development both at country and regional level has been a permanent an undeniable reality over the course of time. Developed regions, with a strong and dynamic economy, low unemployment rates and high standard of living and underdeveloped regions, where the poor economies and failed development attempts had always co-existed throughout history. Still, what were the core elements that urged the creation of new regional development policies? How the higher education institutions contributed to this process?

Higher Education Institution – Source of Knowledge and Innovation

During an unstable economic and political context, higher education institutions made an impact within the regional policies starting with the 1980s. Although they had long played a role in political consultancy, it was then that research was being perceived as a new and valuable source of innovation and realignment. Taking advantage of this fortunate context, many higher education institutions patented their inventions and established technology transfer offices. It was a period characterized by a strong cooperation between knowledge institutions and the commercial and industrial sector.. To consolidate this partnership, some functions were systematically expanded and a series of common research programs were developed. Moreover, massive investments in small and medium companies were made, in order to help them efficiently and use the new knowledge and technology to increase their absorbance capacity and to develop their habit of using the services provided by the higher education institutions.

The new ideas related to innovation influenced the regional policies of the '90's decisively. The policy was defined as an innovation policy, in which innovation was perceived as a system. In the beginning, following the globalization effects, the new concept of innovation system was linked rather to national innovation system than the regional ones. Freeman thinks that the starting point was the attempt to understand the characteristics of the Japanese growth model (Freeman, 1987). In Lundvall's opinion, not before long it was concluded that each country created an innovation system based both on a specific model of industrial specialization and on particular characteristics related to the research and education system, financial system and labour market regulations (Lundvall, 1992). At the time, globalization was seen as a complex process which was minimizing the role and authority of national borders, with companies succeeding in leaving the previous obligations and relations behind and local and regional systems were disintegrating. This process took place at different levels, involving the simultaneous development of various strategies and initiatives. Robertson's concept of "glocalization" launched the idea that globalization will be accompanied by a process of regionalization (Robertson, 1992). Regions will gradually become important spaces of innovation. The creation of a regional economic development policy was based on this interpretation.

Theoretical Framework of The Regional Development Policies

The creation and implementation of regional development policies was based on two main approaches: the classical approach (Solow, 1956) and the endogenous approach (Lucas, 1988).

The classic approach used various theories such as the theory of economic base, new trade theory (Andrews, 1953), theory of growth poles (Krugman, 1992), center-periphery model (Prebish, 1949), theory of production cycles (King, Plosser & Rebelo, 1988), theory of flexible production (Paul & Jonathan, 1991) or the theory of learning regions (Cook & Schienstock, 2000) in order to emphasize the importance of regional innovation, giving birth to many controversies regarding the way in which a relevant regional borderline can be drawn. In practice, the solution to this problem was determined by establishing predefined political and administrative borders. In this context two theories proved to be helpful: theory of industrial clusters and the theory of regional innovation systems. Due to the political recognition that these two theories benefited, gave higher education institutions, as the main research and education institutions, a special status.

Michael Porter's theory defines industrial clusters as being geographical agglomerations which gather firms that are interconnected with related industries, specialized supplier and associated institutions (Porter, 2001, p. 7). The theory emphasizes competitiveness and captures the complexity of the value added generating activities that link together different levels of production in such way that each level produces value added to the whole process. In order to explain the connections between industry and business environment, as well as the rivalry and cooperation between companies to raise the standard of the cluster under the pressure of innovating, collaborating and exchanging knowledge, Porter created his famous diamond. The popularity of the regional innovation system concept is closely related to the creation of regional clusters, but also to regional innovation policies. The region was started to be considered the most appropriate level at which knowledge and innovation based economies can develop. The new concept was born in a time when regional policies were systematically promoting the localization of learning

processes in order to increase the competitive advantage of regions. The reason behind the development of specific political measures within the regional innovation systems was the increase in the capacity and performance of local companies and the improvement of the business environment. Once these coordinates are established, Cooke points out the importance of promoting the interactions between various innovative actors such as companies, universities and research centers (Cooke, 2001). From this point on, the role of knowledge institutions is clearly defined. Knowledge and its carriers together with the communication channels and the mechanisms of learning and disseminating knowledge become essential.

In the last decade of the 20th century the new approach of alternative economic development was born. It emphasized the importance of social development and human capital increase, as well as the role of the local communities in the process of regional development (Lucas, 1988; Romer, 1994). The new vision represented a response to the classic regional development theories and to the hypothesis that only technological progress alone was enough to explain economic growth, as ulterior research were going to prove. Therefore, the endogenous approach represents also an attempt to correct the classic theories by bringing forward models that regard long term effects of growth as endogenous variables of the model. Economic growth has an endogenous feature related either to a competitive accumulation of capital or to a massive investment in human capital and an information exchange between companies. As a consequence, the production of knowledge, innovation and the learning process based on exchange of knowledge between companies, communities and regions became essential components of regional and national governmental policies. Nevertheless, endogenous development is not associated with a precise spatial scale. Therefore it cannot be considered a synonym for local development. One of the main characteristics of endogenous development is economic growth based on the creation, development and use of internal resources at every spatial level: local, regional, national and global. Regions and cities with an intense productive sector are the ones creating fortunate conditions for innovation and knowledge flow between organizations, stimulating the labour force learning process within the same industrial sector. Such a mechanism of knowledge dissemination and innovative ideas circulation inside a city or a region acts like a "shield" that protects local industry from external competitors.

What is the role of higher education institutions within this endogenous approach of regional economic development? The new vision stresses the idea of an intense competition which transcends the regional or national space, encompassing the whole global stage. The markets become more dynamic, generating a larger adaptability and flexibility capacity. The evolution of new economy produces a greater influence of the information technology not only on the technical infrastructure, but also on services. These features are propelled at local and regional level throughout qualified labor force, public administration, research institutes and business organization. Within this process, research and education have a decisive role, which offers higher education institutions a privileged status (Glomm & Ravikumar, 1992).

Contribution of Higher Education Institutions to (Regional) Economic Development: Insights from Central and Eastern European Countries

The concept of "knowledge-based economy" fully acknowledges the crucial role that knowledge plays in the process of economic development. Recent theories, especially the new theory of endogenous growth, place knowledge, incorporated in human capital and technological capital (innovation), at the base of the economic growth process. Huggins et al. define the knowledge base of an economy as "the capacity to create and innovate ideas, thoughts and products and to transform them to economic development, that is to increase the value of regional economies and to generate prosperity" (Huggins et al., 2008, p. 322). Knowledge is considered a key factor in achieving competitiveness not only for production units, but also for territories (regions), which are more and more regarded as economic entities within which knowledge brings competitive advantage. Even though there are various opinions related to the positive effects of knowledge within the process of economic development, one of the consequences that everyone agrees with, both in theory and in practice, is that higher education institutions, due to their teaching and research activities are the most important sources of modern production, dissemination and transfer of knowledge in the surrounding environment.

In an attempt to assess global competitiveness, World Economic Forum has issued over the last years, under the coordination of Professor Schwab, *The Global Competitiveness Report* (Schwab, 2011, 2012, 2013, 2014). Regarded as an important tool by policymakers in many countries, GCR clearly illustrates the important contribution that higher education institutions have to economic sustainability and development. Each year, the GCR measures the 12 pillars that drive competitiveness and growth in a country. Out of these 12 pillars, 2 pillars - higher education and training and innovation – rely on the education and research activities performed by higher education institutions. As the GCR explains, quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products. In particular, today's globalizing economy requires countries to nurture pools of well-educated workers who are able to perform complex tasks and adapt rapidly to their changing environment and the evolving needs of the production system. (Schwab, 2014, p. 7). In the long run, standards of living can be largely enhanced by technological innovation. Technological breakthroughs have been at the basis of many of the productivity gains that our economies have historically experienced. Innovation is particularly important for economies as they approach the frontiers of knowledge, and the possibility of generating more value by merely integrating and adapting exogenous technologies tends to disappear. Although less-advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, for those that have reached the innovation stage of development this is no longer sufficient for increasing productivity. Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge and move toward even higher value-added activities. This progression requires an environment that is conducive to innovative activity and supported by both the public and the private sectors. In particular, it means sufficient investment in research and development (R&D), especially by the private sector; the presence of high-quality scientific research institutions that can generate the basic knowledge needed to

build the new technologies; extensive collaboration in research and technological developments between higher education institutions and industry. In the light of the recent sluggish recovery and rising fiscal pressures faced by advanced economies, it is important that public and private sectors resist pressures to cut back on the R&D spending that will be so critical for sustainable growth into the future. (Schwab, 2014, p.8).

In order to clearly point out the contribution of higher education institutions to the economic development and sustainability we will take a look at the two pillars -higher education and training and innovation – in four Central and Eastern European countries: Moldova, Romania, Poland and the Czech Republic. Each of the countries selected is placed in different stages of economic development as shown in Table 1.

Table 1. GCR ranking and score evolution of Moldova, Romania, Poland and the Czech Republic between 2011-2015

Country/Stage of economic development	GCR 2011-2012 Rank/Score	GCR 2012–2013 Rank/Score	GCR 2013–2014 Rank/Score	GCR 2014–2015 Rank/Score
Moldova (1-2)	93 (3.9)	87 (3.9)	89 (3.9)	82 (4.0)
Romania (2)	77 (4.1)	78 (4.1)	76 (4.1)	59 (4.3)
Poland (2-3)	41 (4.5)	41 (4.5)	41 (4.5)	43 (4.5)
Czech Republic (3)	38 (4.5)	39 (4.5)	46 (4.4)	37 (4.5)

Source: Schwab 2011, 2012, 2013, 2014.

As shown in Table 1, Moldova, in transition from the factor driven to efficiency driven economy (1-2) is the lowest ranked European country and, implicitly Eastern European country in the GCR, improving its overall score with just a 0.1 over the last four years. Among the four countries, Romania, an efficiency driven economy (2) had the best improvement score of 0.2 over the last years, which enabled it to climb 18 positions from 77th place in 2011-2012 to 59th in 2014-2015. Poland, a country in transition from

Table 2. Higher education and training pillar between 2011-2015 in Moldova

5th pillar: Higher education and training	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Secondary education enrolment, gross (%)	69 (88.1)	74 (88.0)	77 (87.7)	75 (88.2)
Tertiary education enrolment, gross (%)	62 (38.3)	66 (38.1)	66 (39.4)	69 (40.1)
Quality of the education system	102 (3.2)	103 (3.2)	115 (3.0)	103 (3.2)
Quality of math and science education	69 (4.0)	64 (4.1)	74 (4.1)	80 (4.0)
Quality of management schools	124 (3.3)	121 (3.3)	133 (3.2)	125 (3.2)
Internet access in schools	63 (4.3)	61 (4.4)	56 (4.6)	49 (4.9)
Availability of research and training services	101 (3.5)	114 (3.4)	128 (3.3)	119 (3.3)
Extent of staff training	118 (3.3)	122 (3.2)	126 (3.2)	120 (3.4)

Source: Schwab (2011, 2012, 2013,2014).

efficiency driven to innovation driven economy (2-3) and the Czech Republic, an innovation driven economy (3) have had a relative constant score over this period.

If we analyze the *higher education and training* pillar in the four countries we will notice Moldova (40.1%) and Romania (51.6%) have the lowest tertiary education enrolment compared to Poland (73.2%) and to the Czech Republic (64.2%).

Moldova has by far the lowest score in terms of quality of the education system, math and science education, management schools, availability of research training services and extent of staff training (see Table 2).

Table 3. Higher education and training pillar between 2011-2015 in Romania

5th pillar: Higher education and training	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Secondary education enrolment, gross (%)	56 (91.6)	42 (97.2)	46 (97.2)	57 (95.0)
Tertiary education enrolment, gross (%)	23 (65.6)	39 (58.8)	39 (58.8)	53 (51.6)
Quality of the education system	90 (3.3)	108 (3.1)	99 (3.3)	61 (3.8)
Quality of math and science education	45 (4.5)	55 (4.2)	57 (4.3)	31 (4.7)
Quality of management schools	92 (3.8)	112 (3.5)	104 (3.7)	74 (4.2)
Internet access in schools	58 (4.4)	64 (4.3)	60 (4.5)	53 (4.8)
Availability of research and training services	112 (3.3)	112 (3.5)	91 (3.9)	68 (4.2)
Extent of staff training	79 (3.8)	111 (3.4)	134 (3.1)	111 (3.6)

Source: Schwab (2011, 2012, 2013, 2014).

Table 4. Higher education and training pillar between 2011-2015 in Poland

5th pillar: Higher education and training	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Secondary education enrolment, gross (%)	28 (99.6)	45 (97.0)	48 (97.0)	45 (97.7)
Tertiary education enrolment, gross (%)	19 (69.4)	21 (70.5)	19 (72.4)	23 (73.2)
Quality of the education system	71 (3.7)	68 (3.7)	87 (3.4)	79 (3.6)
Quality of math and science education	52 (4.3)	59 (4.1)	69 (4.1)	50 (4.4)
Quality of management schools	78 (4.0)	85 (4.0)	89 (4.0)	84 (4.0)
Internet access in schools	48 (4.7)	53 (4.5)	55 (4.6)	50 (4.9)
Availability of research and training services	27 (5.0)	30 (4.8)	33 (4.8)	31 (4.8)
Extent of staff training	55 (4.1)	59 (4.0)	75 (4.0)	72 (4.0)

Source: Schwab (2011, 2012, 2013, 2014).

The Czech Republic has the highest score in terms of availability of research and training services, extent of staff training and quality of management schools (see Table 5), while Romania has made significant progress in the quality of the education system and quality of math and science education over the last four years (see Table 3).

Table 5. Higher education and training pillar between 2011-2015 in the Czech Republic

5th pillar: Higher education and training	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Secondary education enrolment, gross (%)	46 (94.9)	63 (90.4)	66 (90,8)	49 (96.6)
Tertiary education enrolment, gross (%)	34 (58.3)	32 (60.7)	29 (64.9)	32 (64.2)
Quality of the education system	49 (4.1)	59 (3.9)	67 (3.7)	77 (3.6)
Quality of math and science education	66 (4.1)	78 (3.8)	83 (4.0)	74 (.4.1)
Quality of management schools	82 (4.0)	95 (3.8)	90 (4.0)	68 (4.3)
Internet access in schools	21 (5.8)	21 (5.8)	24 (5.8)	27 (5.8)
Availability of research and training services	20 (5.2)	23 (5.1)	26 (5.0)	27 (4.9)
Extent of staff training	39 (4.3)	48 (4.2)	68 (4.0)	55 (4.1)

Source: Schwab 2011, 2012, 2013, 2014.

Countries like the Czech Republic and Poland, with a greater score in higher education and training benefit from higher levels of human capital. This is because on one hand, higher education institutions not only increase the level of human capital following the education process, but they also have a positive impact on the degree of using the human capital available. Higher educated and trained graduates have a higher activity and occupation rate, but also a lower unemployment rate compared to individuals with inferior levels of education, which proves that human capital generated in higher

Table 6. Innovation pillar between 2011-2015 in Moldova

12th pillar: Innovation	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Capacity for innovation	107 (2.6)	122 (2.5)	134 (2.7)	128 (3.0)
Quality of scientific research institutions	122 (2.7)	131 (2.4)	132 (2.6)	121 (2.7)
Company spending on R&D	137 (2.1)	140 (2.1)	142 (2.1)	135 (2.3)
University-industry collaboration in R&D	124 (2.7)	124 (2.8)	129 (2.7)	124 (2.7)
Gov't procurement of advanced tech products	132 (2.6)	136 (2.6)	139 (2.5)	127 (2.7)
Availability of scientists and engineers	122 (3.3)	131 (3.2)	131(3.1)	128 (3.1)
PCT patents, applications/million population	90 (0.0)	69 (0.7)	81 (0.4)	73 (0.8)

Source: Schwab (2011, 2012, 2013, 2014).

education institutions has a greater probability of being available on the labor market and a higher chance of being used in productive ways. So, higher education and training not only increases the individual cognitive and intellectual level, but has a greater impact on the regional or national labour market. The human capital generated in higher education institutions raises the occupation rate and the activity rate of its graduates, providing them with a higher sectorial and geographical mobility due to the skills and competences acquired during the academic years. The contribution of higher education institutions to the increase of human capital has a double value. First, because it develops it and secondly, because it increases the probability of its productive use, with positive effects on the economic development of its surrounding environment.

If we take a look at the Innovation pillar (see Table 9), we can see that the Czech Republic has the biggest innovation capacity with score of 4.6, followed by Poland (3.8) and Romania (3.7). Even though it has improved its score in the last four years, Moldova still has one of the lowest innovation capacity in the ranking (128th position) with a score of 3.0 (see Table 6).

In terms of the quality of its scientific research institutions Romania has made a significant improvement over the last four years, from a score of 3.2 to 4.0, advancing 36 places in the GCR (see Table 7). The Czech Republic has the best scientific research institutions with a score of 4.5 (see Table 9), while Moldova has not improved the quality of its scientific research institutions over the last four years (see Table 6).

Table 7. Innovation pillar between 2011-2015 in Romania

12th pillar: Innovation	GCI 2011-2012	GCI 2012-2013	GCI 2013-2014	GCR 2014-2015
Capacity for innovation	78 (2.9)	77 (3.1)	90 (3.4)	68 (3.7)
Quality of scientific research institutions	91 (3.2)	84 (3.4)	64 (3.7)	55 (4.0)
Company spending on R&D	87 (2.9)	87 (2.9)	104 (2.8)	65 (3.1)
University-industry collaboration in R&D	115 (3.0)	113 (3.1)	88 (3.3)	71 (3.6)
Gov't procurement of advanced tech products	111 (3.1)	114 (3.1)	99 (3.2)	75 (3.4)
Availability of scientists and engineers	59 (4.2)	82 (3.8)	99 (3.6)	72 (4.0)
PCT patents, applications/million population	62 (0.8)	56 (1.9)	55 (2.0)	56 (2.2)

Source: Schwab (2011, 2012, 2013, 2014).

As an innovation driven economy, the Czech Republic has the best score in terms of company spending on R&D, university-industry collaboration, availability of scientists and engineers and in PCT patents and applications (see Table 9). Moldova has the lowest stores and over the last years in Moldova, the collaboration between universities and industry in R&D sector has not made any improvements (see Table 6).

Romania has made an important progress by improving company spending on R&D, university-industry collaboration in R&D, government procurement of advanced tech

products and PCT patents and applications. (see Table 7), while the only real improvement that Poland has made from 2011 to 2015 is to raise its innovation capacity and the number of PCT patents and applications (see Table 8).

Table 8. Innovation pillar between 2011-2015 in Poland

12th pillar: Innovation	GCI 2011-2012	GCI 2012-2013	GCI 2013-2014	GCI 2014-2015
Capacity for innovation	49 (3.3)	54 (3.3)	62 (3.6)	67 (3.8)
Quality of scientific research institutions	44 (4.1)	45 (4.1)	55 (4.0)	63 (3.9)
Company spending on R&D	80 (2.9)	88 (2.9)	103 (2.8)	98 (2.8)
University-industry collaboration in R&D	65 (3.6)	67 (3.6)	72 (3.5)	73 (3.5)
Gov't procurement of advanced tech products	100 (3.3)	101 (3.2)	103 (3.1)	89 (3.2)
Availability of scientists and engineers	67 (4.1)	58 (4.2)	66 (4.2)	62 (4.2)
PCT patents, applications/million population	56 (1.0)	43 (5.8)	40 (6.9)	40 (7.1)

Source: Schwab (2011, 2012, 2013, 2014).

Table 9. Innovation pillar between 2011-2015 in the Czech Republic

12th pillar: Innovation	GCR 2011-2012	GCR 2012-2013	GCR 2013-2014	GCR 2014-2015
Capacity for innovation	25 (4.0)	22 (4.1)	26 (4.3)	28 (4.6)
Quality of scientific research institutions	26 (4.8)	26 (4.9)	26 (4.9)	36 (4.5)
Company spending on R&D	28 (3.9)	28 (3.9)	32 (3.8)	31 (3.7)
University-industry collaboration in R&D	30 (4.5)	28 (4.5)	32 (4.4)	42 (4.0)
Gov't procurement of advanced tech products	81 (3.5)	122(2.9)	124 (2.8)	107 (3.0)
Availability of scientists and engineers	42 (4.5)	43 (4.5)	64 (4.2)	55 (4.2)
PCT patents, applications/million population	33 (7.1)	28 (18.4)	29 (15.3)	30 (15.8)

Source: Schwab (2011, 2012, 2013, 2014).

The current context of the "knowledge society", in which higher education institutions transfer knowledge to the surrounding environment, contributing to the technological development and providing practical solutions for the economic agents and for society reflects their role of entrepreneurial institutions. As shown above, higher education institutions have the capacity to stimulate entrepreneurial activities both directly, following their own initiatives and actions as well as indirectly, by supporting and facilitating an innovative environment for socio-economic entrepreneurs. Moreover, following its academic education, its graduates can develop entrepreneurial activities.

CONCLUSIONS

History holds evidence that HEIs and their surrounding environment have been interacting and influencing each other for more than nine centuries with great mutual benefits. Due to their inexhaustible resources, large scale influence and their social, cultural and economic involvement, higher education institutions have played a decisive role in the development of our societies. Accelerated socio-economic transformations, especially in the last decades, often encompassed in concepts like “knowledge society” or “knowledge-based economy” point out the great importance of knowledge in the process of economic growth and development. As the most important institutions involved in the production, dissemination and transfer of knowledge, higher education institutions play a vital role within this process. The economic mechanisms that they develop regionally, following their interaction with the surrounding environment can represent “engines” of economic development.

Even though HEIs are one of key elements that can drive the economic competitiveness of a territory, we must not forget there are numerous other factors to which they relate and, in a larger or smaller proportion, depend on. Institutions, infrastructure, macroeconomic environment, health and education level of the population, market size, efficiency of the goods, labour and financial markets, technological readiness and business sophistication are all major pillars on which the economic competitiveness of a country or region also relies (Schwab, 2011, 2012, 2013, 2014). In order to fully assess and understand the contribution of HEIs to economic competitiveness and development, future research should also determine and understand the way in which HEIs interact with each of this factors. The different political and socio-economic context of Moldova, the lowest ranked country and the Czech Republic, the best ranked country in our analysis prove the strong interdependency between the above mentioned factors. Moldova has been experiencing tremendous political and socio-economic unrest over the last year. Unstable macroeconomic environment, highly corrupt institutions, poor infrastructure, low percentage of foreign investments, high unemployment rate and not always assured property rights have all had a negative impact on the civil society, forcing the young population to leave the country. These circumstances have also influenced the trajectory of higher education institutions, blocking their development over the past years and jeopardizing its future evolution. At the opposite side, a stable political and socio-economic environment where private property is guaranteed, along with highly developed infrastructure, functional labour and financial markets and low unemployment rate have enabled the Czech Republic to build a strong political and socio-economic basis on which higher education institutions can perform steady and healthy long term progress.

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The Role of the Polish Higher Education System in the Development of Entrepreneurship

Hanna Nowak

ABSTRACT

Objective: The objective of this paper is to present the perceived impact of entrepreneurship education in Poland from different points of view (e.g. of national experts and students), as well as to discuss the role of the higher education system in entrepreneurship development.

Research Design & Methods: The method partly consists of the analysis of selected secondary data (Eurobarometer survey and GEM project). Additionally, an explorative study was carried out among the students of an entrepreneurship course offered by the Faculty of Management at the Poznań University of Economics and Business.

Findings: Formal education does not seem to play a major role in the development of entrepreneurship among young people in Poland; however, it begins to improve when the tertiary level of education is taken into consideration. Additionally, the fragmentation of studies makes it difficult to measure and ascertain the total impact of the higher education system on entrepreneurship development.

Implications & Recommendations: More effort should be made to evaluate the real impact of the educational activities proposed by the academic community on the entrepreneurship of young people. The role of the formal education system, especially at the tertiary level, is underestimated, and has great potential to influence the entrepreneurial attitudes and behaviour of students and graduates.

Contribution & Value Added: The contribution of this work is to propose a more comprehensive framework for studying the role of the higher education system in the development of entrepreneurship in Poland.

Article type:	research paper
Keywords:	economic education, entrepreneurship; education; entrepreneurial development; institutional environment; universities
JEL codes:	A22, A23

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INTRODUCTION

Thus far, the well-known question "Are entrepreneurs born or made?" does not seem to have received an unambiguous response from the scientific community. Some researchers suggest the importance of an "entrepreneur gene", and others indicate the role of education in entrepreneurship development (Daley, 2013). Looking at European policies, strong support for the other approach can be clearly seen. The Entrepreneurship Action Plan adopted by the European Commission aims to promote a favourable environment for entrepreneurial activity in Europe, as well as the teaching skills essential in the entrepreneurial process (Florea & Florea, 2013). Entrepreneurial activity is supposed to be one of the crucial factors stimulating economic growth, competitiveness and new jobs creation (European Commission 2012; Sautet, 2013, p. 389). For this reason, the institutional environment of entrepreneurship, composed of both formal and informal institutions, is going to be changed through political initiatives. The educational systems of EU countries form part of that institutional environment, and due to this will be expected to follow European guidelines and to incorporate entrepreneurship education at different levels in their educational policies. However, as the European Union plays only a supportive role in this area of competence, the policy of education, including entrepreneurship education, depends on the real activities undertaken by the authorities of the Member States (Wach, 2014, p. 23). The extent of these actions varies across countries, and for many of them it is still regarded as a real challenge. There is no consistent framework for entrepreneurship education, and so far the discussion among researchers about the aims and results of such education is still ongoing.

The literature review confirms the increasing interest of scholars in the development of an entrepreneurial mindset and entrepreneurial skills through dedicated entrepreneurship programmes. The studies conducted in this field are normally oriented to certain specific characteristics of the phenomena (e.g. entrepreneurial intentions), and are presented from a particular point of view. There are not many attempts to give a broader perspective which contains a range of different perceptions and values attributed to entrepreneurship education, and more globally, to the higher education system as a whole.

The aim of the paper is to present the perceived impact of entrepreneurship education in Poland from different points of view (e.g. of national experts and students), especially at the tertiary school level, as well as to discuss the role of the higher education system in entrepreneurship development. The article is organised as follows: in the next section the main study streams regarding entrepreneurship education, especially at the higher education level, as well as the limitations and shortcomings of the investigations carried out in this field are reviewed. In the third section of the article, the material and methods are presented, which partly consists of the analysis of selected secondary data (e.g. Eurobarometer survey and the Global Entrepreneurship Monitor (GEM) project). Additionally, the method consists of an explorative quantitative study carried out among the students of an entrepreneurship course offered by the Faculty of Management at the Poznań University of Economics and Business. The data collected on the basis of a questionnaire, as well as the data from secondary sources are descriptively presented and discussed in section four of the article. Finally, the conclusions and limitations of the

study as well as the implications for future studies are outlined in the last part of the article.

LITERATURE REVIEW AND THEORY DEVELOPMENT

The idea of promoting entrepreneurship at schools and universities is becoming more and more popular in recent years. Among different areas of formation, specific courses in what is called "entrepreneurship education" are being developed, at different degrees of studies and not only in the typical field of economic studies (Płaziak & Rachwał, 2014).

Before concentrating on entrepreneurship education as a particular type of formation, a short overview of the general relationships between educational systems, entrepreneurial activities and a knowledge-based economy should be given (Figure 1). The central factor in this "chain" is knowledge, which is created by and accumulated in the institutional environment. The role of schools and universities is supposed to be the transmission of knowledge, the formation of students' skills and attitudes, as well as enabling them to use the knowledge and skills in a productive way to support social and economic development and growth. One of the forms of knowledge application are students creating and developing their own companies.

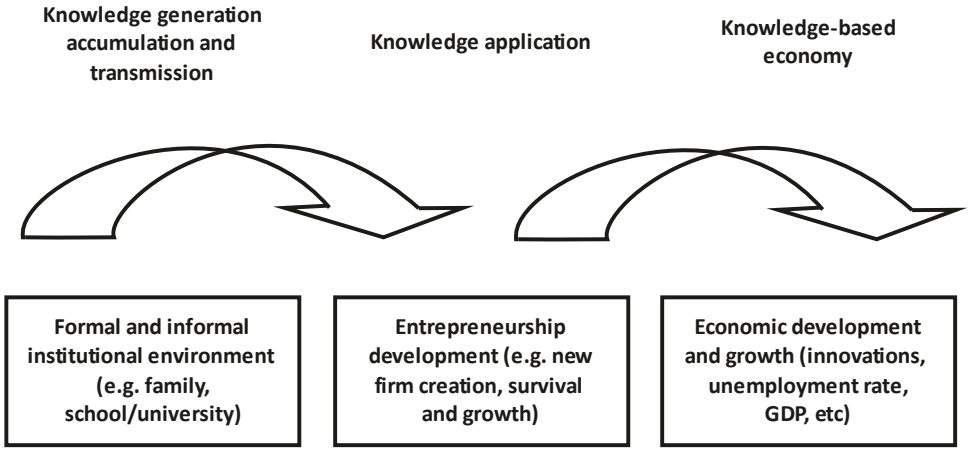

Figure 1. Knowledge as a key factor in economic growth and development
Source: own elaboration.

A review of the literature on education, entrepreneurship and economic growth permits the identification of the different areas in which education influences the socio-economic situation of a country, through enabling individuals to perform entrepreneurial activities (Mars & Rios-Aguilar, 2010; Smith & Bagchi-Sen, 2012; Sautet, 2013). In Table 1 some important research topics regarding the relationships between formal education, entrepreneurial development and economic growth are presented. First of all, the evolving role of universities in society is highlighted by many authors. On the one hand, the role of the university in human capital development is emphasised, and on the other hand, its new mission, viewed as the transmission of knowledge from universities to enterprises, is considered (Audretsch, 2014; Carree *et al.,* 2014; Leyden & Link, 2013).

A significant stream of research concentrates on the effectiveness of entrepreneurship education, as well as its impact on entrepreneurial intentions, behaviour and rates of entrepreneurship (Rauch & Hulsink, 2015, Jiménez *et al.,* 2015). Finally, entrepreneurship is perceived as a mechanism to transform economic knowledge into economic growth (e.g. Carlsson *et al.,* 2009).

Factors relating to education, such as work experience and training which have an influence on human capital, have been claimed to play an important role in the success of entrepreneurs (Paltasingh, 2012) or the survival of a company (Nowak, 2013). Also for this reason, initiatives connected with entrepreneurship education have arisen around the world in recent years.

Table 1. Research topics regarding the relationships between education, entrepreneurship and economic growth

Main topic/concept; Conclusions/findings	Author(s)
The evolving role of the university in society: the emergence of the "entrepreneurial university" and the "university for the entrepreneurial society".	Audretsch (2014)
The problem of effectiveness of entrepreneurship education; findings: positive impact on attitudes, higher entrepreneurial intentions and entrepreneurial behaviour.	Rauch & Hulsink (2015)
The impact of formal education on entrepreneurship rates; findings: positive effect of tertiary education on formal entrepreneurship and negative impact on informal entrepreneurship.	Jiménez *et al.* (2015)
Entrepreneurship as a "mechanism" which helps to "convert economic knowledge into economic growth"; distinction between "general knowledge" and "economically useful knowledge".	Carlsson *et al.* (2009)
Knowledge Spillover Theory of Entrepreneurship; "the transmission of knowledge to business enterprises" being the role of universities.	Leyden & Link (2013)
Entrepreneurship as a "mechanism" to "transform academic knowledge into economic growth"; the "third mission" of the university: "research collaborations with the private sector".	Carree *et al.* (2014)

Source: own compilation based on a literature review.

In both literature and practice different approaches to entrepreneurship education can be identified. Many authors distinguish between education "about" and "for" entrepreneurship. The first one looks at entrepreneurship as a phenomenon and describes its characteristics and importance for society and the economy. The other type of entrepreneurship education aims at fostering those skills that are useful in the process of company creation and development (Duval-Couetil, 2013; Fretschner & Weber, 2013). According to Kwong *et al*. (2012), if we consider the two components of entrepreneurship as "science" and "art", university entrepreneurship education can support the first by delivering knowledge and skills, rather than improving innovation and the creativity of the students (Kwong *et al.,* 2012). Among the advantages of entrepreneurship courses offered by universities, values such as trust, networking, and social capital building can be mentioned (Gordon *et al.,* 2012).

There are also some sceptical voices that doubt whether entrepreneurship education can really exert any positive effects on entrepreneurial behaviour. One of the most important principles which should be taken into account in the construction of entrepre-

neurship education programmes is the assumption that entrepreneurs really learn by experience, so university staff who design such programmes need to know and understand "entrepreneurial learning mechanisms" (Gordon *et al.,* 2012).

Entrepreneurship education as a scientific and educational field is facing a certain number of limitations defined by Fayolle (2013, pp. 697-698), such as the following:

- the fragmentation of studies which creates difficulties in the accumulation of knowledge,
- the general lack of legitimacy for the field and, related to this, marginalisation in the best entrepreneurship journals,
- the lack of research based on theory (theory-driven research),
- the lack of a critical and reflexive approach in studies and education,
- the lack of experienced entrepreneurship educators with good qualifications.

The state of development in this field differs across EU countries and depends on the institutional solutions adopted by the policy makers. One of the most important questions concerns the outcomes of the methods used for the promotion of an entrepreneurial mindset through the formal education system. The effects of entrepreneurship education can be noticed many years after graduation from universities (Brush, 2013), and it is rather difficult to measure the total impact of educational policy on the entrepreneurial activities of the members of society. On the one hand, the creation of new companies is only one of the possible outcomes of participating in different kinds of entrepreneurial formation; and on the other hand, the decision about starting a business is determined by many factors, not only educational.

Gull and Fayolle (2015) point out that, in general, there is a lack of investigations which explore the perceptions and values attributed by students to entrepreneurship education in terms of developing their entrepreneurial skills. If we take into consideration the new member states of the European Union and other transition countries, knowledge about the status of entrepreneurship education in their higher education institutions is still limited (Varblane & Mets, 2010). In the particular case of Polish students it was observed by Jones *et al.* (2008) that participation in a course about starting a new enterprise had a positive effect on their attitudes and perceptions towards entrepreneurship, understood as the creation of one's own company after graduating. The study concentrated mainly on the future entrepreneurial intentions of Polish students, but they also found the content of the course and the learning experience useful (Jones *et al.,* 2008). According to Wach (2015) family entrepreneurial experiences also have an impact on the entrepreneurial intentions of Polish students.

It can be argued that the literature about the effectiveness of entrepreneurship education is limited (Jones *et al.,* 2008), and there is a need for improved knowledge about students' perceptions regarding the effects and value of entrepreneurship education, and about the general impact of the higher education system on the entrepreneurial activities of a society. The article intends to give a more general view as to the role of the Polish educational system in entrepreneurship development by providing different points of view, as well as making a small contribution to a better understanding of how students perceive the impact of formal educational programmes on their entrepreneurial development in comparison to other factors (e.g. family environment).

MATERIAL AND METHODS

To meet the main objective of the study, complementary sources of information were used. At the beginning, the secondary data was gathered and analysed in order to explore the findings from different internationally recognized investigations, and to obtain a more general view regarding the impact of the educational system on entrepreneurship development in Poland. For this purpose, the structure of responses given by Polish respondents in the Eurobarometer survey ("Entrepreneurship in the EU and beyond"), requested by the European Commission, was presented. Moreover, the average grades given by national experts of the Global Entrepreneurship Monitor (GEM) project in Poland, regarding the quality of the institutional environment for entrepreneurial activities, were analysed in comparison to other European countries.

The second part of the study consists of the primary data analysis, based on a research questionnaire developed by the author, to investigate the situation from the students' perspective. This study has an exploratory character and was conducted on a small group of students (n=18) from the Poznań University of Economics and Business in the initial phase of the Entrepreneurship in Small and Medium-sized Enterprises specialisation (first year of master's degree programme) in the academic year 2014/2015. As they were at the beginning of their entrepreneurship course, their opinions referred partially to their past experiences with formal education in Poland. Most of them were 22 or 23 years old and came from the Wielkopolska region. The questionnaire was based on the 5-point Likert scale, as well as close-ended questions ("yes", "no", "don't remember"). The students were asked to evaluate the impact of different aspects of formal education on their entrepreneurial abilities, as well as to indicate the main sources of their entrepreneurial competences. The data was analysed using descriptive statistics.

On the basis of a literature review and the previous studies of the author, the following hypotheses were formulated:

H1: The role of the formal education system in entrepreneurship development, especially at the tertiary level, is underestimated due to the lack of a comprehensive framework for investigation.

H2: The general evaluation of the role of formal education in Poland in entrepreneurship development improves when the tertiary level of education is taken into account.

RESULTS AND DISCUSSION

Poland is one of the countries which have incorporated entrepreneurship into the national framework of education (Pietrzykowski, 2011); however, entrepreneurship as an educational field is still at the development stage. An important problem governing the generation of research as well as programmes "about" and "for" entrepreneurship at universities is still the marginalisation of this area as a scientific and academic field and insufficient legitimacy in the scientific community (MIiR-OECD 2013; Kurczewska, 2013). In spite of this, many new initiatives have appeared in recent years, such as courses and master's degrees related to entrepreneurship and company creation; departments of

entrepreneurship and innovation at universities; incubators; programmes for coaching young entrepreneurs; awards for the best business ideas of students; etc. On the other hand, the community of researchers who are interested in entrepreneurship and entrepreneurship education has started to consolidate and its members share their experiences and achievements. It can be concluded that the situation in Poland regarding the promotion of entrepreneurship among students and graduates is getting better, but there is still a lot of work to do (Pietrzykowski, 2011). Another problem is the percentage of students who have ever participated in any kind of entrepreneurial programme or course, and the collection of data reflecting the number of firms created by them in the future.

Eurobarometer Survey

The results of a survey requested by the European Commission and conducted among EU countries permit the perceived impact of formal educational systems on the entrepreneurial behaviour of the citizens to be evaluated. The data below presents the answers of the Polish respondents (Table 2).

Only 30% of the Polish respondents have ever taken part in activities related to the development of their own business project during classes at schools or universities. Also, one third of the respondents agreed with the statement that school education inspired them to be an entrepreneur. More than 40% of the respondents in Poland agreed that formal education enabled them to run a business by giving them necessary skills and knowledge (43%) and helping them to gain an entrepreneurial attitude and initiative (45%). Half of the Polish respondents claimed that school education helped them to understand the role of entrepreneurship in society.

Table 2. Structure of responses by Polish citizens in the Eurobarometer survey in 2012

Question/statement	Yes or total "agree" (in %)	No or total "disagree" (in %)	Don't know (do not read out) (in %)
"At school or university, have you ever taken part in any course or activity about entrepreneurship – that is turning ideas into action, developing your own projects?"	30	69	1
"My school education is helping/has helped me to develop my sense of initiative and a sort of entrepreneurial attitude"	45	53	2
"My school education is helping/has helped me to better understand the role of entrepreneurs in society"	50	47	3
"My school education is making/has made me interested in becoming an entrepreneur"	33	64	3
"My school education is giving/has given me skills and know-how to enable me to run a business"	43	55	2

Source: European Commission (2012).

The data for all EU countries confirms that positive answers to the questions in the

Eurobarometer survey were most frequently given by young people between 15-24 (34% of them have participated in a course or activity about entrepreneurship). Only 9% of the respondents who finished their education under fifteen, and 19% of those who finished education between sixteen and nineteen, have participated in such courses. People who spent more time at schools and universities, or who have not graduated yet, gave positive answer more frequently (31% of those who finished their education in their twenties and 35% of those who were still studying) (European Commission 2012). As a general rule, the youngest respondents and people with higher education degrees tended to agree more frequently with the statements in Table 2.

Entrepreneurship education in Poland has not been obligatory so far, and, according to the Eurobarometer survey, the majority of Polish citizens have not participated in any courses "about" or "for" entrepreneurship during their school education.

Young people who completed their studies in recent years or those who are still studying are in a better situation – the number of entrepreneurship courses and initiatives at the tertiary level is constantly growing, and access to this kind of formation is improving.

National Experts' Perspective

Systems of education as part of the institutional environment of entrepreneurship are evaluated in the international Global Entrepreneurship Monitor project (GEM). Among others, the GEM project aims at answering the questions: "How does entrepreneurship contribute to economic development?" and "What drives entrepreneurship in different contexts?" (Levie *et al.,* 2014, p. 437). The data for Poland in comparison to other selected EU countries is presented below (Table 3).

The selected EU countries which in 2013 participated in the Global Entrepreneurship Monitor project have been grouped by the author into three categories according to geographical location; and the averages of national expert grades have been calculated for those three categories of countries (for each component 1-12; see Figure 2):

- **average I** is calculated for Central and Eastern European countries: Poland, the Czech Republic, Slovakia, Hungary, Lithuania, Latvia and Estonia,
- **average II** is calculated for Western European countries: Germany, France, Spain, Italy and the United Kingdom,
- **average III** is calculated for Scandinavian countries: Finland and Sweden.

Most of the institutional framework components for entrepreneurship are evaluated at a medium level, despite the physical infrastructure receiving good grades from the GEM national experts in the three groups of selected EU countries.

If we take into consideration the educational conditions (entrepreneurship education), the situation in Western as well as Central and Eastern European countries is rather unsatisfactory, especially at the basic school level. In comparison to Scandinavian countries, important discrepancies can be noticed; however, at the post-secondary school level the perceived conditions tend to be better. In the case of Poland the average national expert grade is less than 2 (1.8) for the primary and secondary school levels, and is below the average of the first group of the selected EU countries (2.4 compared to 2.8) for the post-secondary level (Table 3).

Table 3. Institutional framework for entrepreneurship in selected EU countries in 2013 (average of GEM national expert grades; from 1 – poor to 5 – very good)

Country	Elements of institutional framework											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Czech Republic	2.5	2.0	2.0	2.3	1.6	2.4	2.2	3.1	2.6	2.6	4.0	2.0
Estonia	2.7	2.5	3.1	3.3	2.3	3.0	2.9	3.0	3.6	2.5	4.3	3.5
Lithuania	2.8	2.4	2.0	2.6	2.4	2.8	2.4	3.5	4.0	2.5	4.2	3.0
Poland	2.7	2.6	2.1	2.7	1.8	2.4	2.1	3.0	3.8	2.8	3.6	2.8
Latvia	2.9	2.9	3.0	3.0	2.7	3.3	2.4	3.4	2.6	3.0	4.1	3.1
Slovakia	2.2	1.9	1.9	2.2	1.9	2.8	1.9	2.8	3.0	2.5	3.9	1.9
Hungary	2.8	2.3	1.9	2.3	1.9	2.8	2.5	3.4	3.1	2.7	3.9	2.6
Average I	**2.7**	**2.4**	**2.3**	**2.6**	**2.1**	**2.8**	**2.3**	**3.2**	**3.2**	**2.7**	**4.0**	**2.7**
United Kingdom	2.7	3.0	2.6	2.7	2.2	2.6	2.5	3.1	2.8	2.7	3.9	3.1
France	2.9	3.3	3.0	3.2	1.7	2.7	2.5	3.0	3.2	2.4	4.2	2.2
Germany	2.8	2.6	2.6	3.4	1.9	2.6	2.8	3.3	3.2	2.8	3.7	2.8
Italy	2.5	2.0	1.5	2.1	1.7	2.6	2.5	3.1	3.5	2.5	3.3	2.1
Spain	1.8	2.3	2.0	3.1	1.4	2.3	2.2	2.5	2.1	2.3	3.9	2.1
Average II	**2.5**	**2.6**	**2.3**	**2.9**	**1.8**	**2.6**	**2.5**	**3.0**	**3.0**	**2.5**	**3.8**	**2.5**
Sweden	2.3	2.7	2.5	2.7	2.3	2.4	2.4	3.0	3.4	2.6	4.2	3.2
Finland	2.8	3.3	3.1	2.9	2.7	2.9	3.0	3.5	2.8	2.9	4.3	2.9
Average III	**2.6**	**3.0**	**2.8**	**2.8**	**2.5**	**2.7**	**2.7**	**3.3**	**3.1**	**2.8**	**4.3**	**3.1**

Notes: 1. Entrepreneurial Finance; 2. Entrepreneurship as a relevant economic issue; 3. Taxes or regulations are either size-neutral or encourage new SMEs; 4. Government entrepreneurship programmes; **5. Entrepreneurship education at the basic school level (primary and secondary)**; **6. Entrepreneurship education at the post-secondary levels (higher education such as vocational, college, business schools, etc.)**; 7. R&D transfer; 8. Commercial and legal infrastructure; 9. Entry regulation. Market dynamics: the level of change in markets from year to year; 10. Entry regulation. Market openness: the extent to which new firms are free to enter the existing markets; 11. Physical infrastructure; 12. Cultural and social norms.
Source: adapted from (Amorós & Bosma 2014, pp. 45-47).

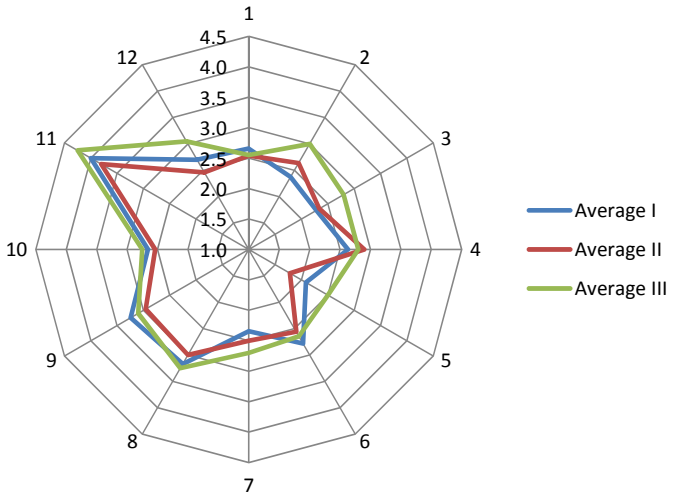

Figure 2. Averages grades of GEM national experts in three groups of EU countries in 2013
Notes: as for Table 3.
Source: own elaboration based on: (Amorós & Bosma 2014, pp. 45-47).

Students' Perspective

The results of an explorative study based on a questionnaire carried out among students of tertiary schools and universities in Poznań[1] show that most of them either agree or rather agree with the statement that the creation and development of one's own company is a prestigious activity in Polish society (72.5% of the total number of responses, *n*=211). The entrepreneurial intentions of students were more frequently expressed by those who studied Management (specialisations: Entrepreneurship in Small and Medium-sized Enterprises; Business Management). In the students' opinions, formal educational factors had less of an influence on the development of their entrepreneurial competences than, for example, family models and values gained in childhood. In the ranking of the most frequently indicated factors influencing entrepreneurial competences, the educational ones were placed in the lowest positions; however the frequency of responses increased along with the level of formal school education (Nowak 2014a, pp. 53-56; see Table 5).

Another explorative study by the author based on the same questionnaire was carried out in the academic year 2014/2015 on a sample of students from the Poznań University of Economics and Business who study at the Faculty of Administration with the specialisation "Entrepreneurship in Small and Medium-sized Enterprises" (first year master's degree studies, *n*=18). The results of the survey are summarised in Tables 4 and 5. Opinions about entrepreneurship education at the tertiary level are disparate and should be treated with a degree of caution, as nascent entrepreneurs can have different needs than those who have actually started to run their own business. Many students see the necessity for changes in the system of education in terms of entrepreneurial competences. The most frequent postulates are the following (see also Nowak, 2014b, p. 73):

- more practical activities and using the cases of real companies,
- inviting real entrepreneurs to participate in classes at the university,
- practical activities in companies (work experience),
- formal aspects of running a business (registration, bookkeeping, taxes, European funds, etc.)

The data presented in Table 5 reflect the great influence of family on students' entrepreneurial competences. The impact of formal educational factors, in the opinions of the students, is marginal; however, the situation is better if we consider the tertiary levels of education. The findings generally confirm the results of the studies carried out by the author in the academic years 2012/2013 and 2013/2014 on a larger group of students with different profiles at the Poznań University of Economics and Business and other non-economic universities in Poznań (*n*=211).

The results of the exploratory studies on the group of students from Poznań suggest great importance of family models (entrepreneurs in the family) in the development of entrepreneurial competences among the students. This is in line with the findings of

[1]The survey was carried out by the author in the academic years 2012/2013 and 2013/2014 within the project financed by funds from the Ministry of Science and Higher Education for PhD students and young researchers; the aim of which was to identify the determinants of entrepreneurial attitudes among students, especially at the Poznań University of Economics and Business in fields such as Management, Finance and Accounting, and Social Policy; but also at some non-economic tertiary schools.

Wach (2015), which show that experiences of entrepreneurship in the family have a positive influence on students' attitudes towards entrepreneurial initiatives, entrepreneurial risk and the important role of entrepreneurs in society. Formal education does not seem to play a major role in the development of entrepreneurship among young people in Poland.

Table 4. Students' intentions and attitudes towards entrepreneurship and entrepreneurship education (*n*=18)

Question	Yes (in %)	No (in %)	Don't know (do not read out) (in %)
1. Do you think you are an entrepreneurial person?	72.2	5.6	22.2
2. Do you plan to start running your own company in the future?	94.4	5.6	0.0
Statement	**Total yes or rather "agree" (in %)**	**Total no or rather "disagree" (in %)**	**Neutral (in %)**
3. The creation and development of one's own company is a prestigious activity in Polish society	66.6	16.7	16.7
4. The courses taught during university studies (transmitted knowledge and methods) help you to develop your entrepreneurial competences	38.9	33.3	27.8
5. During your university studies you gain the knowledge and abilities needed in the process of creating and developing your own company	16.7	27.8	55.5
6. Do you see any necessity for changes in the system of education in terms of entrepreneurial competences?	77.8	0.0	22.2

Source: own study.

The evaluation of the methods used during university studies and the perceived value of the knowledge transmitted for the development of entrepreneurial competences in the investigated group of students (*n*=18) was rather disparate. However, nearly 40% of the students strongly agreed or rather agreed with the statement 4 (Table 4). According to the answers of that group of students, the situation was more unfavourable with regard to the perceived value of the knowledge and abilities for the process of creating and developing their own companies (only 16.7% of the students strongly or rather agreed, and most of them gave a neutral response). On the basis of these results, it should be investigated whether the educational system in general does not respond adequately to the students' needs, or if nascent entrepreneurs have different requirements and expectations than actual entrepreneurs. The above results are in line with the findings of Gull and Fayolle (2015), who indicated that students of colleges of technology in Punjab were generally not satisfied with the effect of education on their entrepreneurial skills, and they suggest the development of new content as well as training courses for teachers to enhance the use of more entrepreneurial methods (Gull & Fayolle, 2015).

Table 5. Frequency of responses for factors determining the entrepreneurial competences of students (n=18) in comparison to the previous study by the author (*n*=211)

Factors	Number of responses (multiple choice)	
	Academic year 2014/2015 (*n*=18)	Academic years 2012/2013 and 2013/2014 (*n*=211)
Character and values gained in childhood	5	110
Family models (entrepreneurship in the family)	11	91
Imitating entrepreneurial people/entrepreneurs who have succeeded	9	83
Self-development (newspapers, books, the Internet)	11	81
An example of an entrepreneur in the near environment	5	65
Cultural models (traditions, social norms, etc.)	1	58
Additional courses and formation	4	28
Attitudes and models of behaviour learnt at tertiary level school or university	**5**	**44**
Attitudes and models of behaviour learnt at secondary school	**1**	**22**
Attitudes and models of behaviour learnt at primary school	**0**	**6**

Source: own study.

The above results do not confirm the positive impact of formal education on Polish students' intentions and entrepreneurial skills as clearly as was the case in the study by Jones et al. (2008). However, the findings of the present study refer rather to the general role of education, also including past experiences, and do not concentrate on the specific content or methods used during the entrepreneurial course offered at the Poznań University of Economics and Business. To explore the situation more fully, a new, more extensive study should be designed.

After the analysis of the results, the hypotheses of the present study were confirmed.

Broader Perspective Proposal

The data presented in the article reflects the evaluations taken from different perspectives; e.g. students and national experts. The impact of the educational system on entrepreneurship development should, however, be analysed by adopting a broader perspective.

First of all, the impact of education, whether formal or informal, on personal abilities, knowledge and creativity ought to be mentioned. Personal development depends on the cultural norms of society, the influence of family and friends, as well as on the general rules of the formal educational system at the primary, secondary and tertiary school levels (Table 6). The various educational experiences of individuals during their lives shape their capacity to undertake different activities in the future, especially those

relating to future employment. From this perspective, the educational environment plays an important role in the decision to create new companies by people from different educational backgrounds.

Table 6. Areas and character of educational environment influences on entrepreneurial activities

Elements of educational environment	**Character of impact** on entrepreneurial activities	
	formal/informal	**direct/indirect**
Social rules and perceptions towards entrepreneurship, family relationships and traditions	informal	indirect or direct
Level of formal education (primary, secondary, university graduates), general knowledge acquisition and personal development	formal	indirect
Specialist knowledge acquisition and formal qualifications (diplomas, certificates, etc.)	formal	indirect or direct
Transfer and commercialisation of knowledge and technology (academic entrepreneurship, creation of spin-off and spin-out companies)	formal	direct
University infrastructure (technological parks and incubators)	formal	direct
Other forms of cooperation between universities and companies e.g. in the field of innovativeness	formal or informal	direct
Entrepreneurship education programmes within the education system/public policy (courses about entrepreneurship and for developing entrepreneurship)	formal	direct or indirect
Courses financed from public funds (European, national, regional), offered by different institutions to develop those abilities and knowledge relating to company creation	formal	direct

Source: own elaboration.

The influence of the educational factors mentioned above on entrepreneurship development is somewhat indirect, and because of this it is not easy to measure their impact on graduates undertaking entrepreneurial activities. When trying to evaluate this, various indicators could be taken into consideration, for example: the rates of youth unemployment; the rates of unemployment among university graduates; the rates of unemployment among those with higher education degrees; entrepreneurial intentions of students/graduates; the motivation of students/graduates to create own company; students' opinions about formal education (surveys, in depth interviews, etc.); the number of entrepreneurship courses at universities; the number of students who attend entrepreneurship courses at universities; the number of participants in entrepreneurship courses co-financed from public funds.

To evaluate any direct impact on entrepreneurial development by those educational institutions which form part of the institutional environment, other indicators could be adopted; for example: the number of newly created or existing companies established by students; the number of newly created or existing companies established by university graduates; the number of newly created or existing companies established by people

with higher education degrees, based on specific qualifications and certificates; the number of spin-off/spin-out companies; the number of companies located in university technological parks or incubators; the percentage of firms which declare collaboration with universities; the number of firms created in programmes financed from public funds (European, national, regional) in collaboration with universities.

CONCLUSIONS

The impact of the higher education system on entrepreneurship development is not limited to effects such as the creation of new companies by students and graduates. Poland belongs to a group of countries with a high number of students, in absolute and relative terms (Sedlak & Sedlak, 2013), so the transmission of entrepreneurial values through the formal educational system could have a significant effect on the development of entrepreneurship (Paltasingh, 2012) and building a knowledge-based economy.

Moreover, evaluating the impact of the formal education system should not be limited only to entrepreneurship education, which helps to develop the specific entrepreneurial skills needed in the process of company creation. Also, the general and specialist knowledge acquired at schools and universities, as well as networking and trust building, are seen as factors which can determine the success and survival of companies.

The results of the evaluation by GEM experts still reflect the rather poor or average opinion about entrepreneurship education as a component of the institutional environment for entrepreneurship development. In particular, more attention should be given to the quality of entrepreneurship education at the primary and secondary levels.

The evaluation by students of entrepreneurship education at the tertiary level presented in this article cannot be generalised. This small sample exploratory study can be treated as a kind of pilot study, which in the future could be developed by using more rigorous and sophisticated methods of analysis and by investigating a larger sample of students. Moreover, a study based on the same questionnaire could be carried out at the end of the entrepreneurship course among the same group of students in order to show the changes and evolution of the students' perceptions of formal education at the higher school level (Jones *et al.,* 2008).

The situation in Poland in this field is constantly changing and more should be done to recognize the real impact of the formal education system on entrepreneurship development. The role of the formal education system, especially at the tertiary level, is probably underestimated, and has great potential to influence the entrepreneurial attitudes and behaviour of students and graduates. For that reason, a more comprehensive framework for studying the role of the higher education system in the development of entrepreneurship in Poland should be considered in the future studies.

Future studies could explore more deeply not only entrepreneurial intentions, but also the special needs of prospective young entrepreneurs; which can be addressed through using new tools and methods during entrepreneurship courses, as well as other lectures and classes not directly dedicated to this issue. It will also be important to investigate how students perceive the value of formal education in general, and of entrepreneurship education in particular, after moving from the nascent entrepreneur phase to the stage of creating their own companies. Finally, to obtain a more global picture as to the impact of the educational system on entrepreneurship development, more factors

should be taken into consideration in future studies (e.g. the number of years of formal education, family educational background, additional university facilities, type of education received (general or specialist knowledge, etc.)).

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Entrepreneurship Education at Secondary Level in Transition Economies: A Case of Poland

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ABSTRACT

Objective: The goal of the paper is to present changes in entrepreneurship education (EE) in Poland at lower and upper-secondary schools after the reform of the education system of 1999 in the light of the national core curriculum (NCC) analysis.

Research Design & Methods: The analysis of the NCC was based on the method and criteria developed in the European research project Fifobi and includes four basic competencies related to the following: economy knowledge, business knowledge, social competences and self-competences associated with entrepreneurial attitudes.

Findings: The analysis of content distribution of the NCC for secondary schools indicates that competencies in the field of economic knowledge prevail, the contents of all entries in this field are based on the obligatory subjects "civics" (lower-secondary) "Basics of Entrepreneurship"["BE"] (upper-secondary). Social and self-competencies are treated quite marginally in the NCC.

Implications & Recommendations: The need to clarify the records of the NCC and modification of the NCC records in terms of entrepreneurship so that a greater emphasis was placed on social and personal competencies, not only the competencies based on economic knowledge.

Contribution & Value Added: The article can contribute to a better understanding of the level and structure of EE in Poland. The research conclusions may serve as guidelines to educational policy, not only in Poland but also in other countries transforming their economies, and to international comparative studies.

Article type: research paper

Keywords: curriculum development; entrepreneurship education (EE); entrepreneurship curriculum; national core curriculum (NCC) transition economies; secondary education

JEL codes: A21, I21, L26, P36, P46

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INTRODUCTION

The main task of entrepreneurship education (EE) is to prepare young people to enter the labour market, as well as to develop a sense of initiative and entrepreneurial skills among them. Therefore, it is important how national education systems adapt to changing skill requirements within a globalised economy, in particular in the post-communist countries which joined the European Union (e.g. Berger et al., 2012; Tracz, 2005; Wach, 2008, 2013, 2014a).

The process of transformation of the national economy in Poland and other Central and Eastern European countries, associated with the transition from the socialist, centrally planned economy to the market economy, occurring under conditions of the processes of globalisation of the world economy and European integration, affects the need for proper preparation of the society to function in an increasingly complex socio-economic reality. This preparation takes place primarily within the education system, through the development of entrepreneurial attitudes at all stages of development of a young person, from the early school stage to higher education institutions.

The role of school education in shaping entrepreneurial attitudes of a person ready to undertake different kinds of challenges in the market economy is all the more important in Poland and other Central and Eastern European countries. This is a consequence of the situation that often education and professional experience of parents of the youth turns out to be insufficient, given the different conditions of the centrally planned economy in which a significant proportion of parents lived for a long time. In this situation it is difficult to transfer experience related to the functioning in a market economy, especially in running an own business. The development of entrepreneurship is considered a particularly important factor of economic growth in the transition countries. In the time of centrally planned economy and at the beginning of the process of economic transformation, EE was limited to specialised schools and higher education institutions at courses in economics. This kind of education within general education for all students in primary and secondary education was virtually non-existent. A student was not prepared to set up or to run his or her own enterprise, to manage the household budget, to know how to invest available financial resources (e.g. on the stock exchange or in investment funds), to open a bank account, or to obtain credit. Students were not prepared for efficient and effective interpersonal communication, including resolving conflicts or leading negotiations, which are the key competencies deciding of a man's competitiveness nowadays. Thus, students (except for graduates of some business schools), were not prepared well to participate in social and economic life, including being professionally active and establishing own businesses (Rachwał, 2005, 2010; Kurek, Rachwał, 2010a,b, 2011).

LITERATURE REVIEW

Changes in EE have been researched into by some scholars from Poland. Particularly, noteworthy are works of Daszkiewicz (2013), Nowak (2014), Rachwał (2004, 2005, 2006), Wach (2008, 2013, 2014a) and Zioło (2012) that attempt to assess the role and position of entrepreneurship in the education system in Poland, including also the analysis in the

context of other European countries (Wach, 2014a; Kurek & Rachwał, 2010a). They highlight a large role of entrepreneurship in education, as well as EE in the socio-economic development, especially economies in transition, such as Poland (see Wach, 2015a). In this regard, Zioło and Rachwal (2012) indicate a deep association between entrepreneurship and geographical research focused on the development processes of spatial systems in different scales (local, regional, national ones). Much of the research is devoted to entrepreneurship at a higher level of education (e.g. Dorocki & Borowiec-Gabryś, 2014; Gaweł, 2014; Pietrzykowski, 2011; Piróg, 2015; Płaziak & Rachwał, 2014); especially the impact of EE on entrepreneurial intentions of students and graduates (Jankowska & Pietrzykowski, 2012; Kilar & Rachwał, 2014; Wach, 2015b; Zbierowski, 2014), which refers to research undertaken in other countries (e.g. Bae et al. 2014; Byabashaija & Katono, 2011; Claar et al., 2012; Fayolle & Gailly, 2015; Koçoğlu & Hassan, 2013; Kuehn, 2008). The authors also undertake studies on such issues as the position, aims and teaching methods of EE in Poland at the lower levels of education (e.g. Borowiec & Rachwał, 2011; Brzozowski, 2014; Rachwał, 2004, 2005, 2006, 2009; Solińska, 2014; Tracz & Rachwal, 2007, 2008; Tracz, 2005, 2006; Wach, 2007). They also stress the importance of the use of modern teaching aids, including multimedia support and ICT tools (Rachwał, Ratajski & Zając, 2012; Soczówka, 2007, Śrutowska, 2006; Szmulczyńska, 2006). Aims and the content of EE in the NCC in Poland were analysed by Rachwał (2004, 2006). This author made also the critical evaluation of program changes in the field of EE (Rachwał, 2009).The analysis of the role of the curriculum changes for education and of the competences of entrepreneurship teachers was conducted by Tracz and Rachwał (2007, 2008). The analysis was supported by the experiment of implementing the EU-funded education project 'Step into Entrepreneurship', whose aim was to design and implement a pilot testing of innovative program for entrepreneurship development in secondary schools in Poland (Rachwał, Ratajski & Zając, 2012). Żur (2014a) addresses the role of inspiration in EE. Various researchers also undertake the surveys of the opinions of students, their parents and teachers on the state of EE in Poland, including the opinions on introducing "Basics of Entrepreneurship" ("BE") as a new school subject to secondary education (Osuch & Osuch, 2006; Osuch, 2012; Tracz, 2015; Ziółkowska-Weiss, 2014). To a lesser extent, the researchers undertake a detailed analysis of the content of education based on the curriculum (the NCC or school curricula), which is the subject of this article. Such studies, limited in scope usually to groups of students from one or few secondary schools, take researchers and entrepreneurship teachers, but rather they relate to the expectations of students in relation to the EE curricula (Sowislok, 2012; Świętek, 2012; Ziółkowska-Weiss, 2014).The findings of the surveys conducted by Ziółkowska-Weiss (2014) and Świętek (2012) show that students positively evaluate the introduction of a new subject "BE" to schools and most of them recognize it as a one of the most important school subjects, useful in adult life. Ziółkowska-Weiss (2014) confirms that students feel that in EE curricula and training programmes too much time is devoted to issues related to the functioning of economy and the economic fundamentals of entrepreneurship, and too little to the development of social and personal entrepreneurial skills.

The issue of EE curriculum and good preparation of young people for life in the new economic reality in schools is of particular interest also in other European countries, not

just those transforming their economies, which also frequently take up the work on reforming education systems in such a way as to encourage the development of business competencies (Canning, Berger & Pilz, 2012; Berger & Pilz, 2012; Figueira, 2012; Gönczöl & Bognár, 2012; Kurek & Rachwał, 2010; Kurek, Rachwał & Szubert, 2012a; McGlynn, Canning & Dolan, 2012; Muzis, Liepins, Roze & Krastins, 2012; Schwarz, 2012). This is due to the fact that entrepreneurship is one of the pillars of the European education system (Commission…, 2006; *Recommendation…,* 2006), as so called key competence (*Key Competencies,* 2002).

MATERIAL AND METHODS

The goal of the article is to present changes in entrepreneurship education (EE) in Poland at lower secondary (gymnasium) and upper secondary (post-gymnasium) schools after the reform of the education system of 1999 in the light of the national core curriculum (NCC) analysis.

The research on the NCC records is mainly based on the criteria of analysis (described in details later in the article) developed within EU-funded international project *Fifobi: Fit for business - developing business competences in school*, conducted in the years 2009-2011 (Kurek & Rachwał, 2010b; Pilz, 2012; Canning, Berger & Pilz, 2012), especially on the results of the analysis of lower-secondary education made by the Polish team (Kurek, Rachwał & Szubert, 2012a). These results of the research on the NCC for gymnasium have been extended to general education (applicable to all students) in secondary schools. The findings from the analysis of the NCC is presented against the background of changes in the position of EE in the education system in Poland after the 1999 reform.

This research is also based on previous analyses of the authors, referring to changes in entrepreneurship education in Poland at various levels of education (e.g. Borowiec & Rachwał, 2011; Kurek & Rachwał, 2010b, 2011; Kurek, Rachwał & Szubert, 2012b; Rachwał, 2004, 2005, 2006, 2009, 2010; Tracz & Rachwał, 2007, 2008; Zioło & Rachwał, 2012).

RESULTS AND DISCUSSION

Entrepreneurship Education in Poland at Secondary Level

In addition to changes of institutional and organisational nature, new goals and teaching contents were introduced in the new education system, according to 1999 reform, within new subjects, such as “Basics of Entrepreneurship” (“BE”) whereas the teaching contents of the remaining subjects, such as Civics or Geography were significantly modernised. In this respect, the introduction of a new obligatory subject “BE” for all students in secondary (post-gymnasium) schools, and changes of the goals and teaching contents of the subject Civics in gymnasium, in which elements of entrepreneurship were included, are particularly noteworthy (Rachwał, 2009). The new core curriculum for gymnasium was applied from the school year 2009/2010 in the first years of gymnasium, whereas in the post-gymnasium school from the school year 2012/2013.

In gymnasium, the contents of entrepreneurship education have been included in the subject of Civics, although, as the experience and earlier research (Kurek, Rachwał

& Szubert, 2012a) show, these contents are marginalised by teachers of that subject. In post-gymnasium schools ending with secondary school final exams there are planned 60 hours of "BE" and 30 hours of an optional subject of Economy in Practice ("EP"; if a student chooses it), whereas, in vocational schools, 60 hours of "BE" without the possibility to conduct that optional subject.

For the Civics subject which is conducted at the lower-secondary educational level (gymnasium), the following groups of entrepreneurship teaching contents are outlined (numbering in accordance with the core curriculum, the remaining items refer to civic education):

24. Work and entrepreneurship.
25. Market economy.
26. Household.
27. Money and banks.
28. National economy.
29. The enterprise and economic activities.
30. School and profession choices.
31. Ethics in economic life.

Also groups of contents partially connected with entrepreneurship:

20. European integration (including EU budget).
21. Poland in the European Union (including the Union funds).
23. Problems of the contemporary world (including economy globalisation).

Whereas groups of contents for the subject "BE" conducted at the upper-secondary educational level (post-gymnasium school) include the following items:

1. The entrepreneurial person.
2. Market – features and functions.
3. Market institutions.
4. State, economy.
5. The enterprise.
6. Labour market.

Group content within the subject "EP" optionally implemented in secondary schools include the following:

1. Project planning of economic character.
2. Analysis of the market.
3. The organisation of the project.
4. Evaluation of the effects of actions.

The analysis of the detailed records of the core curriculum and the distribution of content groups between the two education levels indicate that the scope of contents for gymnasium is too vast in comparison to post-gymnasium school. It appears that with such a limited number of content hours in gymnasium (ca. 20 hours), the problems of conducting economic activities (item 29) as a serious issue demanding a more mature approach, should be transferred from gymnasium to the secondary school level, or the number of hours allotted for the entrepreneurship contents in gymnasium should be increased (Rachwał, 2009).

In response to the needs arising from the institutional reform of the education system and the curriculum reform of EE, as part of this work a concept of teaching a new subject in secondary school, "BE", was developed. As a result, a number of editions of specialist publications appeared on the market, including textbooks for students and teachers in the field of entrepreneurship and a dictionary of "Basics of Entrepreneurship"; most of them were prepared by the stuff of Pedagogical University of Cracow (PUC). Moreover, a draft of the core curriculum of "BE" in the extended version was prepared by the team of PUC and Cracow University of Economics.

Serious shortcomings in the new system of EE are the lack of possibility to implement it on the upper-secondary level in the extended content (with more than the standard number of hours) and taking the maturity exam in this subject, although the accepted model of secondary school in Poland allows students to select a subject from a wide choice (except compulsory courses as Polish language, mathematics and a foreign language). This optional extension of the content of entrepreneurship education would allow to take final upper secondary school exams in "BE" both at the basic and the extended level. This issue drew the attention of many authors (e.g. Bartoń, 2005; Rachwał, 2006, 2009, Tracz & Rachwał, 2008). However, the issue of matriculation exam in entrepreneurship still remains unresolved. It should be noted that their implementation is delayed due to the controversial nature of many technical and organisational difficulties associated with it, in which the opponents of the introduction of exams in this course include:

- a contradiction with the essence of entrepreneurship, which deals more with skills and attitudes rather than knowledge-based economic competencies,
- difficulties in defining the criteria for checking skills,
- a danger of departing from skills training to equipping students with economic knowledge and thus transforming the course into "principles of economics",
- incomparability of the range of requirements with other subjects (too narrow content),
- reducing the attractiveness of the subject for students and their involvement in the classroom, because teachers need to implement the material just for final exams.

It is, however, important to cite arguments of the proponents of the introduction of this exam (Bartoń, 2005), i.e.:

- expanding the catalogue of matriculation subject to choose from for students,
- the possibility of obtaining the certificate of maturity in an economic subject,
- greater opportunity to evaluate the candidates for business schools,
- greater prestige of entrepreneurship in the structure of the school teaching,
- greater involvement of students in the classroom (because of the awareness that the subject is covered by an external test),
- increasing the role of economic education for the society and the popularisation of entrepreneurial attitudes in society.

Therefore, the opinion of Bartoń (2005) must be accepted that – following the experiences of other countries, including many European countries – the subject of "BE" as the only economic subject in general education should be considered as a matriculation subject. In addition, the possibility of carrying out matriculation examination in this sub-

ject in Poland is shown by a successful project 'The Entrepreneurship Contest', which de facto has become such an "external examination", however, giving the possibility of entering economic studies only to the winners), as well as contests and competitions on entrepreneurship organised in many schools and educational institutions in Poland.

Furthermore, the development of information and computer technologies has a major impact on the implementation of the curriculum by teachers from virtually all subjects, especially in "BE" and "EP". As noted by Soczówka (2007), since the introduction of computers into schools in Poland in the 1980s, these devices and their software have become one of the important means of teaching used in such entrepreneurship education. Nowadays, computer programmes and multimedia have become an indispensable part of the learning process. If we want to teach effectively and the learning process to become easy and enjoyable, we should use the form that best reaches the students. Thanks to that, we could arouse their interest in teaching material. Multimedia teach through playing, which supports the teaching-learning process. They expand the cognitive area, facilitate consolidation of the material and help to check the degree of mastery of knowledge. And, most importantly, they are interactive, so the teacher activates the students and motivates them to work (Śrutowska, 2006).

This is confirmed by the opinions of the students themselves, cited on the basis of the research conducted under the auspices of the National Bank of Poland (Narodowy Bank Polski), by Smulczyńska (2006): according to students the increased use of teaching aids, the use of different, attractive and engaging ways of working, enhancing the practical aspect of teaching of the subject and strengthening contacts with institutions and enterprises would increase their satisfaction with participation in basic entrepreneurship lessons. These studies have also shown that teachers and school headmasters appreciate the role of activating methods, including the use of modern technology in educational work, but they often do not apply them because of limited time and technical capabilities. This was confirmed in studies by other authors, but good progress in this regard in Polish schools should be noted as a result of increasing universal access to computers and high-tech audio-visual and electronic teaching tools (Rachwał, Ratajski & Zając, 2012).

Curriculum Analysis in Gymnasium (Lower Secondary School) and General Education in Post-Gymnasium (Upper-Secondary) Schools

In order to determine the content of entrepreneurship education in Poland a detailed analysis of the records of the NCC was carried out. The analysis was based on the criteria developed in the European research project Fifobi (Pilz, 2012) and includes four basic competencies related to the following: economy knowledge (E), business knowledge (B), social competences (SO) and self-competences associated with an entrepreneurial attitude (SE). Detailed criteria include the content shown in the table below (Table 1).

The analysis of Poland's new NCC of general education was based on the regulation of the Ministry of National Education announced on 12 December 2008 (Rozporządzenie… 2009) and implemented in the 2009/2010 school year. Apart from civic education, other relevant courses during which content connected with business education at lower-secondary level is realised include: mathematics and Polish (Kurek, Rachwał & Szubert, 2012).

Table 1. Coding for the curriculum analysis

A. Sub-competencies/criteria in the field of knowledge-based competencies in economics

Criteria of knowledge-based competencies in economics	Code	*Possible* text in the curriculum
Basic principles of economics **Further explanations:** Understanding economics as the study of how society manages its scarce resources; understanding of basic economic phenomena	E1	[…] recognize that an economic order is necessary for the form of social life
The market forces of supply and demand **Further explanations:** Elasticity and its application (how much buyers and sellers respond to changes in market conditions); aggregate demand and aggregate supply (the aggregate-demand curve and the aggregate-supply curve)	E2	[…] understand the functionality of market and be able to reflect the roles of participants in market events
Trade and globalisation **Further explanations:** International trade (the effects of international trade on economic well-being); open-economy macroeconomics and macroeconomic theory of the open economy	E3	[…] know the world-economic interrelationship and be aware of the consequence of globalisation
Actors in the market **Further explanations:** Consumers, producers and the efficiency of markets; understanding how different actors in the market behave; understanding of the theory of consumer choice	E4	[…] show consumer-conscious behaviour in purchase situation and be able to justify the purchase-decision
The monetary system **Further explanations:** Saving, investment and the financial system; money growth and inflation; understanding of the role of money in economy	E5	[…] know the danger and methods of debt and excessive indebtedness, know provision of help for debt relief and reflect on one's own consumer behaviour
Government policies and its influences **Further explanations:** The design and costs of the tax system; externality (for instance, economy and ecology); public goods and common resources (goods without market prices); monetary and fiscal policy	E6	[…] know the tasks and aims of state environment policies
Market forms **Further explanations:** Firms in competitive market; monopoly; oligopoly	E7	[…] know different market forms and their influence on the pricing
Firms on the market **Further explanations:** Costs of production; The behaviour of competitive firms; factors of production (for instance, labour, land, and capital)	E8	[…] describe the tasks of companies in economic processes
Income **Further explanations:** Earnings and discrimination; income inequality and poverty	E9	[…] differentiate earned income and investment income
Indicators of economy **Further explanations:** GDP, CPI…	E10	
Labour market **Further explanations:** Unemployment; short-run trade-off between inflation and unemployment	E11	[…] recognize structure-conditioned unemployment problem

B. Sub-competencies/criteria in the field of knowledge-based competencies in business

Criteria of knowledge-based competencies in business	Code	*Possible* text in the curriculum
Business and its external environment **Further explanations:** Various types of business activity and organisation; financial institutions and their role in the financial structure; business external environment, e.g. economic systems, structure of industry, location of industry	B1	[…] recognize that an economic order is necessary for the form of social life
Corporate strategy and planning **Further explanations:** Methods used in forecasting and planning enterprise goals and department objectives; the nature of decisions and methods of statistical analysis in making decisions	B2	[…] understand the functionality of market and be able to reflect the roles of participants in market events
Organising **Further explanations:** Organisation structure, levels of organisation; importance of authority, responsibility, and delegation	B3	[…] know the world-economic interrelationship and be aware of the consequence of globalisation
Directing **Further explanations:** Leadership, relationship and communication between managers and employees	B4	[…] show consumer-conscious behaviour in purchase situation and be able to justify the purchase-decision
Controlling **Further explanations:** Principles of effective control, budgetary and non-budgetary, financial accounting conventions	B5	[…] know the danger and methods of debt and excessive indebtedness, know provision of help for debt relief and reflect on one's own consumer behaviour
Marketing and sales management **Further explanations:** Selling, transportation, storage, gathering market information, etc.	B6	[…] know the tasks and aims of state environment policies
Production and operation management **Further explanations:** Production function; the place of product design and development; the location of plant; the layout of equipment; the importance of planning and control	B7	[…] know different market forms and their influence on the pricing
Human resource management **Further explanations:** Recruitment selection; training and development; promotion and transfer; redundancy and retirement,	B8	[…] describe the tasks of companies in economic processes
Administrative management **Further explanations:** Planning and organising the office; office machinery and equipment; human aspects of computer usage	B9	[…] differentiate earned income and investment income
Business ethics **Further explanation:** ethical behaviour of a contractor, employer and employee, black economy, mechanism of corruption	B10 (PL)	[…] clarify the mechanism of corruption and explains/presents the effects of this phenomenon for the economy

C. Sub-competencies/criteria in the field of knowledge-based competencies in business

Criteria of social competencies	Code	*Possible* text in the curriculum
Communication ability **Further explanations:** A person has the ability to communicate, when he/she is able to express him/herself verbally and nonverbally and interpret other people's messages properly and know how to react based on them	SO1	[...] must strive to understand communicatively […] can illustrate clearly their point of view with examples
Conflict ability **Further explanations:** Conflict ability is concerned with recognizing a clash of interests and the willingness to resolve them amicably	SO2	[...] have the possibility to set about conflicts fairly and peacefully
Ability to give and receive criticism **Further explanations:** Ability to give and receive criticism. Someone who is ready and able to deal with other people's mistakes constructively and fairly	SO3	[...] accept different ideas [...] be able to understand criticism of one's own behaviour not as a personal attack, but rather as criticism on the subject [...] know how to cope with conflicts constructively
Team ability **Further explanations:** Readiness and competence to cooperate with other members of a group in a goal and task-oriented way	SO4	[...] always work in a team
Empathy **Further explanations:** Understand the situation of other people and to deal with them politely, and with respect	SO5	[...] deal with others with respect

D. Sub-competencies/criteria in the field of self- competencies with emphasis on entrepreneurial thinking

Criteria of self-competencies with the emphasis on entrepreneurial thinking	Code	*Possible* text in the curriculum
Internal locus of control **Further explanations:** It refers to the extent to which individuals believe that they can largely control their actions and the consequences of their actions. Individuals with a high internal locus of control believe that events result primarily from their own behaviour and actions. (Decision-making ability; assertiveness; self-marketing; organising competence; visionary thinking)	SE1	[...] is able to make a decision, to set own priorities [...] organise the process of work;
Achievement motivation **Further explanations:** People who are strongly achievement-motivated set goals for themselves and look for affirmation of their accomplishments; (Plan, organise, readiness for intellectual achievement; orientation towards achievement; motivation for achievements; goal-orientation; lifelong learning; resistance against stress, ability to work under pressure)	SE2	[...] know that crisis is a part of life and know the possibilities to overcome them […] is willing to spark his/her competencies as entrepreneur

Criteria of self-competencies with the emphasis on entrepreneurial thinking	Code	*Possible* text in the curriculum
Eagerness for independence **Further explanations:** It is understood as the quest for autonomy and self-fulfilment. People with outstanding eagerness for independence orientate their actions and decisions on their own plans and evaluation, seldom or not at all on authority. (Personal independence; leadership; creativity; imagination)	SE3	[...] develop learning goal and theme independently
Moderate tendency to take risks **Further explanations:** People with this characteristic are ready to take risks, without being careless. (Readiness for moderate risks; entrepreneurial thinking as employee; grasp for trends and market developments)	SE4	[...] learn to perceive and evaluate one's strengths and weaknesses
Entrepreneurial attitude **Further explanation:** Features of entrepreneurial person, taking entrepreneurial action	SE5 (PL)	[...] present features and abilities of an entrepreneurial person

Sources: own compilation based on (Berger et al. 2012; Pilz, Berger, Canning, ed., 2012) based on Appleby (1994), Bader (2007), Mankiw (2001).

Within other subjects a few hours can be devoted to the realisation of contents associated with developing entrepreneurship competencies. However, it is not officially defined how many hours should be devoted to the realisation of the content in business education within these subjects. The decision is left up to teachers.

The analysis of the NCC indicates that schools should equip students of gymnasium relatively well with economic knowledge. Taking into account four groups of competences in the NCC, the economic knowledge content prevails (Figure 1).

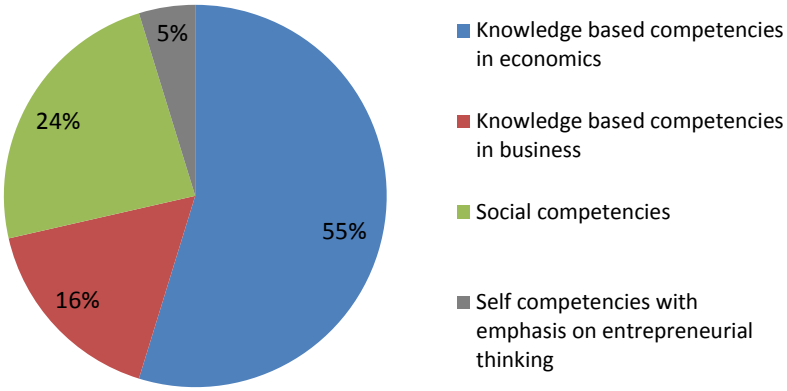

Figure 1. The percentage distribution of the main groups of records of the NCC in lower secondary school (gymnasium) concerning entrepreneurship competencies
Source: own compilation.

Nevertheless, significant deficiencies refer to market forms (E7). A detailed diagram shows that records in competencies associated with economic knowledge are mostly

represented (i.e. E11, E5, E6, E9, E10 and E1), as well as SO1 competencies (Figure 2). Business competencies in a narrow sense, i.e. directly associated with conducting business activity, are also introduced by the NCC. They are only limited to sections within civic education. A difference between the needs and the NCC has been detected in a few fields which are either barely taught or missing completely (Figure 3). This refers to the content associated with the structure of corporate strategy and planning (B2), which deals with directing people (including leadership), and relationships and communication between managers and employees (B4). These issues are limited to ethic values in business. Those connected with the principles of controlling and accounting (B5), production and operation management (B7) and administration (B9) are non-existent. Besides the limited content, the NCC includes an additional criterion of "black economy" and corruption (B10 PL), so omnipotent in modern economy.

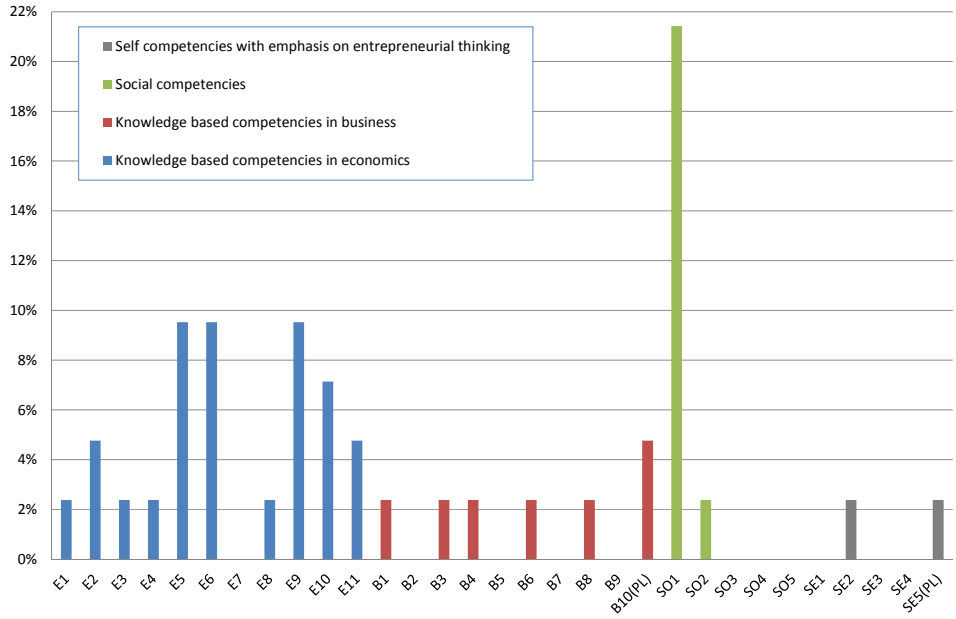

Figure 2. The percentage distribution of records of the NCC in lower secondary school (gymnasium) concerning entrepreneurship competencies
Source: own compilation.

According to the NCC, social competencies should be mainly developed during lessons of Polish and social education (called "family life education"). Surprisingly, no regulations regarding this competence are found in civic education. The curriculum stresses communication skills (SO1) and conflict management skills (SO2). In the latter case, the content is covered during the social education classes. There, conflict resolution concerns children-parents relations, but it may be assumed that students will acquire competencies of solving conflicts in their future place of employment. Furthermore, the curriculum lacks teaching content associated with the skills of giving and taking criticism (SO3) and empathy (SO5). Another missing skill is teamwork (SO4). Such a skill is crucial due to increasing specialisation, as well as the need for group solving of complicated

problems found in every work environment. The importance of teamwork skills has rich literature devoted to it, mainly concerning team management. However, according to S. Covey (1989, 2004), creative, synergetic cooperation in a team is one of the eight basic elements of effectiveness of every person, not only an effective manager-leader.

The analysis of the NCC concerning self-competencies associated with entrepreneurial thinking shows they almost do not occur in the teaching content. The curriculum for lower secondary school (gymnasium) does not anticipate developing the skill of self-control (SE1, SE3, SE4). The only area which might refer to the development of the entrepreneurial attitude is that of making plans for further education. However, the learning outcomes at the lower secondary level contain the following phrase "[student will be able to] present features and skills of an entrepreneurial person; participate in public undertakings which enable development", which was marked as a typical Polish element - SE5 PL.

The analysis of the distribution of content of the NCC in upper secondary schools indicates that competencies in the field of entrepreneurship are implemented directly on the two subjects dedicated to entrepreneurship education, that is "BE" obligatory for all students and "EP", optional, chosen by the students,. It should be noted, however, that this optional subject cannot be chosen by the students of basic vocational schools, and it is only for general and technical upper secondary schools. This is due to the fact that vocational students have various additional subjects or prepare to run a business in their vocational education. Generally, competencies in the field of economic knowledge prevail, constituting 57% of the total (Figure 3), the contents of all entries in this field are based on the obligatory subject "BE". The second group consists of knowledge-based competencies in business, but most of the entries appear in the optional subject "EP", and therefore cannot be implemented for all students. Self-competencies are treated quite marginally in the NCC.

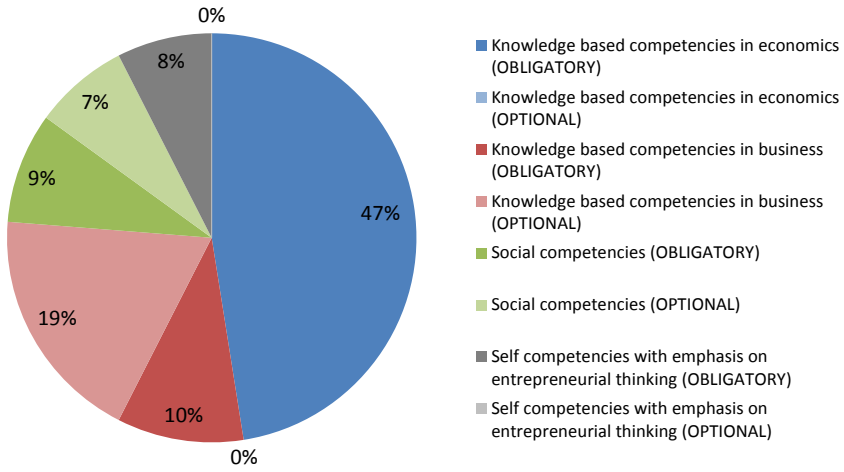

Figure 3. The percentage distribution of the main groups of records of the NCC Curriculum in upper secondary (post-gymnasium) school concerning entrepreneurship competencies
Source: own compilation.

The detailed analysis of the content of the NCC indicates that the best represented content in the records of the curriculum are the issues of the monetary system (E5), government policies and its influences (E6) and the labour market (E11) – Figure 4. A large share of the content is also represented by the business and its external environment (B1), but mainly in the optional subject "EP". A relatively high proportion of social skills related to interpersonal communication, conflict resolution and team work (SO1, SO2, SO4) also refers to this subject. It should be noted that too much important content is carried out under an optional, not obligatory course, which should not be assessed as the best solution.

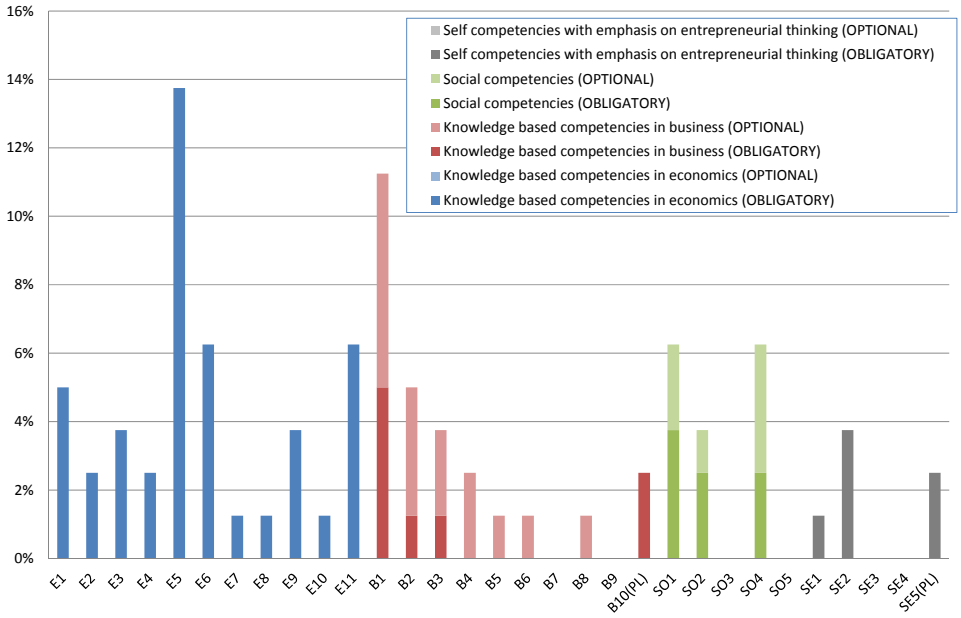

Figure 4. The percentage distribution of records of the NCC in a upper secondary (post-gymnasium) school concerning entrepreneurship competencies
Source: own compilation.

The conclusions from the analysis of the national core curriculum in gymnasium were confronted with the results of in-depth interviews with social partners (employers' organisations and trade unions) on entrepreneurship education in Polish schools. They emphasised a generally unfavourable opinion about the attitude of the Polish school to equipping with the knowledge economy along with the marginalisation of business knowledge, as well as social and personal skills, important in any profession and therefore so highly requested by employers in the labour market. A detailed analysis of the social partners' opinion is included in the earlier study (Kurek, Rachwał & Szubert 2012a). These opinions are generally consistent with the views of secondary school students in this field (Ziółkowska-Weiss, 2014).

The findings of the previous comparative research on curriculum in lower-secondary schools of Poland, Scotland and two regions of Germany (Berger et al. 2012) indicated that entrepreneurial competencies were quite different for each of the coun-

tries/regions, reflecting a range of diverse cultural and socio-economic factors. In the case of North Lanarkshire in Scotland, the emphasis within curriculum was focused upon employability and a transferable skills set within occupational structures. In the two German regions, there was much more emphasis on the wider economic and market environment and collective competencies. While, in the Polish curriculum, the priority subjects within the curriculum were related to wider market economy, including aspects of the labour market and industrial relations. Comparing to Scotland and Germany, very few self or collective social competencies appear within the curriculum in Poland. In fact, a surprising outcome was the apparent absence of business studies within the lower-secondary school curriculum in all three countries (Berger et al. 2012). Furthermore, Canning, Berger and Pilz (2012) show that the knowledge based competencies in economics also dominate in curricula in Austria, Latvia and especially in Hungary, which also transforms its economy. It should be noted, however, that the prevalence of content related to economic knowledge is much greater in Poland than in those other countries.

CONCLUSIONS

The analysis of content distribution of the NCC for secondary schools indicates that competencies in the field of economic knowledge prevail, the contents of all entries in this field are based on the obligatory subjects "civics" (lower-secondary schools) and "BE" (upper-secondary schools). Social and self-competencies are treated quite marginally in the NCC. Shortcomings in the business competencies, carried out mainly on the compulsory subject "EP", are also visible.

The conducted research allowed to draw a number of conclusions and recommendations or challenges for politicians and educators in entrepreneurship education in Poland. In the light of the analysis, the need for further changes in the education system in Poland can be indicated, so that it supports the formation of more entrepreneurial attitudes. This is reflected in the further reform of the curricula. These should include in particular:

- the need to clarify the records in the NCC, since in many cases the entries are too vague, which means that the teacher cannot be exactly sure which effects are to be achieved,
- the need to modification of the records in the NCC in terms of entrepreneurship so that a greater emphasis was placed on social and personal competencies,
- in the case of upper secondary schools, the content of business knowledge in the obligatory part of education should be strengthened, because students who do not choose an optional subject "EP" will be poorly equipped to operate their own business and therefore it is worth considering whether the subject should be obligatory,
- introducing the possibility to carry out the subject in the extended version and enable to take matriculation exams in entrepreneurship.

The presented analysis can contribute to a better understanding of the level and structure of entrepreneurship education in Poland. An important added value of the analyses is their application value. The conclusions of the research may serve as guidelines to educational policy, not only in Poland but also in other countries transforming their economies, and to international comparative studies. Encouraging an entrepre-

neurial mind-set and making young people financially literate by engaging them in learning entrepreneurship within the motivating context will help them to enter the workforce or become entrepreneurs. Therefore, raising the level of EE should be reflected in the processes of economic development, especially in the form of small and medium enterprises. It is increasingly important in times of economic crisis as creativity applied through entrepreneurship education can lead to improvements in the transition process from leaving school to entering the labour market.

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Entrepreneurial Intentions of Students in Poland in the View of Ajzen's Theory of Planned Behaviour

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ABSTRACT

Objective: The purpose of this study is to empirically verify Ajzen's theory in the Polish academic environment, however, the TPB was extended by one more variable – attitude towards risk.

Research Design & Methods: We decided to use a survey questionnaire among students. The survey was conducted among seven universities in Krakow. Out of 1,100 sent questionnaires, we received 719 fully completed and corrected questionnaires, it means that the return rate is 65.4%. The questionnaire was divided into 14 thematic blocks – their elements explain the entrepreneurial intentions.

Findings: The statistical calculations confirmed that three Ajzen's independent variables, such as attitude towards entrepreneurship, subjective norms and perceived behavioural control determine the entrepreneurial intentions of the investigated students. Additionally, we found out that the risk attitude is also a determinant in a similar way, and entrepreneurial intentions differ between business and non-business students.

Implications & Recommendations: Shaping the entrepreneurial mindset of young people is one of the most important roles of the contemporary education system, including the tertiary education. Future studies should seek new factors influencing the entrepreneurial intentions of students, facts that will be complementary to TPB and EEM models.

Contribution & Value Added: The study extended Ajzen's TPB of risk propensity as a separate variable describing the attitude towards entrepreneurship.

Article type:	research paper
Keywords:	entrepreneurial intention (EI); entrepreneurship education (EE); higher education; theory of planned behaviour (TPB)
JEL codes:	I23, L26

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INTRODUCTION

Intention-based models, although derived from social psychology, are used successfully in management research, especially in the study of entrepreneurship. On this basis, one can predict future behaviour, which is important for both managers, economic analysts and policy makers responsible for the creation of an appropriate entrepreneurship support system, including its important element which is entrepreneurship education (Wach, 2013; 2014; 2015) whose main task is to develop appropriate entrepreneurial attitudes. A suitable educational system stimulating entrepreneurship is important for economic practice. For many years such solutions have been recommended by the European Union (Wach, 2014b; Najda-Janoszka & Wach, 2008), but also in Poland the implementation of these recommendations is gaining in importance, not only in the business school (Kosała & Pichur, 2008), but also in non-economic fields of studies (Płaziak & Rachwał, 2014), especially in the context of the internationalisation and Europeanisation of Polish universities (Marona & Głuszak, 2014). The contemporary task of the university is to develop entrepreneurial attitudes and to inspire creative thinking (Żur, 2014), as well as to awaken entrepreneurial intentions among students (Kuehn, 2008). Entrepreneurship education is not only important in the development of entrepreneurial attitudes, but in stimulating entrepreneurship in general (Daszkiewicz, 2014; Urbaniec, 2014), and especially in the family business (Rachwał, 2010).

The purpose of this study is to empirically verify Ajzen's theory of planned behaviour (TPB) in Polish realities, however, we extended the TPB by one more variable – attitude towards risk. In the study we used a questionnaire survey conducted among students of seven different universities in Krakow, including both economic and non-economic fields of studies, as well as of different years (n = 719).

The first section of the paper includes the literature review on entrepreneurial intentions from the perspective of behavioural sciences. The second section discusses the methodological assumptions of the empirical studies, among them the hypotheses, the research design and the sampling. The third section elaborates on the empirical results of the survey and the statistical calculations, followed by the conclusions in a typical layout consisting of final remarks, research limitations and suggestions for further studies.

LITERATURE REVIEW

To understand what mechanisms govern the entrepreneurial intentions of individuals, usually various researchers take advantage of a well-established psycho-sociological concept originated in the mid-1980s – namely, the theory of planned behaviour developed by Ajzen (1987, 2011). According to this theory, behavioural intentions depend on three antecedents (i), that is the attitude towards a given behaviour, (ii) the perceived behavioural control, sometimes called feasibility, and (iii) social norms that shape the perception of such a behaviour. The first two factors (i.e. the attitude toward the behaviour, but rather the attitude towards the results associated with the behaviour and the perceptions of social norms with respect to this behaviour) reflect the desirability and the desired occurrence of such a behaviour. The third factor reflects the personal perception of the ability to control the behaviour and is usually called self-efficacy.

TPB is one of the most popular concepts while studying entrepreneurial intentions (Karimi et al., 2016; Piperopoulos & Dimov, 2015; Lima, Lopes, Nassif & de Silva, 2015). There is no clear and universal definition of an entrepreneurial intent in the literature. Thompson (2009, p. 676) defines an individual entrepreneurial intent or an entrepreneurial intention as "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future". Intention among potential entrepreneurs is seen as a "conscious state of mind that precedes action" (Shook, Priem & McGee, 2003, p. 380). This general concept of the intentional behaviour is very popular among researchers analysing entrepreneurial intentions. Similarly, Krueger (1993) defines entrepreneurial intentions as the tendency to have the potential to start your own business in the near future. Koçoğlu and Hassan (2013) emphasise that entrepreneurial intentions depend indeed on three above mentioned variables (attitude towards entrepreneurship, subjective norms, perceived behaviour control), but in addition, they also depend on personal factors, mainly on how a person perceives their present conditions and the possibilities leading to a desired state (Azjen, 1987, 1991; Retan, 1997). Byabashaija and Katono (2011), but also Bae at al. (2014) emphasise a particular role of situational factors (such as employability and the ability to make sacrifices and liabilities), as well as personality features (such as desirability, feasibility, effectiveness), which promote entrepreneurial intentions and their conversion to specific behaviour, in other words to set up your own business.

The second also frequently cited theoretical conceptualisation of entrepreneurial intentions is the entrepreneurial event model (EEM), often referred to as the concept of SEE (Shapero's entrepreneurial event), as this concept was initially created by Shapero (1975), and then developed by him together with his colleagues (Shapero & Sokol, 1982), although Krueger (1993) contributed to the development of this framework by introducing external factors, thus, this concept is sometimes referred to as the Shapero-Krueger model (Krueger, Carsrud, & Reilly, 2000). Shapero's model assumes that inertia drives human activity, until there is an action disturbing the balance that usually has a negative context (e.g. loss of a job). Such impulses force a person to act (Heuer, 2012). Apart from entrepreneurial intentions, the credibility of a behaviour is also very important. Credibility is understood dichotomously as desirability and feasibility. These factors shape entrepreneurial intentions. An individual entrepreneurial intent is shaped in a broader context, it is to take into account a number of factors, both personal and behavioural (Elfving et al., 2009).

The theory of planned behaviour (TPB) and the entrepreneurial event model (EEM) are "the two most extensively tested competing theories that have been used to explain entrepreneurial intention" (Schlaegel & Koenig, 2013, p. 292). The co-creator of the latter concept also thinks so (Krueger et al., 2000). Intention-based models are implemented successfully not only in social psychology, but also in marketing and management (Krueger, Reilly, & Carsrud, 2000, p. 416).

Prior research revealed very interesting empirical conclusions. Schlaegel and Koenig (2013, p. 318) studying all the determinants indicated in the TPB and EEM models showed "that the different determinants included in the two theories have a positive effect on entrepreneurial intentions". Pfeifer, Šarlija, and Zekić Sušac (2016) found that the main predictors of entrepreneurial intentions in Croatia are the strength of entre-

preneurial identity aspiration and entrepreneurial self-efficacy. Siger and Monsen (2015) found that young people across various European countries perceive academic employment as an intrapreneurial career path (Perlman, Gueths & Weber, 1988), thus, the investigated "students with high levels of entrepreneurial self-efficacy prefer the academic to the employment option and the founding to the academic option" (Siger & Monsen, 2015, p. 45).

MATERIAL AND METHODS

The aim of the empirical research was an attempt to implement the theory of planned behaviour of Ajzen (1987, 1991, 2011) among a group of students in the Polish academic environment. It is one of the most widely used concepts in analysing the intentions of behaviour, especially entrepreneurial intentions worldwide, and recently this concept is also implemented in Poland (Claar et al., 2012; Jiménez-Moreno & Wach, 2014; Wach, 2015; Rantanen, Pawlak & Toikko, 2015; Rachwał & Wach, 2016).

We decided to use a survey questionnaire among students. The survey was conducted by the Centre of Strategic and International Entrepreneurship of the Cracow University of Economics and the questionnaire was developed by Krzysztof Wach as a leader of the research project (Entrepreneurial Intentions Questionnaire, EIQ). However, it was based on the original questionnaires used in TPB and EEM surveys, nevertheless, they were extended and adapted to Polish realities.

The EIQ 2015 survey was conducted in a couple of universities in Krakow, including[1]: (i) Cracow University of Economics, (ii) Jagiellonian University, (iii) Pedagogical University of Cracow[2], (iv) AGH University of Science and Technology, (v) Cracow University of Technology, (vi) University of Agriculture in Krakow, (vii) Jesuit University Ignatianum in Krakow.

The Centre of Strategic and International Entrepreneurship prepared 1100 questionnaires and sent them to randomly selected professors from seven various universities in Krakow, asking them to distribute the questionnaires among their students during classes. Finally, we received 719 fully completed and corrected questionnaires, it means that the return rate is 65.4%.

The questionnaire consisted of 14 thematic blocks (**A**: Entrepreneurial intention EI; **B**: Attitude towards becoming an entrepreneur; **C**: Attitude towards entrepreneurial risk; **D**: Subjective norms; **E**: Entrepreneurial capacity; **F**: Entrepreneurial self-efficacy ESE; **G**: Entrepreneurial education EE; **H**: Perceived support; **I**: Perceived barriers; **J**: Locus of control; **K**: Proactive personality; **L**: Individual innovativeness; **M**: Entrepreneurial objectives; **N**: Characteristics of respondents). These blocks consisted of 3-20 specific questions, evaluated subjectively by the respondent on a 7-point Likert's scale. Where it was justified (A-L), we transformed the variables of individual blocks into quasi-continuous data using the arithmetic mean (Allen & Seaman, 2007), giving the image of a given trait of individuals. The survey was conducted from January to June 2015, and was followed by the construction of the database, the analyses of the correctness and completeness of the collected statistical data.

[1]The official names of these universities were used (Krakow vs. Cracow).

[2]The results of the survey at that university are published in Rachwał & Wach (2016).

The following research hypotheses were assumed to be verified based on the empirical material:

H1: **Attitude (Ajzen's TPB)**: The individuals positively disposed towards entrepreneurship are characterised by significantly higher entrepreneurial intentions than those reluctant to entrepreneurship.

H2: **Risk (extension of Ajzen's model)**: The higher the willingness of individuals to take the risk, the higher the entrepreneurial intentions.

H3: **Norms (Ajzen's TPB)**: The higher subjective standards to private enterprise in the society, the higher the entrepreneurial intentions of the individual.

H4: **Control (Ajzen's TPB)**: The higher the belief in a possible control over the potential business activity is, the higher the entrepreneurial intentions of the individual.

In order to verify the hypotheses we used descriptive statistics, correlation analysis and multivariate analysis. The calculations were performed in the environment of MS Excel and Stata 12.

RESULTS AND DISCUSSION

Based on the correlation analysis carried out for the full sample (Table 1), we found that students with a very positive attitude towards becoming an entrepreneur (B), assuming that being an entrepreneur has more advantages than disadvantages), have high entrepreneurial intentions (A), meaning that these students are ready to make a lot of efforts to start and run their own business (r = 0.8). Those students who are willing to start a business (A), and what is more it would be easy for them due to their entrepreneurial capacity (E), have a high sense of entrepreneurial self-efficacy (F). It is worth adding that these students at the same time declare relatively high ratings of their entrepreneurship education (G). We also noted that the proactive personality (K) accompanied the innovative behaviour of students (L). We found negative correlations between proactivity (K) and innovative individual behaviour (L), as well as between a locus of control (J) and individual innovativeness (L), which in the future should result in a in-depth analysis with regard to more homogeneous control variables.

It is visible that those students who plan to become entrepreneurs significantly stand out from the respondents *in plus* in terms of most of the criteria. In particular, these differences are visible in the case of the questions about entrepreneurial self-efficacy. In the case of the questions about a locus of control, a person willing to become an entrepreneur showed lower scores than the others (Figure 1), which means that these students believe that everything depends on them, not on luck.

By distinguishing the sample into two sub-samples (students that are studying on economic/business studies and others), we assume that these two groups differ significantly in some cases. Particularly, we observe big differences in the case of entrepreneurial intentions, entrepreneurial self-efficacy and entrepreneurship education. Those who study economics/business are characterised by higher average values of these variables (Figure 2).

According to the first regression model (Table 2), the higher attitude (B) towards

becoming an entrepreneur (i.e. satisfaction, being one's own boss rather than having a secure job), the higher entrepreneurial intentions (A) are.

Table 1. The correlation matrix of synthetic indicators designed on the basis of particular thematic blocks of questions A-L

	A	B	C	D	E	F	G	H	I	J	K	L
A	1.00											
B	0.80	1.00										
C	0.41	0.40	1.00									
D	0.36	0.40	0.32	1.00								
E	0.59	0.55	0.47	0.41	1.00							
F	0.43	0.42	0.39	0.36	0.67	1.00						
G	0.36	0.28	0.32	0.17	0.59	0.54	1.00					
H	0.35	0.35	0.22	0.26	0.40	0.41	0.39	1.00				
I	-0.20	-0.19	-0.16	-0.16	-0.30	-0.21	-0.22	-0.12	1.00			
J	-0.18	-0.15	-0.22	-0.18	-0.24	-0.24	-0.21	-0.09	0.30	1.00		
K	0.39	0.36	0.46	0.30	0.49	0.45	0.44	0.23	-0.19	-0.36	1.00	
L	0.33	0.30	0.49	0.28	0.42	0.39	0.37	0.16	-0.24	-0.42	0.69	1.00

Note: Critical level of Pearson correlation 0.052 (α = 0.05).
Source: own calculations in Stata 12 (EIQ 2015, *n* = 719).

Similar results were noted in the case of the attitude towards entrepreneurial risk (C). The more willing to take a risk, experience-oriented, courageous students are, the more often they state that their goal is to be an entrepreneur and to create their own business in future. Statistically significant and positive coefficient corresponding to (E) means that high entrepreneurial capacity influences entrepreneurial intentions.

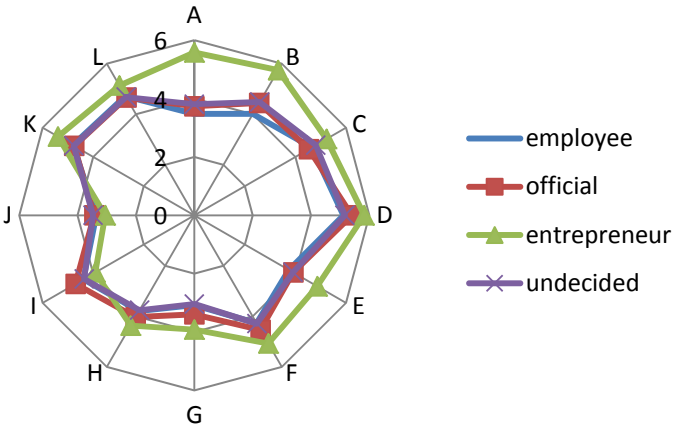

Figure 1. Radial diagram of the average values A-L and the desired career path
Source: own study (EIQ 2015, *n* = 719).

Moreover, controlling the education background by using ***Economic_studies*** variable[3], we assume that those who study economics/business have significantly higher entrepreneurial intentions than others. The presented model explains variance of (**A**) in almost 70%.

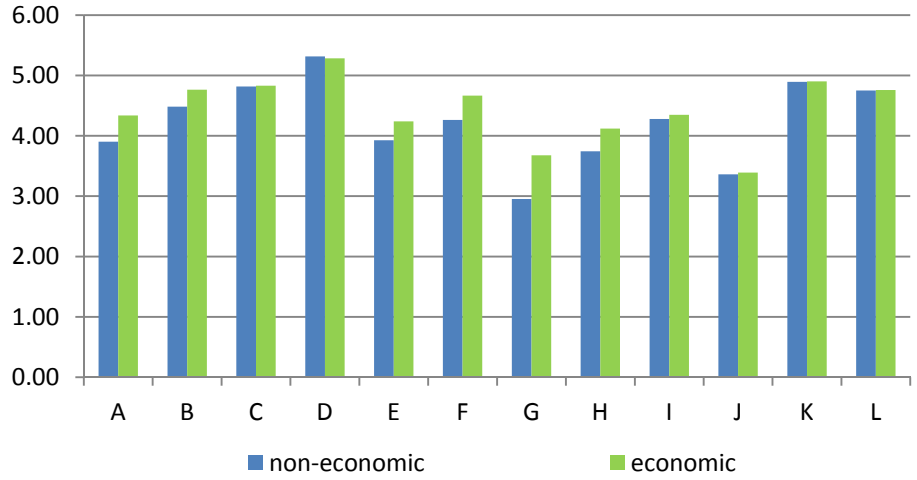

Figure 2. Bar diagram of the average values A-L by economic and non-economic studies
Source: own study (EIQ 2015, *n* = 719).

Table 2. The multiple OLS regression explaining entrepreneurial intention (version 1)

dependent variable: A	**coef.**	**st. err.**	***t*-stat**	***p*-value**	**conf. interval.**	
const	-0.795	0.179	-4.430	0.000	-1.147	-0.443
B	0.747	0.030	25.000	0.000	0.688	0.805
C	0.085	0.034	2.470	0.014	0.017	0.152
D	-0.003	0.029	-0.100	0.919	-0.061	0.055
E	0.244	0.036	6.840	0.000	0.174	0.314
Economic_studies	0.147	0.063	2.350	0.019	0.024	0.270
Adj. R-squared	67.3%	F-stat & *p*-value	296.48 [0,000]	MSE	0.826	

Source: own calculations in Stata 12 based on EIQ 2015 survey (*n* = 719).

According to the second regression model (Table 3), these students who are more willing to take a risk, especially with regard to money, and who are looking for new experiences (C), aim to be entrepreneurs and to create their own businesses in future (A). We obtained similar results in the case of subjective norms (D). Students that claim that their family, friends and colleagues would admire their decision to start own business, have

[3]Binary variable: 1 if a respondent studies economics/business, 0 otherwise.

higher entrepreneurial intentions. Statistically significant and positive coefficient corresponding to (E) means that high entrepreneurial capacity influences entrepreneurial intentions. We also checked the education background as a control variable, as we assume also in this case that those who study economics/business have significantly higher entrepreneurial intentions than others. The presented model explains variance of A in almost 40%. Although this model explains rather low part of A variance, it indicates that D factor has got significant positive impact on the explained variable. In the first model this variable was omitted because of high correlation between B and D factors.

The results of our study are intuitive and in line with other research in this field. Karim et al. (2016, p. 195) using structural models, on a sample of 205 students from 6 Iranian universities, showed that there are positive effects of social norms, attitude towards entrepreneurship and perceived behavioural control on entrepreneurial intentions. Based on a sample of 454 students from one Croatian university, Pfeifer, Šarlija, and Zekić Sušac (2016, p. 108) found that entrepreneurial intentions are impacted mainly by entrepreneurial self-efficacy. Similar results were obtained by Piperopoulos and Dimov (2015, p. 970) using a sample of 114 students from major British universities, however, they evidenced that "higher self-efficiency is associated with lower entrepreneurial intentions in the theoretically orientated courses and higher entrepreneurial intentions in the practically orientated courses". We tested this issue in general, so it can beneficial to test also the impact of the course character (practical vs. theoretical).

CONCLUSIONS

The statistical calculations confirmed that three Ajzen's independent variables, such as attitude towards entrepreneurship, subjective norms and perceived behavioural control determine entrepreneurial intentions of the investigated students. Additionally, we found out that the risk attitude is also a determinant in a similar way, and entrepreneurial intentions differ between business and non-business students. All four hypotheses were confirmed. Based on the empirical material, we can draw the following detailed conclusions:

- There is a strong positive relationship between entrepreneurial intentions (A) and attitude towards entrepreneurship (B), and moderately strong between entrepreneurial intentions (A) and perceived behavioural control (E).
- Students thinking of or planning to become entrepreneurs in the future are characterised by higher than in other groups variables such as attitude towards entrepreneurship (B), risk propensity (C), subjective norms (D), perceived behavioural control (E), entrepreneurial self-efficacy (F), and lower variables such as perceived barriers to entrepreneurship (I) and a locus of control (J).
- There are differences between students of economics/business and non-economic fields of studies. The differences manifest in particular in categories A, B, F, G, H, where individuals in the study fields of economics/business showed higher values.
- Estimated models indicate that the individual entrepreneurial intent is positively influenced by such factors as B, C, D, E, as well as the fact of being a student of economics/business study fields.

Like any empirical studies based on perception, also the one presented and discussed in the article, has its research limitations. First, the sample was relatively large, but did not include the entire student population of Krakow, and the same was not fully representative, however, it was randomly selected. Second, statistical inferencing on the basis of perception, although fully acceptable by psychologists and having a lot of confirmations in fact, still does not allow to absolutise in entrepreneurship research. The collected empirical material and, above all the findings indicate a possible extension of the research by new research topics, such as positive and negative motives in making decisions about starting a business. In the next study it will be crucial to confront Ajzen's TPB with Shapiro's EEM, as well as to add new variables into these well-established models, such as proactiveness and innovativeness of individuals.

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Parametric and Non-Parametric Methods for Efficiency Assessment of State Higher Vocational Schools in 2009-2011

Lesław Rządziński, Anna Sworowska

ABSTRACT

Objective: As a great number of higher schools in Poland are financed from public resources, there arises a question about the adequacy of those schools' inputs to the obtained outputs. The aim of this paper is to examine the technical efficiency of 27 state higher vocational schools in Poland.

Research Design & Methods: The research was conducted for the years 2009-2011. The Stochastic Frontier Approach (SFA), as well as Data Envelopment Analysis (DEA) were applied. The other one was calculated both for Constant Returns to Scale (CRS) and for Variable Returns to Scale (VRS).

Findings: The majority of the studied schools, found as inefficient in the analysis conducted with the DEA method with CRS models, are found to be efficient in VRS models, demonstrate relatively lower efficiency when calculated with the SFA method.

Implications & Recommendations: For the efficiency evaluation of higher education institutions, models of VRS should be applied. It enables to identify the units that despite operating in a different scale are fully efficient. The size and the scale of operations may have a significant impact on the efficiency of activities conducted by higher education institutions.

Contribution & Value Added: The work compares two methods (parametric and non parametric) for the evaluation of technical efficiency that are present in subject literature (SFA is less popular) but are rarely evaluated and compared for its applicability to the higher education sector.

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INTRODUCTION

Higher education constitutes a fundamental element shaping the country's economic policy. Modern states realise that investments into human capital (education, research) significantly increase the innovativeness of a given country's economy.

In an effort to meet the needs of the labour market, under the Act on Higher Vocational Schools of 26 June 1997, State Higher Vocational Schools (SHVS) were created. The idea behind the establishment of SHVSs was to ensure quick and practical preparation of professionals to work in a dynamically developing economy. Moreover, the undertaking had a social objective – the schools were intended for young people from families of limited means, coming from small towns (predominantly county towns). The factor in favour of establishing the schools was the so-called higher educational boom, as well as the baby boom. At the same time, these schools were meant to act as competition to private schools that managed to achieve a perfect match of the offered fields of study and market needs.

The higher education institutions presented in this paper may find that the evaluation of the technical efficiency of SHVSs' operation can serve as an element of social control (the schools are beneficiaries of public funds), as well as a source of valuable information on the areas requiring improvement.

The objective of this paper is to examine the technical efficiency of SHVSs in Poland. Detailed objectives include the study of two didactic and one financial model and a comparison of the results obtained with parametric and non-parametric methods.

LITERATURE REVIEW

An analysis of the efficiency of enterprise operations is an instrument of assessing the operations of a given entity in relation to others. It aims to demonstrate to less efficient entities any existing gaps and deficits in their activity. It is also intended to identify the areas requiring improvement and modifications. Commonly applied methods of efficiency measurement are based on ratio, parametric and non-parametric approaches (Szymańska, 2010).

Ratio analysis for efficiency measurement is based on developing relations between indices describing a model (typically, these include financial ratios, e.g. liquidity, profitability, efficiency, and debt ratios, etc.). A parametric method examines the relationships between input and output factors on the basis of a production function, demonstrating how a maximum effect can be achieved for a given level of inputs. In turn, nonparametric method is based on linear programming.

Data Envelopment Analysis (DEA) was first proposed by Charnes, Cooper and Rhodes (1978). It relied on an efficiency concept formulated twenty years before by Farrell (1957), which defined technical efficiency as a relation between productivity of one unit to the productivity of a benchmark unit[1]. DEA is based on the definition of efficiency as a relation of weighted sum of inputs to weighted sum of outputs (1).

[1]In his work, Farrell determined that one of the objects is more productive than the other if it is able to achieve the same output with lower inputs or if with the same inputs it is able to achieve a better output.

$$E = \frac{\sum_{r=1}^{n} u_r y_r}{\sum_{i=1}^{m} v_i x_i} \quad (1)$$

where:

E - efficiency;
y - output;
x - input;
u - weight defining the significance of individual outputs;
v - weight defining the significance of individual inputs;
γ - number of outputs;
i - number of inputs.

Charnes, Cooper and Rhodes (1978) applied mathematical programming to the estimation of technical efficiency measurements and developed a model known in the literature of the subject as CCR. This is not the only model of DEA analyses. In later years, Banker, Charnes and Cooper (1984) differentiated other models. They considered an approach that took into account the effects of scale:

- CRS model (*Constant Return to Scale*[2]);
- VRS model (*Variable Return to Scale*[3]);
- NIRS model (*Non Increasing Return to Scale*);
- NDRS model (*Non Decreasing Return to Scale*).

The models constructed in this paper take into account constant return to scale (CRS) and variable return to scale (VRS) in order to obtain more precise outputs (enabling a comparison of schools of various size and scale of operations). It requires the result of CRS analysis to take two factors into account – scale efficiency (SE) and the so-called pure technical efficiency (PTE). The occurrence of any differences between the results of technical efficiency of individual CRS and VRS analyses is evidence that a given organisation is characterised by an inefficient scale (cf. Świtłyk & Pasewicz, 2010).

All the presented models can be output-oriented (demonstrating by how much outputs ought to increase, while maintaining the present level of inputs, in order for an entity to become efficient), input-oriented (defining what level of input decrease, with presently achieved outputs, would ensure efficiency to a given entity) or they can be non-oriented models.

Data Envelopment Analysis is fairly widely used to measure technical efficiency of operations in agriculture, health care, education, banking, insurance companies, etc. The analysed entities need to feature the same characteristics. Furthermore, a proper selection of variables is of great significance. The literature of the subject does not provide a universal "key" for matching input and output data. Cunha and Rocha (2012), when analysing higher education in Portugal, assumed total expenditure per student and academic staff per student as inputs, whereas the total number of graduate students awarded Ph.D. degrees and the total number of courses offered constituted their outputs. In the study conducted in Brazil by Figueriredo de Franca, Neiva de Figueriredo and Lapa (2010) inputs included: the total number of professors and Ph.D.-holding academic teachers, the total number of administrative staff and the number of courses offered. The total number of

[2]It also appears in literature as CCR model (abbreviation from its authors' initials – Charnes, Cooper, Rhodes).
[3]It also appears in literature as BCC model (abbreviation from its authors' initials – Banker, Charnes, Cooper).

enrolled students, graduates, and candidates registered to take the entrance examination were chosen as output variables. In the study carried out by Koksal and Nalc (2006) in Turkey, the elements selected as inputs were academic staff salaries, the average number of publications per academic staff member, the weighted sum of students after the first, third and fifth year of study. The output variables included the weighted sum of graduates (of B.Sc., M.Sc. and Ph.D. studies) and an average grade. Johnes (2006) indicates the quantity and quality of undergraduates (calculated as the total number of full-time undergraduate students studying for the first degree multiplied by the average A level points for first year full-time undergraduate students), the quantity of postgraduates, expenditure on administration, and the value of interest payments and depreciation as significant inputs. As significant outputs in the English higher education production process she treats the quantity and quality of undergraduate degrees (the total number of first degrees awarded weighted by degree classification), the quantity of postgraduate degrees and research (the value of the recurrent grant for research awarded by the Higher Education Funding Council for England in British Pounds). On the other hand, to capture research output, Athanassopoulos and Shale (1997) used the national research performance index – the ratings of the Research Assessment Exercise in the UK. Leitner et al. (2007), while researching Austrian universities, adopted the total number of staff and department floor space as input variables. The outputs comprised of financial funds provided by third parties, overall finished projects per person, finished (ordered) projects of the department, the number of examinations, the number of finished, supervised diploma theses, the number of external reports, monographs, projects, patents, publications and the number of finished, supervised Ph.D. theses. The Australian case by Abbott and Doucouliagos (2003) focuses on inputs such as the total number of the academic staff, the number of non-academic staff (fulltime equivalent), expenditure on all other inputs other than labour inputs (including expenditure on energy, non-salary academic and administration services, buildings and grounds, libraries and student services), and the value of non-current assets. Those authors also used measures of teaching output (the number of equivalent full-time students, the number of post-graduate and under-graduate degrees enrolled, as well as the number of post-graduate degrees conferred and the number of under-graduate degrees conferred) and research output (Research Quantum Allocation that each Australian university receives on the base of the composite index calculated from a mix of the National Competitive Grants Index, public sector research funding, research and scholarly publications and higher degree research completions, and the number of competitive grants and industry funding received). Also Avkiran (2001) investigated the technical and scale efficiency of Australian universities using inputs and outputs within three performance models: overall performance, the performance of the delivery of educational services, and the performance of fee-paying enrolments. In Italy, Bergantino et al. (2012) limited inputs to the number of academics, and assumed the number of undergraduates, postgraduates and on-time graduations as outputs. While analysing German universities, Warning (2004) chose expenditure on personnel and other expenditure as her input variables. She recognized the number of publications and the number of personnel as outputs. However, Kempkes and Pohl (2010) for German academic institutions included an output measure for teaching, such as the number of students that have successfully completed their studies. During a study on Japanese universities, researchers Aoki et al. (2010) chose to use the

number of staff, the number of faculties, education and research expenses, grant-in aid for management, general and administrative costs, and profit from donations as inputs. Their outputs are the number of papers, the number of graduate and undergraduate students, the number of library books, grants-in-aid for scientific research, contract research funds, as well as profit from business. In turn, Iraqi researchers, Monfared and Safi (2013) assumed the following as inputs in their model: the number of B.Sc. students, the number of M.Sc. and Ph.D. students, the number of fee-paying students, the evaluation of education quality (conducted by students), the grade earned on an entrance examination, the number of faculty members (instructors, assistant professors), the number of faculty members (associated professors, professors), the faculty members' positions (weighted average), the number of adjunct professors, the number of administrative staff, the faculty floor space, the value of laboratory equipment, budget per student, total incomes. The outcomes of their study included teaching load, the average grade, the employment rate of university graduates, the number of Master's degree theses meriting honours, the university position in the higher schools' ranking, the university completion rate, the number of publications (in journal papers, monographs, conference papers), the number of highly rated publications, the number of invitations to speaking engagements at international conferences, donations, grants and external contracts (research, consultancy), awards and recognition for education and research (at national and international level), the number of patents, the number of internationally renowned scientists, taxes and social contributions.

When analysing the global literature, it becomes noticeable that the selection of variables chiefly depends on the scope of data available to a researcher. Among Polish researchers of the subject of the higher education efficiency, this subject was undertaken by, inter alia, Świtłyk, who jointly with Mongiało (2013) assumed that input variables would include the number of staff members who are not academic teachers, the number of independent researchers, the number of assistant professors and instructors, the number of research and teaching staff members, the value of funds obtained for teaching, the value of funds obtained for research, the value of material and energy consumption, outsourcing, gross salaries, depreciation and other operating costs. Their outputs included the total number of students (full-time, extramural, doctoral, post-graduate students), as well as the value of funds obtained for research. In another paper, Świtłyk together with Pasewicz included the following as input variables: depreciation costs, the costs of material and energy consumption, the costs of outsourcing, salaries and benefits, the value of investment spending, the number of independent researchers, the number of assistant professors, the number of instructors, the total number of academic teachers, the number of scientific and technical staff members, the number of librarians, the number of administrative staff members. The number of undergraduates and graduates was selected as outcome variables. Nazarko et al. (2008) made a different selection of variables. They chose the value of teaching grants as inputs, and the level of student number factor, as well as the number of national and foreign grants. In another study, Nazarko and Saparauskas (2014) recognized government budget subsidies, the population size of the city in which a university is located, and the percentage of students with need-based financial aid as inputs. The outputs in the study included the weighted number of full-time students, the weighted number of full-time doctoral students, the employer hiring expectations with

respect to graduates, and the parametric assessment of scholarly achievements. Yet another Polish researcher who studied efficiency in education was Wolszczak-Derlacz (2013). She assumed that input variables should include the share of public funds in the total income amount, the number of staff members employed at the position of ordinary and extraordinary professors in the total number of academic teachers, the number of doctoral students in relation to the number of academic teachers, the year of establishment, GDP per capita for a region (voivodeship) in which a higher education institution is located, a zero-one variable (1 awarded to technical schools of higher education), the number of various faculties, the number of full-time university employees. The output was the level of student number factor. In the paper Ćwiąkała-Małys (2010) adopts the number of academic teachers, the number of non-academic staff members, the size of the fixed property, teaching grant amounts, operating costs, costs except for the costs of work as inputs in the model. The total number of students and the number of university completing students constitute the outputs.

The parametric method of SFA is a less popular method of evaluating the efficiency of higher education. When analysing Polish and international literature, one finds it difficult to spot any researchers who used the method to evaluate university efficiency. Lampe and Hilgers (2015) made a comparison between the number of publications concerning the DEA and SFA methods. A total of 4,782 articles regarding these methods were published in scientific journals, of which 761 papers with respect to SFA and 4 021 with respect to DEA (the data set comprised the years 1987-2011). Largely, those are publications on analysing the efficiency of health care, banking and agriculture.

The SFA method was devised by Aigner et al. (1977). It estimated efficient cost or production, taking into consideration a stochastic nature of input variables (2).

$$y_i = \alpha + \beta x_i + \varepsilon_i \tag{2}$$

where:

y - either product or costs efficiency;
i - number of observations;
α - constant;
x - vector of explanatory variables;
β - relations between an explained and explanatory variable;
ε - (residual) deviation between two data obtained as a result of observation and the relations predicted by an explanatory variable of the model;

The SFA differs from other methods by its separation of measurement errors from the factor responsible for inefficiency, while at the same time taking into consideration stochastic disturbances.

MATERIAL AND METHODS

This study applied a parametric method of SFA and non-parametric method of DEA. For the DEA method, input- and output-oriented models with constant and variable returns to scale were developed. The outputs obtained from both of these methods were subsequently compared. The study concerned State Higher Vocational Schools and it covered the years 2009-2011. In Poland, 36 State Higher Vocational Schools operated in the period of 2009-2010. The study omitted the schools from Bielsko Biała (incomplete data),

Gniezno, Głogów, Oświęcim, Sandomierz, Skierniewice, Wałcz, Zamość (no data), Koszalin (too short period of operation). Individual higher education institutions were assigned adequate DMU[4] in line with Table 1.

Table 1. SHVS used in the research process

DMU	Location
DMU1	Chełm
DMU2	Ciechanów
DMU3	Elbląg
DMU4	Gorzów Wielkopolski
DMU5	Jarosław
DMU6	Jelenia Góra
DMU7	Kalisz
DMU8	Konin
DMU9	Krosno
DMU10	Legnica
DMU11	Leszno
DMU12	Łomża
DMU13	Nowy Sącz
DMU14	Nowy Targ
DMU15	Nysa
DMU16	Opole
DMU17	Piła
DMU18	Płock
DMU19	Przemyśl
DMU20	Racibórz
DMU21	Sanok
DMU22	Sulechów
DMU23	Suwałki
DMU24	Tarnobrzeg
DMU25	Tarnów
DMU26	Wałbrzych
DMU27	Włocławek

Source: own elaboration based on MNiSW (The Ministry of Science and Higher Education) (2012, 2011, 2010).

The study used factual materials available in Monitor B and "Higher Education" guide. In each model the following inputs were used for the study: land (x1), buildings and civil engineering structures (x2), plant and machinery (x3), other fixed assets (x4), consumption of materials and energy (x5), outsourcing (x6), remuneration + social security and other benefits (x7), other prime costs + taxes and charges (x8). The assumed outcomes (depending on the model developed) were the total number of full-time and extramural students (y1), the total number of full-time and extramural graduates (y2), or income from sales (y3). The following models were developed for the purpose of the study:

[4]DMU (*Decision Making Unit*) defines a given organisational unit that is responsible for the conversion of specific inputs into desirable outputs. The basic principle of DMU selection is that they should feature the identical input and output structure.

- for the **non-parametric method of DEA**:
  a) didactic model_1, for which the number of students was assumed as an output:
     - D_MOD_DID_S_C_I – input-oriented model with constant return to scale;
     - D_MOD_DID_S_V_I – input-oriented model with variable return to scale;
     - D_MOD_DID_S_C_O – output-oriented model with constant return to scale;
     - D_MOD_DID_S_V_O – output-oriented model with variable return to scale;
  b) *didactic* model _2, for which the number of alumni was assumed as an output:
     - D_MOD_DID_A_C_I – input-oriented model with constant return to scale;
     - D_MOD_DID_A_V_I – input-oriented model with variable return to scale;
     - D_MOD_DID_A_C_O – output-oriented model with constant return to scale;
     - D_MOD_DID_A_V_O – output-oriented model with variable return to scale;
  c) *financial* model_3, for which income from sales was assumed as an output:
     - D_MOD_FIN_C_I – input-oriented model with constant return to scale;
     - D_MOD_FIN_V_I – input-oriented model with variable return to scale;
     - D_MOD_FIN_C_O – output-oriented model with constant return to scale;
     - D_MOD_FIN_V_O – output-oriented model with variable return to scale;
- for the **parametric method of SFA**:
  a) *didactic* model_1 (S_MOD_DID_S), for which the number of students was assumed as an output;
  b) *didactic* model_2 (S_MOD_DID_A), for which the number of alumni was assumed as an output;
  c) *financial* model_3 (S_MOD_FIN), for which income from sales was assumed as an output.

The choice of variables for individual models and research methods is presented in Table 2.

Table 2. Input and output variables used in the research models

Vari-ables	DEA			SFA		
	didactic **model_1**	***didactic*** **model_2**	***financial*** **model_3**	***didactic*** **model_1**	***didactic*** **model_2**	***financial*** **model_3**
x1	+	+	+	+	+	+
x2	+	+	+	+	+	+
x3	+	+	+	+	+	+
x4	+	+	+	+	+	+
x5	+	+	+	+	+	+
x6	+	+	+	+	+	+
x7	+	+	+	+	+	+
x8	+	+	+	+	+	+
y1	+	-	-	+	-	-
y2	-	+	-	-	+	-
y3	-	-	+	-	-	+

Source: own elaboration.

Table 3. Statistical data of variables

	2009				2010				2011			
	Mean	**Minimum**	**Maximum**	**Std. dev.**	**Mean**	**Minimum**	**Maximum**	**Std. dev.**	**Mean**	**Minimum**	**Maximum**	**Std. dev.**
x1	2 213 633	240 109	8 604 597	2 027 972	2 397 917	467 039	8 604 597	1 956 648	2504423	432 497	8 602 111	1 895 020
x2	21 982 145	4 354 198	80 196 024	14 789 726	23 710 263	3 932 298	76 189 693	14 534 700	30870728	4 614 724	74 002 618	16 649 500
x3	622 232	93 149	2 542 915	536 139	722 997	78 060	2 778 023	663 464	916306	187 921	5 254 938	1 012 329
x4	917 696	127 064	9 317 473	1 741 799	1 069 327	142 226	11 310 834	2 122 135	986551	83 490	8 018 545	1 504 348
x5	1 108 784	399 753	2 039 043	419 928	1 263 703	491 912	2 203 498	459 737	1376233	423 139	3 516 348	640 206
x6	1 238 308	398 369	3 775 227	767 626	1 267 616	291 112	3 764 943	741 827	1305278	328 043	4 029 860	889 199
x7	27 553 272	5 641 729	381 060 650	70 867 428	15 022 203	6 301 331	28 562 562	6 089 848	15655879	6 934 420	29 079 120	6 243 697
x8	471 685	46 250	1 032 670	270 317	688 729	48 398	1 676 391	430 840	766561	30 267	1 984 260	553 805
y1	2 979	1 289	5 787	1 262	2 872	1 144	5 537	1 210	2698	1 003	5 004	1 160
y2	818	279	1 722	414	792	336	1 574	337	780	312	1 538	343
y3	15 063 128	1 247 807	31 933 503	8 772 199	17 429 620	1 858 436	35 884 020	8 910 644	17685518	2 198 060	35 799 103	9 097 670

Source: own elaboration.

RESULTS AND DISCUSSION

Efficiency of SHVS over the period 2009-2011

Calculation results are given in Table 4, Table 5 and Table 6. In 2009, the average efficiency ratio of the analysed schools of higher education, according to ***didactic* model_1**, for input- and output-oriented CRS, was equal to 91.6 %, for input-oriented VRS it stood at 95.42 %, for output-oriented VRS it was 96.41 %, while for SFA – 99.09%. In 2009, 16 efficient higher schools were recorded in accordance with the CRS approach (59.26% of the analysed sample), 21 efficient schools of higher education were recorded for the VRS approach (77.78 % of the analysed sample). These differences indicate that the inefficiency demonstrated by some of the schools, with the assumption of the same effects of scale (DMU02, DMU12, DMU21, DMU22, DMU24), results solely from their operating in a different scale of activity. It means that despite the fact that those organisations are shown as inefficient in the CRS method, they achieve full efficiency when all the effects of scale are taken into account; therefore, in their case it is not necessary to decrease inputs in order to obtain an optimal number of students. In the case of the SFA method, 15 SHVSs were above average (55.56 % of the analysed sample). In 2010, the average efficiency ratio for input- and output-oriented CRS was equal to 91.90 %, for input-oriented VRS it stood at 95.96 %, for output-oriented VRS it amounted to 96.14 %, while for SFA it was 74.97 %. In 2010, in line with the CRS approach, 13 efficient schools of higher education were recorded (48.15 % of the analysed sample), while in the VRS approach it was 19 efficient higher education institutions (70.37 % of the analysed sample). In the SFA method 16 SHVSs were above average (59.26 % of the analysed sample). In 2011, the average efficiency ratio in the *didactic* model_1 for input- and output-oriented CRS was equal to 95.47 %, for input-oriented VRS it was 98.86 %, for output-oriented VRS it stood at 97.76 %, while for SFA it amounted to 75.30 %. In 2011, 18 efficient higher education institutions were recorded in the CRS approach (66.67 % of the analysed sample), while in the VRS approach there were 24 efficient higher education institutions (88.89 % of the analysed sample). In the case of the SFA method, 16 SHVSs were above average (59.26 % of the analysed sample).

For ***didactic* model_2** in 2009, the average efficiency ratio for CRS was 92.03 %, for VRS it was 97.04 %, and for SFA it was 71 %. In 2009 in the CRS approach there were 19 efficient higher schools identified (70.37 % of the analysed sample), in the VRS approach 23 efficient higher education institutions were recognized (85.19 % of the analysed sample). In the SFA method 13 SHVSs that reached the efficiency level over the average were recorded (48.15 % of the analysed sample). In 2010, the average efficiency ratio in the CRS approach was 90.29 %, in the VRS input-oriented approach it was 95.58 %, in VRS output-oriented it was 94.24 %, and in SFA it was 69.68 %. In 2010 in the CRS approach 15 efficient higher education institutions were recognized (55.56 % of the analysed sample), in the VRS approach 20 effective higher schools were identified (74.07 % of the analysed sample). In the SFA method 16 SHVSs that reached the efficiency level over the average were recorded (59.26 % of the analysed sample). In 2011, the average efficiency ratio for CRS was 88.15 %, for the VRS input-oriented approach it was 93.37%, for the VRS output-oriented approach it was 92.94 %, and for SFA it was 99.07%. In 2011 in the CRS approach 13 efficient higher education institutions were recorded (48.15 % of the analysed sample), in VRS - 17 efficient higher schools (62.96 % of the analysed sample). In the SFA method 10 SHVSs

Table 4. SHVSs' efficiency in didactic model_1 (output: number of students)

DMU	2009					2010					2011				
	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model
01	0.62367	0.62522	0.62367	0.71029	0.99059	0.58741	0.59211	0.58741	0.68239	0.48188	0.73614	0.74056	0.73614	0.76702	0.48711
02	0.91373	1.00000	0.91373	1.00000	0.99064	1.00000	1.00000	1.00000	1.00000	0.27328	1.00000	1.00000	1.00000	1.00000	0.57235
03	1.00000	1.00000	1.00000	1.00000	0.99087	1.00000	1.00000	1.00000	1.00000	0.91895	1.00000	1.00000	1.00000	1.00000	0.75440
04	0.71271	0.71330	0.71271	0.77591	0.99088	0.98379	1.00000	0.98379	1.00000	0.82378	1.00000	1.00000	1.00000	1.00000	0.99323
05	1.00000	1.00000	1.00000	1.00000	0.99112	1.00000	1.00000	1.00000	1.00000	0.94570	0.87657	1.00000	0.87657	1.00000	0.99549
06	0.88287	0.92107	0.88287	0.93485	0.99069	0.92976	0.93029	0.92976	0.96128	0.71982	0.87833	1.00000	0.87833	1.00000	0.37625
07	0.66252	0.74577	0.66252	0.84363	0.99094	0.67121	0.91257	0.67121	0.97798	0.83590	0.83474	1.00000	0.83474	1.00000	0.80674
08	1.00000	1.00000	1.00000	1.00000	0.99122	1.00000	1.00000	1.00000	1.00000	0.99991	1.00000	1.00000	1.00000	1.00000	0.90896
09	1.00000	1.00000	1.00000	1.00000	0.99123	0.98433	1.00000	0.98433	1.00000	0.99992	1.00000	1.00000	1.00000	1.00000	0.99155
10	1.00000	1.00000	1.00000	1.00000	0.99090	1.00000	1.00000	1.00000	1.00000	0.99993	1.00000	1.00000	1.00000	1.00000	0.80837
11	0.99167	0.99556	0.99167	0.99605	0.99090	0.95747	0.95994	0.95747	0.95843	0.67517	1.00000	1.00000	1.00000	1.00000	0.87178
12	0.86206	1.00000	0.86206	1.00000	0.99064	0.88865	0.97866	0.88865	0.91698	0.78681	1.00000	1.00000	1.00000	1.00000	0.47598
13	1.00000	1.00000	1.00000	1.00000	0.99109	1.00000	1.00000	1.00000	1.00000	0.99986	1.00000	1.00000	1.00000	1.00000	0.99413
14	1.00000	1.00000	1.00000	1.00000	0.99114	1.00000	1.00000	1.00000	1.00000	0.70512	1.00000	1.00000	1.00000	1.00000	0.69226
15	1.00000	1.00000	1.00000	1.00000	0.99095	1.00000	1.00000	1.00000	1.00000	0.86902	1.00000	1.00000	1.00000	1.00000	0.99195
16	1.00000	1.00000	1.00000	1.00000	0.99047	1.00000	1.00000	1.00000	1.00000	0.39989	1.00000	1.00000	1.00000	1.00000	0.53639
17	0.73968	0.76187	0.73968	0.76937	0.99083	0.67485	0.79397	0.67485	0.89708	0.99982	0.96270	0.98643	0.96270	0.98825	0.56258
18	1.00000	1.00000	1.00000	1.00000	0.99091	0.96523	1.00000	0.96523	1.00000	0.93001	1.00000	1.00000	1.00000	1.00000	0.99660
19	1.00000	1.00000	1.00000	1.00000	0.99068	0.91814	1.00000	0.91814	1.00000	0.36509	0.92558	1.00000	0.92558	1.00000	0.77708
20	1.00000	1.00000	1.00000	1.00000	0.99095	1.00000	1.00000	1.00000	1.00000	0.99788	1.00000	1.00000	1.00000	1.00000	0.96386
21	0.58493	1.00000	0.58493	1.00000	0.99048	0.82098	1.00000	0.82098	1.00000	0.48644	0.97053	1.00000	0.97053	1.00000	0.37839
22	0.93420	1.00000	0.93420	1.00000	0.99082	0.74679	0.82145	0.74679	0.75260	0.52779	0.59374	0.96480	0.59374	0.64004	0.18424
23	1.00000	1.00000	1.00000	1.00000	0.99064	0.80593	0.91702	0.80593	0.81090	0.61921	0.99982	1.00000	0.99982	1.00000	0.63492
24	0.82587	1.00000	0.82587	1.00000	0.99067	0.87971	1.00000	0.87971	1.00000	0.49680	1.00000	1.00000	1.00000	1.00000	0.87959
25	1.00000	1.00000	1.00000	1.00000	0.99103	1.00000	1.00000	1.00000	1.00000	0.99993	1.00000	1.00000	1.00000	1.00000	0.97238
26	1.00000	1.00000	1.00000	1.00000	0.99096	1.00000	1.00000	1.00000	1.00000	0.91606	1.00000	1.00000	1.00000	1.00000	0.94461
27	1.00000	1.00000	1.00000	1.00000	0.99076	1.00000	1.00000	1.00000	1.00000	0.46867	1.00000	1.00000	1.00000	1.00000	0.77883

Source: own elaboration.

Table 5. SHVSs' efficiency in didactic model_2 (output: number of alumni)

DMU	2009					2010					2011				
	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model
01	0.38989	0.53920	0.38989	0.53920	0.23289	0.43280	0.53636	0.43280	0.48427	0.36067	0.40909	0.54525	0.40909	0.45467	0.99054
02	0.86446	1.00000	0.86446	1.00000	0.72901	1.00000	1.00000	1.00000	1.00000	0.28185	1.00000	1.00000	1.00000	1.00000	0.99059
03	0.96872	0.97667	0.96872	0.97667	0.75128	0.67583	0.71975	0.67583	0.69419	0.56510	0.63104	0.63812	0.63104	0.69782	0.99063
04	1.00000	1.00000	1.00000	1.00000	0.69285	0.93104	0.96417	0.93104	0.96882	0.73909	0.97196	1.00000	0.97196	1.00000	0.99079
05	0.96166	1.00000	0.96166	1.00000	0.96250	0.94756	0.94940	0.94756	0.95014	0.69421	0.62910	0.63248	0.62910	0.76786	0.99098
06	1.00000	1.00000	1.00000	1.00000	0.67997	1.00000	1.00000	1.00000	1.00000	0.99979	0.90323	1.00000	0.90323	1.00000	0.99054
07	1.00000	1.00000	1.00000	1.00000	0.97302	0.78641	1.00000	0.78641	1.00000	0.80565	0.74536	0.80852	0.74536	0.93809	0.99072
08	1.00000	1.00000	1.00000	1.00000	0.85339	1.00000	1.00000	1.00000	1.00000	0.98033	1.00000	1.00000	1.00000	1.00000	0.99103
09	1.00000	1.00000	1.00000	1.00000	0.99988	0.93329	1.00000	0.93329	1.00000	0.95497	1.00000	1.00000	1.00000	1.00000	0.99085
10	1.00000	1.00000	1.00000	1.00000	0.69117	1.00000	1.00000	1.00000	1.00000	0.99620	1.00000	1.00000	1.00000	1.00000	0.99083
11	1.00000	1.00000	1.00000	1.00000	0.99991	1.00000	1.00000	1.00000	1.00000	0.86704	1.00000	1.00000	1.00000	1.00000	0.99073
12	0.47847	0.92292	0.47847	0.92292	0.31688	0.70353	0.95998	0.70353	0.71383	0.44878	0.91100	0.98749	0.91100	0.97649	0.99045
13	1.00000	1.00000	1.00000	1.00000	0.99985	1.00000	1.00000	1.00000	1.00000	0.86243	1.00000	1.00000	1.00000	1.00000	0.99108
14	1.00000	1.00000	1.00000	1.00000	0.90306	1.00000	1.00000	1.00000	1.00000	0.73945	1.00000	1.00000	1.00000	1.00000	0.99095
15	1.00000	1.00000	1.00000	1.00000	0.99850	1.00000	1.00000	1.00000	1.00000	0.99567	1.00000	1.00000	1.00000	1.00000	0.99088
16	1.00000	1.00000	1.00000	1.00000	0.46733	1.00000	1.00000	1.00000	1.00000	0.44654	1.00000	1.00000	1.00000	1.00000	0.99063
17	0.75908	0.76272	0.75908	0.76272	0.90119	0.73719	0.75976	0.73719	0.82889	0.86060	0.91547	0.96458	0.91547	0.97603	0.99087
18	1.00000	1.00000	1.00000	1.00000	0.57364	1.00000	1.00000	1.00000	1.00000	0.85585	0.98858	0.98961	0.98858	0.99011	0.99089
19	1.00000	1.00000	1.00000	1.00000	0.57395	0.76269	1.00000	0.76269	1.00000	0.32290	0.66818	1.00000	0.66818	1.00000	0.99039
20	1.00000	1.00000	1.00000	1.00000	0.75042	1.00000	1.00000	1.00000	1.00000	0.99077	1.00000	1.00000	1.00000	1.00000	0.99120
21	0.68647	1.00000	0.68647	1.00000	0.30458	0.78474	1.00000	0.78474	1.00000	0.34473	0.83861	1.00000	0.83861	1.00000	0.99047
22	1.00000	1.00000	1.00000	1.00000	0.61618	1.00000	1.00000	1.00000	1.00000	0.57296	0.87744	0.98600	0.87744	0.97008	0.99061
23	1.00000	1.00000	1.00000	1.00000	0.59816	0.79201	0.91702	0.79201	0.80397	0.49686	0.48934	0.81916	0.48934	0.49720	0.99039
24	1.00000	1.00000	1.00000	1.00000	0.50743	1.00000	1.00000	1.00000	1.00000	0.49792	1.00000	1.00000	1.00000	1.00000	0.99082
25	1.00000	1.00000	1.00000	1.00000	0.63427	1.00000	1.00000	1.00000	1.00000	0.99630	1.00000	1.00000	1.00000	1.00000	0.99114
26	1.00000	1.00000	1.00000	1.00000	0.82322	1.00000	1.00000	1.00000	1.00000	0.74878	0.82222	0.83872	0.82222	0.82655	0.99064
27	0.73861	1.00000	0.73861	1.00000	0.63675	0.89101	1.00000	0.89101	1.00000	0.38899	1.00000	1.00000	1.00000	1.00000	0.99058

Source: own elaboration.

Table 6. SHVSs' efficiency in financial model_3 (output: income from sales)

DMU	2009					2010					2011				
	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model	DEA input-oriented model CRS	DEA input-oriented model VRS	DEA output-oriented model CRS	DEA output-oriented model VRS	SFA model
01	0.05707	0.53920	0.05707	0.06030	0.02816	0.07589	0.51683	0.07589	0.08547	0.07388	0.09248	0.54525	0.09248	0.09655	0.04771
02	1.00000	1.00000	1.00000	1.00000	0.40439	1.00000	1.00000	1.00000	1.00000	0.32581	1.00000	1.00000	1.00000	1.00000	0.53710
03	1.00000	1.00000	1.00000	1.00000	0.99366	1.00000	1.00000	1.00000	1.00000	0.47155	1.00000	1.00000	1.00000	1.00000	0.60945
04	0.22833	0.32708	0.22833	0.24582	0.28667	0.28637	0.52517	0.28637	0.30245	0.44010	0.32602	0.49216	0.32602	0.33461	0.37851
05	1.00000	1.00000	1.00000	1.00000	0.86698	1.00000	1.00000	1.00000	1.00000	0.99040	0.93795	1.00000	0.93795	1.00000	0.96346
06	0.21541	0.53768	0.21541	0.24133	0.13644	0.25080	0.63165	0.25080	0.32091	0.22812	0.21668	0.55685	0.21668	0.29848	0.10706
07	0.91437	1.00000	0.91437	1.00000	0.75837	0.87513	1.00000	0.87513	1.00000	0.99974	0.89213	1.00000	0.89213	1.00000	0.90822
08	1.00000	1.00000	1.00000	1.00000	0.93096	1.00000	1.00000	1.00000	1.00000	0.96944	1.00000	1.00000	1.00000	1.00000	0.98862
09	1.00000	1.00000	1.00000	1.00000	0.70103	1.00000	1.00000	1.00000	1.00000	0.97487	1.00000	1.00000	1.00000	1.00000	0.85933
10	1.00000	1.00000	1.00000	1.00000	0.84765	1.00000	1.00000	1.00000	1.00000	0.93213	1.00000	1.00000	1.00000	1.00000	0.98506
11	1.00000	1.00000	1.00000	1.00000	0.99773	1.00000	1.00000	1.00000	1.00000	0.53973	1.00000	1.00000	1.00000	1.00000	0.82422
12	0.14193	0.92292	0.14193	0.14655	0.05781	0.71117	0.95872	0.71117	0.77707	0.45147	0.88531	0.95589	0.88531	0.93123	0.31988
13	1.00000	1.00000	1.00000	1.00000	0.72896	1.00000	1.00000	1.00000	1.00000	0.82436	1.00000	1.00000	1.00000	1.00000	0.99873
14	1.00000	1.00000	1.00000	1.00000	0.54503	1.00000	1.00000	1.00000	1.00000	0.36524	1.00000	1.00000	1.00000	1.00000	0.51243
15	1.00000	1.00000	1.00000	1.00000	0.79871	1.00000	1.00000	1.00000	1.00000	0.46978	1.00000	1.00000	1.00000	1.00000	0.94754
16	1.00000	1.00000	1.00000	1.00000	0.51596	1.00000	1.00000	1.00000	1.00000	0.31504	1.00000	1.00000	1.00000	1.00000	0.38162
17	0.22388	0.52357	0.22388	0.22994	0.16816	0.77260	0.98113	0.77260	0.98927	0.74538	0.94115	0.98197	0.94115	0.98772	0.52565
18	1.00000	1.00000	1.00000	1.00000	0.75080	1.00000	1.00000	1.00000	1.00000	0.53012	1.00000	1.00000	1.00000	1.00000	0.87660
19	1.00000	1.00000	1.00000	1.00000	0.29971	0.96265	1.00000	0.96265	1.00000	0.40313	0.94129	1.00000	0.94129	1.00000	0.78808
20	1.00000	1.00000	1.00000	1.00000	0.99951	1.00000	1.00000	1.00000	1.00000	0.92374	1.00000	1.00000	1.00000	1.00000	0.99954
21	0.95096	1.00000	0.95096	1.00000	0.41915	1.00000	1.00000	1.00000	1.00000	0.67337	1.00000	1.00000	1.00000	1.00000	0.36758
22	1.00000	1.00000	1.00000	1.00000	0.57695	0.98105	0.98790	0.98105	0.98763	0.95741	0.96402	0.99606	0.96402	0.99275	0.37118
23	1.00000	1.00000	1.00000	1.00000	0.36142	0.81978	0.91702	0.81978	0.82224	0.40734	1.00000	1.00000	1.00000	1.00000	0.48106
24	1.00000	1.00000	1.00000	1.00000	0.37378	1.00000	1.00000	1.00000	1.00000	0.88792	1.00000	1.00000	1.00000	1.00000	0.99714
25	0.24924	0.43207	0.24924	0.26776	0.22255	1.00000	1.00000	1.00000	1.00000	0.97794	1.00000	1.00000	1.00000	1.00000	0.86660
26	1.00000	1.00000	1.00000	1.00000	0.51281	1.00000	1.00000	1.00000	1.00000	0.82430	1.00000	1.00000	1.00000	1.00000	0.56593
27	1.00000	1.00000	1.00000	1.00000	0.33131	1.00000	1.00000	1.00000	1.00000	0.19220	1.00000	1.00000	1.00000	1.00000	0.66793

Source: own elaboration.

were recognized (37.04 % of the analysed sample) with efficiency result over the average level.

In ***financial*** **model_3** in 2009 the average efficiency ratio for CRS was 81.41 %, for the VRS input-oriented approach it was 89.94 %, for the VRS output-oriented approach it was 82.19 %, and for SFA it was 54.13 %. In 2009 in the CRS input-oriented approach 19 efficient higher education institutions were recorded (70.37 % of the analysed sample), in the CRS output-oriented approach 21 efficient higher schools were identified (77.78 % of the analysed sample), in VRS 21 efficient DMUs were recognized (77.78 % of the analysed sample). In the SFA approach 13 SHVSs were recorded (48.15 % of the analysed sample) that reached the efficiency results over the average efficiency level. In 2010 the average efficiency ratio for CRS was 87.91 %, for the VRS input-oriented approach it was 94.51 %, for the VRS output-oriented approach it was 89.94 %, and for SFA it was 62.57 %. In 2010 in the CRS approach 18 efficient higher schools were recorded (66.67% of the analysed sample), in the VRS approach 20 efficient DMUs were recorded (74.07 % of the analysed sample). In the case of the SFA method, 13 SHVSs were above average (48.15 % of the analysed sample). In 2011, the average efficiency ratio in the financial model_3 for input- and output-oriented CRS was equal to 89.62 %, for input-oriented VRS it was 94.55 %, for output-oriented VRS it stood at 91.26 %, while for SFA it amounted to 66.21 %. In 2011, 18 efficient higher education institutions were recorded in the CRS approach (66.67 % of the analysed sample), while in the VRS approach there were 21 efficient higher education institutions (77.78 % of the analysed sample). In the case of the SFA method, 16 SHVSs were above average (59.26 % of the analysed sample).

CONCLUSIONS

When analysing the obtained results, it can be concluded that:

- SHVSs show high technical efficiency. For the didactic model_1 in the examined period, the average CRS efficiency oscillated from 91.61 % to 95.47 %, for VRS from 95.96 % to 98.86 %, while for SFA from 74.97 % to 99.09 %. For the didactic model_2 in the examined period, the average CRS efficiency oscillated from 88.15% to 92.03 %, for VRS from 92.94 % to 97.04 %, while for SFA from 69.68 % to 71.00%. In the financial model_3 in the examined period, the average CRS efficiency was ranging from 81.41 % to 89.62 %, for VRS from 82.19 % to 94.55 %, while for SFA from 54.13 % to 66.21 %. Therefore, the lowest average efficiency of a higher education institution can be observed in the financial model, and in particular in the output-oriented VRS model (thus, an area that particularly requires efficiency improvement would entail activities related to the increase in income on sales of inefficient DMUs, while maintaining previously assumed input levels);
- in most cases the DEA and SFA methods provide concurrent results of analyses (i.e. high and low results obtained with the DEA method reflected high and low results calculated with the SFA method);

- some DMUs examined with the DEA method achieve full efficiency once a variable return to scale (VRS) model is applied – the constant return to the scale model (VRS/CRS) did not show a given unit as efficient[5];
- the majority of DMUs, found as inefficient in the analysis conducted with the DEA method with constant returns to scale (CRS) models, are found to be efficient in variable returns to scale (VRS) models, and demonstrate a relatively lower efficiency when calculated with the SFA method;
- moreover, substantial differences were found in the efficiency assessment with the DEA and SFA methods for DMU27. DEA mostly classifies this unit as efficient, whereas its efficiency calculated with the SFA method places it below average;
- DMU1 demonstrated the lowest efficiency in all models and in both methods;
- DMU20 demonstrated the highest efficiency in all models and in both methods.

The analysis results evidence high sensitivity of the models, which is a consequence of the selection of explained and explanatory variables.

It needs to be noted that in the case of higher education institutions it seems justified to apply models of variable returns to scale. It enables to identify the units that despite operating in a different scale (e.g. possessing fixed assets of relatively lower value, incurring lower remuneration costs or serving a smaller number of students) are fully efficient. In the case of a higher education institution, the size and scale of operations may have a significant impact on the efficiency of the conducted activity.

It was not the authors' intention to create a ranking of better and worse SHVSs, but to measure their efficiency, indicating areas for improvement.

This paper does not exhaust the subject and it provides a start to the authors' future deliberations.

The limitation for the presented study is a relatively short period of analysis which is caused by the limited accessibility to data published in governmental financial reports (Monitor B) that were obligatory only until the year 2011. However, the continuous and longitudinal study in this area will be required because of the demographic changes occurring in Poland in recent years (especially the decreasing number of students in Polish universities). Moreover, the comparative analysis of the efficiency of public and non-public Polish educational institutions is the promising area for future research.

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Trends in the International Academic Migration: A Case of Spain

Antonio Mihi-Ramírez

ABSTRACT

Objective: The objective of this paper is to analyse how undergraduate students' mobility has changed after the last economics recession.

Research Design & Methods: The study takes into account the latest data with respect to public and private Universities that are subject of Spanish higher education system, comparing it at international level in order to find the problems and challenges of recent post-recession years.

Findings: The results showed significant imbalances in mobile students' trends by home and host region, especially after a deep restructuration of the Spanish higher education system in response to the last crisis. In particular there are substantial differences in tuition fees, scholarships, number of teachers and their skills according to the region and type of university. Consequently, international inflows and international study programs and agreements became very important for academics institutions, students and scholars.

Implications & Recommendations: Given the growing number of students who study abroad, after the economic collapse of 2008, there is an opportunity among higher income host countries for enhanced recruitment opportunities of highly skilled workers. Therefore, adaptation of the academic offer to the language, needs and diversity of mobile students, can further increase their number. Also, increasing the number of highly skilled teachers can further attract mobile students, while improving the quality of higher education system.

Contribution & Value Added: This research provides valuable information to understand current problems, challenges, changes and opportunities concerning higher education mobility, as shown in the analysis of the case of Spain and through international comparisons.

Article type: research paper
Keywords: mobile students; migration; academic migration; higher education
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INTRODUCTION

Contemporarily higher youth unemployment affects students' expectations and makes the competition in the labour market fierce (Li & Lowe, 2016). It has become vital to take advantage of the boundaries of international mobility in order to improve students' skills enhancing their future labour opportunities (Heid & Larch, 2012; Balasooriya et al.).

Moreover, a substantial number of transformations and important facts take place in universities. These include the education systems' convergence under the European space of Higher Education and those changes in the economic conditions that anticipate severe complications and restrictions under the economic downturn that can occur in the future.

Hence there is a growing number of universities' initiatives, agencies, scientific and academic institutes to support the international students' mobility (Gao, 2014). It is important to understand how the current situation affects the international mobility in the higher education system. Therefore this research focuses on the analysis of international mobility in the higher education with the purpose to serve as the basis for further reflections, international comparisons and studies.

In particular, the study of mobile undergraduate students in Spain makes it easier to understand new challenges and problems of student' inflows after the economics collapse, especially in the case of Spain. Thus, this article examines recent data with respect to public and private universities of Spain and makes comparisons at an international level. It includes: mobile students' trends by home and host region in the recent years; a detailed information about the Spanish higher education system and its restructuration after the crisis; international inflows' features and international programmes; and an analysis of specific problems due to the crisis such as the important changes in tuition fees, scholarships, teachers' skills and their reductions.

LITERATURE REVIEW

The Students´ International Mobility

International education is an investment that permits to obtain future potential earnings and better labour opportunities, especially in the case of higher education (Thurow, 1970; Becker, 1971; Mixon, 1992).

The trends of students' migration reflect improving students' benefits showing that they have increased in the last years (Blachford & Zhang, 2014; Gao, 2014). The data presented in the table 1 illustrates that students' mobility constitutes a world-wide phenomenon.

In the case of Europe, there is a growing number of inbound mobile students. According to OECD (2014) the number of mobile students increased from 980 883 in 2000 to 2 160 874 in 2012. These days Europe has become main destination for tertiary mobile students hosting 48% of their total number, followed by North America, with 21% and Asia with 18% respectively (OECD, 2014). However, there are many differences among regions and countries because of their socio-economic conditions which have substantially changed, especially due to the alteration of economic factors after the crisis of 2008. Thus, taking into account the average number of inbound mobile students by region (see table

1) we can observe that there is a considerable difference between Western Europe and North America (almost 6%) and Central and Eastern Europe (2.01).

Table 1. The students´ mobility rate by world regions in 2012

Regional Averages	Inbound mobile students rate (%)	Outbound mobile students rate (%)
World	2.04	1.8
Arab States	2.89	3.5
Central and Eastern Europe	2.01	2.0
Central Asia	1.95	7.5
East Asia and the Pacific	1.34	2.0
Latin America and the Caribbean	1.80	0.9
North America and Western Europe	5.86	1.6
South and West Asia	0.10	1.0
Sub-Saharan Africa	3.00	4.5

Source: UNESCO (2014).

These imbalances can be explained in terms of economic and non-economic reasons (OECD, 2014; Mihi-Ramírez & Kumpikaitė, 2013). Whereas the earlier are the expectations of better future salaries and job opportunities; tuition fees; specific policies encouraging and supporting students' mobility; a reduction of transportation costs and the internationalization of labour markets for highly skilled people.

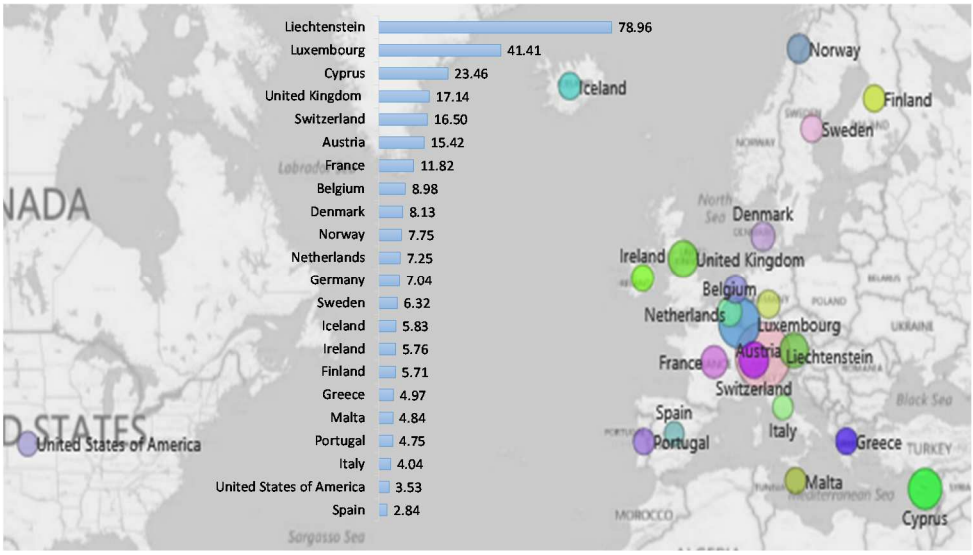

Figure 1. The Inbound mobility rate (%) in North America and Western Europe in 2012
Source: OECD (2014).

The latter can be attributed to the perceived value of studying abroad; the academic offer; culture and languages similarities; government efforts to support students in tar-

geted specific areas that are growing rapidly in origin countries; immigration policies; a significant increase in global access to tertiary education; and particular countries marketing efforts to attract students from outside.

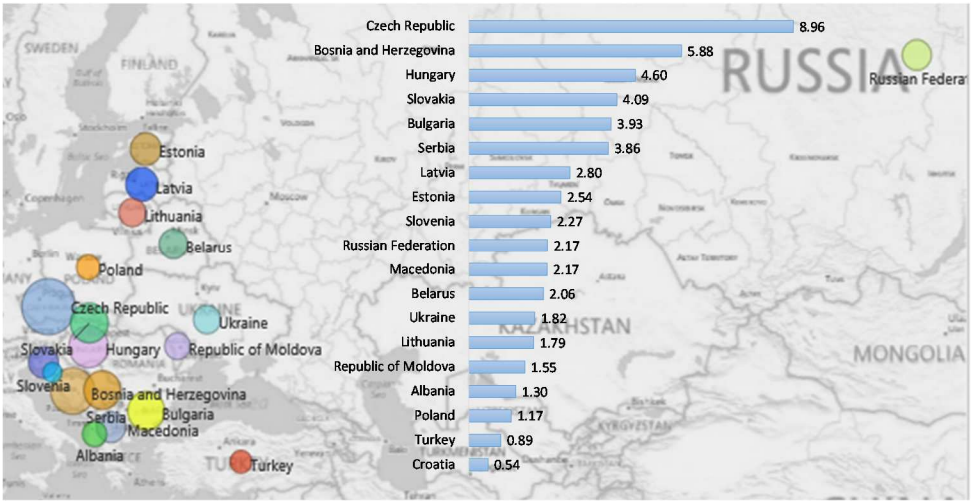

Figure 2. The Inbound mobility rate (%) in Central and Eastern Europe in 2012
Source: OECD (2014).

Figures 1 and 2 show the inbound mobile students (by host country) in the regions of Western Europe, North America and Central and Eastern Europe.

European Union (EU) has the major proportion (39%) of foreign students (OECD, 2014) in the world, with 74% of mobile students that come from other European countries, subject of EU integration policies. Countries with higher GDP per capita are generally perceived as good destinations where salaries and labor options are higher (Mihi-Ramírez and Kumpikaitė, 2013), especially when labor market opportunities are limited in home countries.

Regarding tuition fees they depend on national policies, however the most recent economic conditions yet add to their increase and in the same time the number of scholarships and grants has dicreased, since education budgets have been reduced considerably. Yet, there are different education policies in each country, and some of them even have increased education budgets (OECD, 2014).

Among non-economic reasons, mobile students enroll in diverse programmes and their decisions are influenced by the lack of appropriate studies in their native countries (OECD, 2014). Furthermore, mobile students intend to study abroad in order to improve their English skills, therefore those destinations where the English language prevalence attracts considerably higher number of mobile students, with exceptions such as Japan and countries where the language of instruction is widely spoken i.e. French, German, Russian and Spanish.

The number of international students depend on country' internationalization strategy. Thus countries that use marketing campaigns to attract students have increased their

number of mobile students. Countries that have a more local and university-driven approach, like the United States, have decreased their number mobile students.

MATERIAL AND METHODS

Students International Mobility. The Case of Spain

To better understand how differences between countries affect students' migration, this study addresses the changes in the students´ mobility toward the Spanish higher education system in the last years. Spain has a well-structured education system which is established in 82 Universities distributed among 19 regions (Figure 3)[1], with the average number of 19000 college students corresponding to one University (Ministry of Education of Spain, 2014).

Spain is subjected to a severe restrictions due to the crisis while it is simultaneously adapting itself to the European space of higher education.

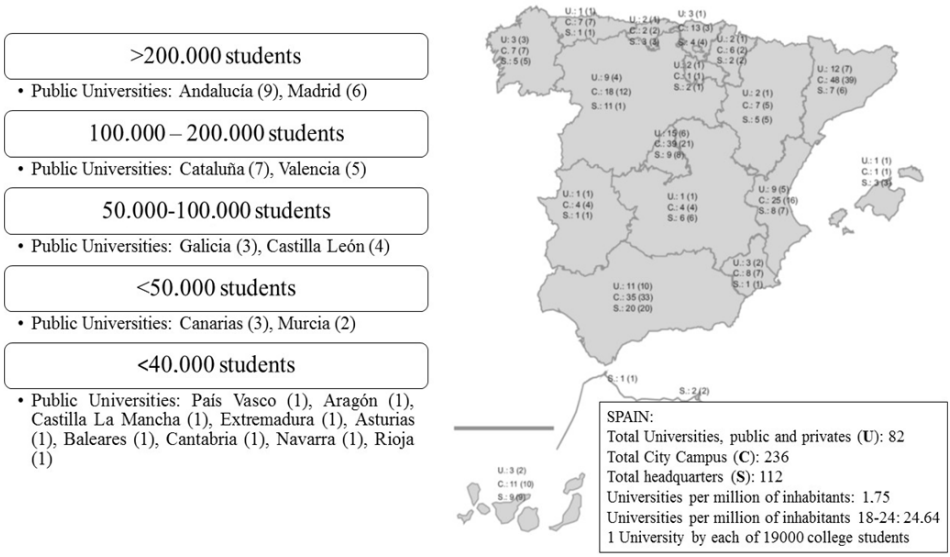

Figure 3. The Universities in Spain in 2014
Source: Ministry of Education of Spain (2014).

Better Opportunities, More Competition, More Mobile Students

An increased student migration flow to Spain started yet in the 1980s and to a certain extent it can be linked to the cooperation with some countries of Latin-America and Europe (Rey & Cebrán, 2010). Since then it has been progressively expanding and growing.

[1]Regions of Spain: Andalucía, Aragón, Asturias, Baleares, Canarias, Cantabria, Castilla - La Mancha, Castilla y León, Cataluña, Comunidad Valenciana, Extremadura, Galicia, Madrid, Murcia, Navarra, País Vasco, Rioja, Ceuta and Melilla.

Figure 4 and 5 presents the origins of students who have travelled to Spain from 2011 to 2014

In general, in spite of the current economic crisis, the number of students from abroad has increased in the last years (Balasooriya et al., 2014; Li & Lowe, 2016). On one

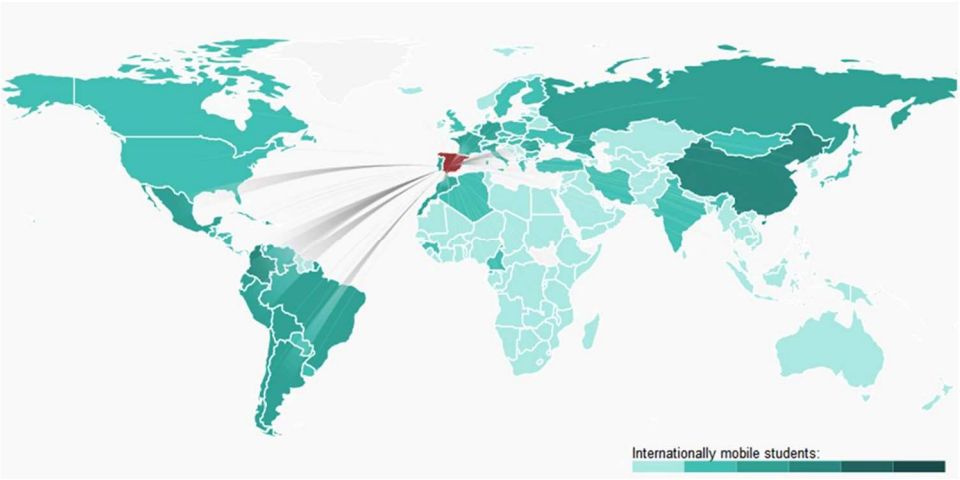

Figure 4. Students´ migration to Spain in 2014
Source: UNESCO (2014).

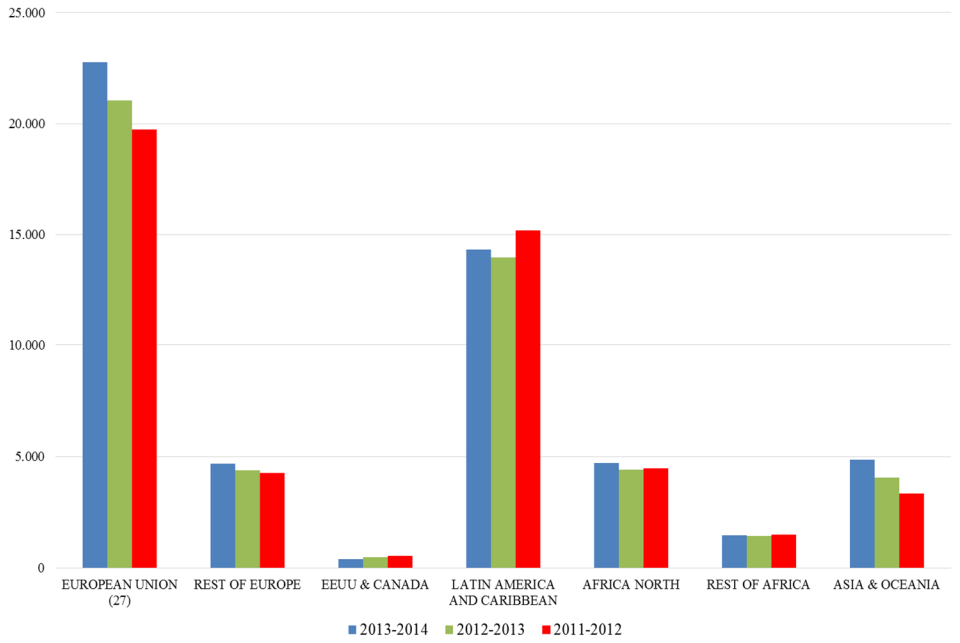

Figure 5. Mobile students in Spain by home regions in the last recent years
Source: Adapted from the Ministry of Education of Spain (2014).

hand, intensive labour competition forces migration (the inflow) of more skilled workers, and international education leads toward a better differentiation of potential job´s candidates (Blachford & Zhang, 2014). Moreover, it can imply better positions and higher wages in the future (Becker, 1971). In this regard, the annual world report about salaries published by the International Institute for Labour Studies (IILS) has showed that the labour income share for low skilled workers fell by 12 percentage points between the early 1980s and 2005, whereas for highly skilled workers it increased by 7 percent (IILS, 2011, p. 43). Moreover, a similar tendency was reflected in the Organization for Economic Co-operation and Development (OECD) 2012 annual report showing labour conditions in 13 countries analyzed.

On the other hand, as we can observe in figure 6, a higher education level is linked to a lower unemployment level. For instance, in the case of Spain, which is undergoing a severe recession with one of the highest unemployment of European Union, the unemployment rate of workers with advanced education was always been the lowest, even during the last years. Therefore, the opportunity of improve the level of students´ education can be considered as a push factor that forces students to make decisions about continuation of their studies in other countries (Čiarnienė & Kumpikaitė, 2011).

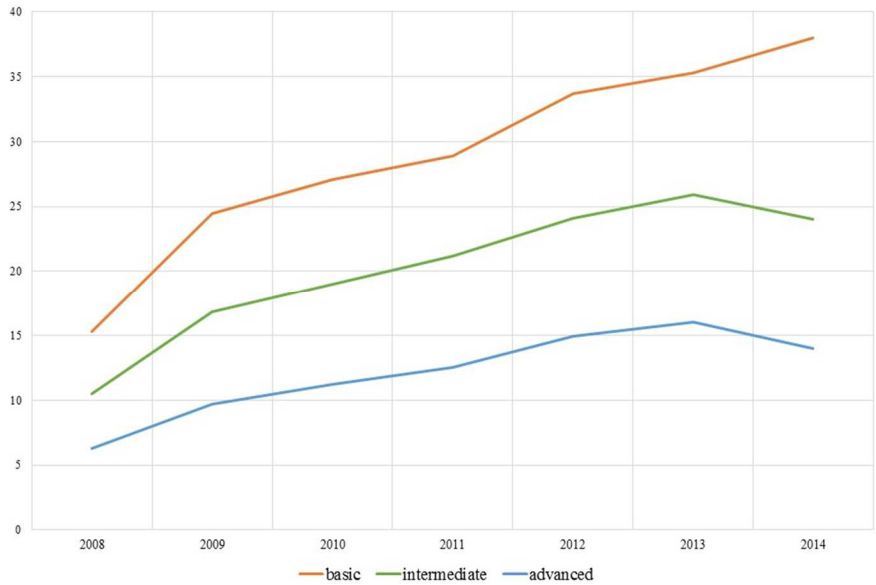

Figure 6. Unemployment rate (in %) by educational attainment in Spain in the last recent years
Source: Adapted from Ilostat and the Institute of Statistics of Spain (2014).

RESULTS AND DISCUSSION

More Mobile Students, But With Differences

The number of mobile students in Spain has increased in the analysed period. It is an opportunity for universities as they can compensate part of their revenues reduction (Hawtorhne, 2010) especially in Spain where the revenues have decreased substantially due to

economics and demographics reasons. But also, it is an opportunity to increase the recruitment of top skilled workers from abroad, improving the attractiveness and competitiveness in the international framework (Marginson & Considine, 2000).

With regard to the latter, from the 1900s Spain started several initiatives in order to facilitate the inflow of mobile students. There are many bilateral agreements with third countries which facilitate students' mobility and scientific cooperation. Moreover, universities also arrange agreements with universities and scientific institutions from abroad. Within the European Union, numerous programmes have also been established, such as Erasmus Mundus.

According to Eurostat (2013), in 2008 undergraduate mobile students[2] represented 2.14% of total students in Spain, and in 2012 yet 2.84%, meaning a growth of 0.7% in the referenced period. Furthermore, Spanish students going abroad accounted for 0.57% of the total number of mobile students in 2008 and 0.86% in 2012 (0.29% growth), respectively. Compared with European Union (EU), mobile students that came from abroad counted 10.43% in 2012 (1.35% in 2008), and those going abroad were 8.07% (4.37% growth in 2008). Another important issue is that according to the annual report of Education released by OECD "Australia, Canada, France, Germany, the United Kingdom and the United States together received more than 50% of all foreign students worldwide" (OECD, 2014, p. 345).

In addition, several imbalances in the Erasmus programme were also observed (Figure 7). The number of Erasmus students in the field of Arts and Humanities was bigger when it comes to mobile students in Spain, which is contrary to the field of Engineering and Architecture, where the Spaniards going abroad represented a higher percentage (Michavila, 2013).

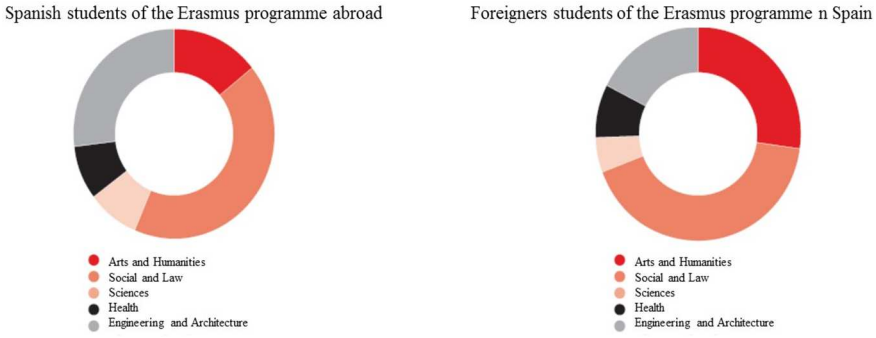

Figure 7. Erasmus students by fields of study in Spain 2013 (in %)
Source: Foundation for Knowledge and Development, CYD annual report, 2013.

In the case of public universities mobile students are predominantly concentrated in four regions, namely: Madrid, Cataluña, Andalucía and Valencia; and regarding private Universities: in Madrid and Cataluña (Figure 8). These regions concentrate the largest number of Universities and faculties in Spain (Figure 3 and Figure 9).

[2]Mobile students: "who have crossed a national border and moved to another country with the objective to studying" (Eurostat, 2013, p. 40).

A significant proportion of mobile students come from European, Latin America and Caribbean countries.

The general tendency is that mobile and domestic students enrol in public

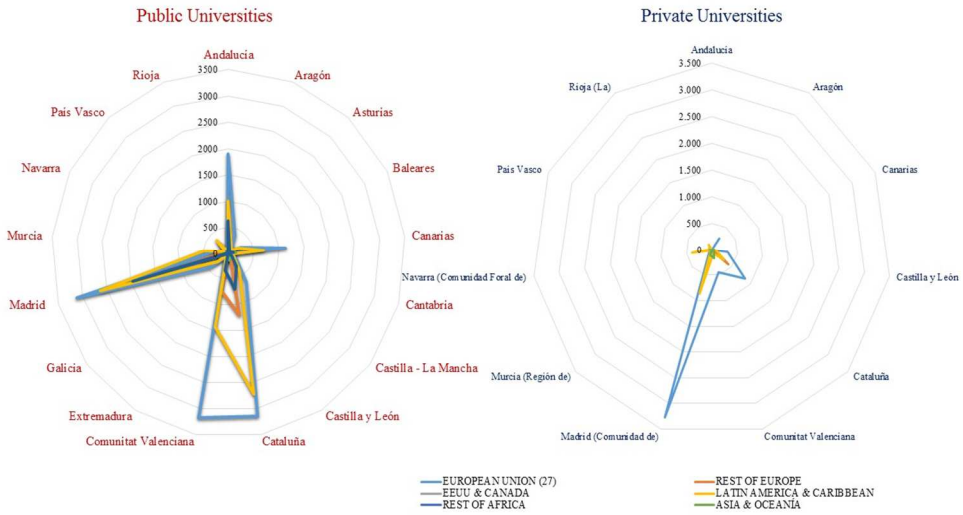

Figure 8. Mobile students in Spain by home and host region and type of University in Spain 2014
Source: Adapted from the Ministry of Education of Spain (2014).

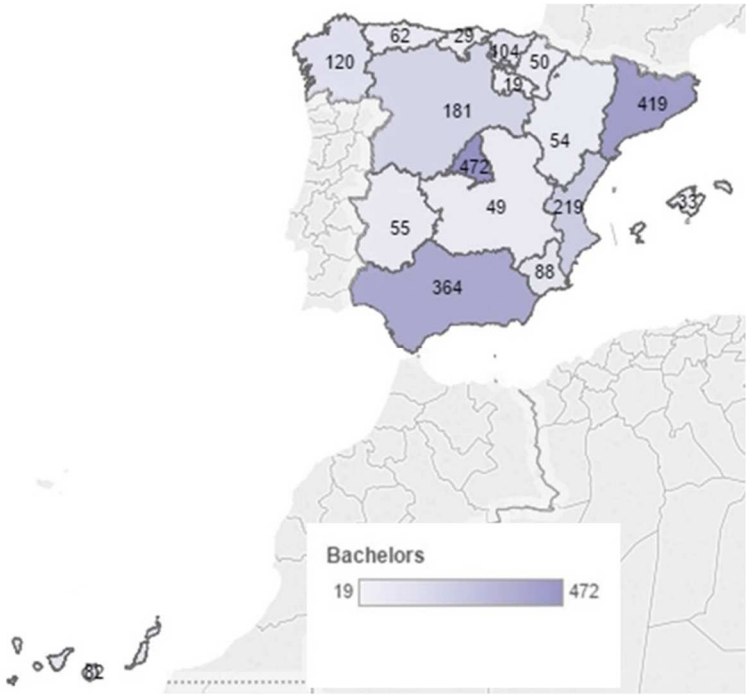

Figure 9. Bachelor Degrees by Spanish region in Spain 2014
Source: Adapted from the Ministry of Education of Spain (2014).

Universities. According to the Ministry of Education in Spain the latter represented in 2015 approximately 87.2 % of all enrolments (and 3.67% constituted mobile students) and 79.4% of bachelor degrees.

However, the number of private Universities has increased in the last years. In 2001 there were 50 public Universities and only 15 privates, and in 2014 it was still 50 public (and 1 on-line) and yet 32 privates (5 were Universities operating on-line), respectively. Private Universities account for 40% of Universities and 20.6% of bachelor degrees (Figure 9), totalling 12.8% of all students (4.07% of them were mobile students). Figure 10 shows the distribution of mobile students by regions and the type of University: public and private.

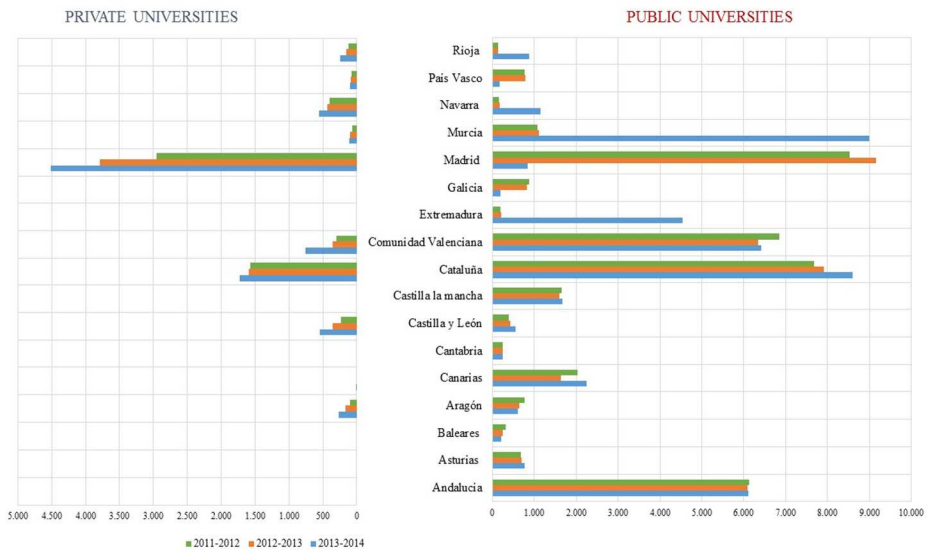

Figure 10. Evolution of mobile students in Spain by type of University and regions in the years 2011-2014

Source: Adapted from the Ministry of Education of Spain (2014).

More Changes, More Challenges

As stated in the OECD´s Education Report (2014), some of the reasons influencing mobile students´ decisions concerning destination choices are: language of instruction, quality of programmes, tuition fees and immigration policies.

The Spanish language prevalence is typical for Spain, though the number of institutions that offer programmes in English is growing, which can be attributed to rising international demand (40% of world mobile students enrolled in English-speaking programmes between 2000 and 2012).

Concerning the quality of academic institutions, it is not clear the influence of international educational rankings on the mobile students' pattern, nevertheless these rankings receive ~~a~~ growing attention which is the way to improve the quality of educational institutions.

Concerning the tuition fees, mobile students receive the same conditions as domestic students in most European countries (OECD, 2014). Under Bologna plan, degrees are generally structured as follows: 3 years + 2 years (Bachelor + Master). Regarding Spain (as of 2006) it is 4 + 1 (Bachelor + Master) (Michavila, 2013), but additionally from 2015 the system 3 +2 years is elective for each region. In public universities students are obliged to pay around 20% of total costs, except the students with scholarship who are exempt from incurring any costs.

In Spain the academic year 2009-2010 (Figure 11) brought a substantial change in the field of tuition fees. The more intensive effects of the recession implied a severe deterioration of economic factors, and simultaneously the strongest restrictive policies were applied deeply diminishing the education budget and expenditures (Michavila, 2012). It implied a strong increase of fees for all academic services and studies at all levels. From that moment on mobile students from countries that do not have education agreement with Spain must pay 100% of tuition fees in public Universities.

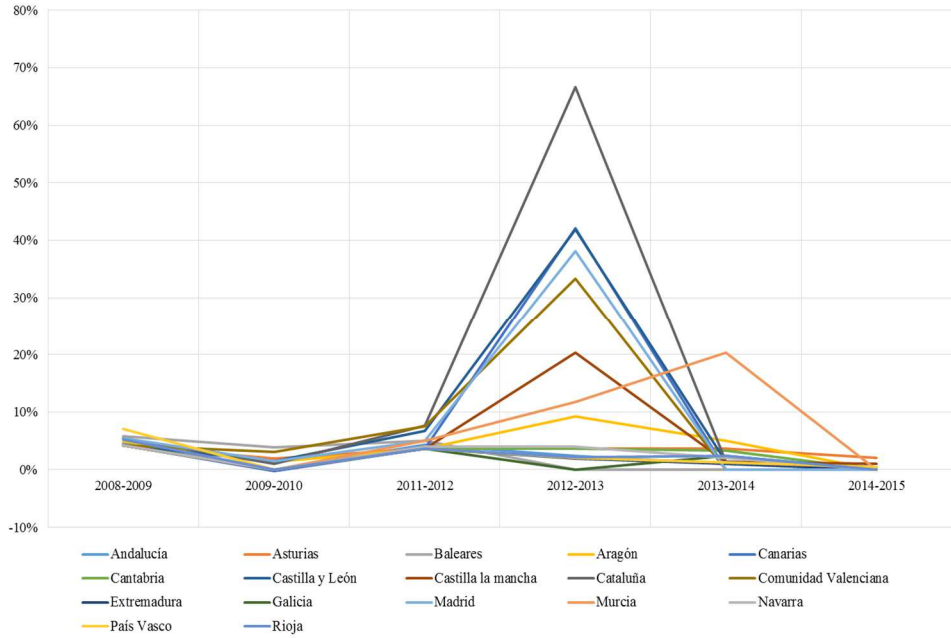

Figure 11. Annual variation rate of bachelor tuition fees in public Universities by Spanish regions in the years 2008-2015

Source: Adapted from the Ministry of Education of Spain (2014).

Moreover, there is a considerable dispersion of tuition fees among regions, Universities and in the field of studies, which constitutes an important change, particularly from 2010. For instance, when it comes to bachelor degrees it ranged from 11.89 EUR and 33.52 EUR per ECTS credit for public Universities (a regular course averaged 60 credits) in the period 2013-2014 (Ministry of Education of Spain, 2015). In turn, in the case of private universities, an average price is even more complicated to calculate due to the lack of data

and substantial imbalances between different universities and for different fields of studies. However, examining the available price lists for each University in 2013-2014, it averaged around 132 EUR per ECTS credit[3].

Consequently, the scholarship programs interest increased from 22-24% in 2008 to 32% in 2011, but at the same time the requirements to obtain a grant became more restrictive, so the total number of scholarships granted remained the same, and simultaneously the volume of scholarships awarded shows a lower increase in the last years (Michavila, 2012). However, it grew from an average of 2085 EUR in 2002 to 3.190, 56 EUR in 2013 and depended on the field of studies (Ministry of Education of Spain, 2015).

Due to the recession a similar situation regarded international level, diminishing scholarships and subsidies. Therefore, the improvement of resources accessibility will be vital for future student mobility. However, Spain placed 7th in the ranking of countries with the percentage of GDP spent on financial aids in higher education in 2010 (the OECD average was 0.31% against 0.11% of Spain) (Michavila, 2013).

As pointed out, economic factors constitute one of the reasons for the reduction of Spanish students and the resulting income reduction. Therefore mobile students have become a very important source of income for private and public universities, and there is a need to put in place certain immigration policies "to encourage the temporary or permanent immigration of international students (OECD, 2014, p. 348).

Traits and Importance of Teachers

"The quality of an education system cannot exceed the quality of its teachers" (OECD, 2014, p. 410). The number of teachers is adjusted in so that it corresponds with the budget reduction. In public universities of Spain the percentage of native teachers is 98%, whereas in the case of private universities is the 95.3%. About half of foreign teachers come from European Union, with the exception of the arts and humanities field (79%) (Ministry of education of Spain, 2015).

The percentage of teachers who hold a PhD degree is 70.4% for public Universities and only 43.4%, and this proportion – has been decreasing for the last few years, for both types of Universities (Ministry of education of Spain, 2015). Furthermore, PhD teachers are more concentrated in the field of sciences, 90%, but teacher-to-student ratio in this field is the lowest (4.4 students) with regard to other fields (for instance, it is 20.5 students per teacher in Social Sciences).

Recruitment would be an excellent opportunity for universities to enable to further improve their quality, particularly those foreigners highly skilled (Marginson & Considine, 2000). Recently, the number of Spanish teachers decreased considerably together with the budget reductions. Although the proportion of foreign teachers is very low their number is gradually rising, especially in private Universities (possibly it relates with the creation of new private Universities in the last decade or it might also be the case because of different requirement). When it comes to public Universities, this number grew (except in 2013) and since 2014 the positive tendency has been resumed. The most relevant fact is that the number of foreign teachers varies significantly depending on the region and the

[3]Tuition fees depend on several factors such as the region, University, field of study, level of experimentalism, grants, discounts, the number of times that the student repeat the same subject, therefore this calculation is an approximate average.

university, but in any case foreign teachers are highly concentrated in the same 4 regions as the mobile students, and where also the number of universities and students is the highest (Figure 12).

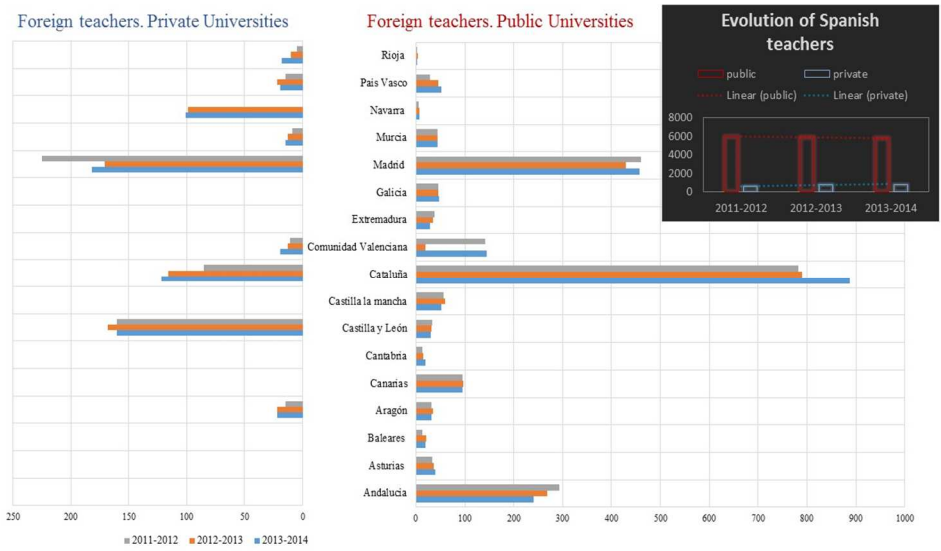

Figure 12. Evolution of the number of teachers by Spanish regions in the years 2011-2014
Source: Adapted from the Ministry of Education of Spain (2014).

In addition, there is a world shortage of teachers (OECD, 2014), in particular concerning the higher education. All economic factors such as the level of earnings, unemployment and taxes, education spending are very important to attract international teachers and researchers (Mihi-Ramírez et al., 2014). According to Eurostat (2014) about 77% of total public spending on education in Europe covers teachers' salaries. What is more, the lack of financial incentives makes it more difficult to retain teachers which also significantly affects the research capacity (OECD, 2014). From 2000 to 2005 the expenditure for Spanish higher education increased by 15% above the OECD average, and 20% above the EU average. However, this was realised because of the increase in expenditures whereas the number of students barely changed at the same time (Michavila, 2013). In the period between 2005 and 2010 the number of students increased faster than education expenditures.

Spanish public universities' incomes decreased by 14% in 2012 as compared to 2009. Regarding the private universities incomes, they rose by 4.5% in 2012 and 0.5% in 2013. Taken as a whole, the worse economic conditions, the reduction of the number of Spanish students and the growing competition can explain this decrease. Therefore, a reasonable strategy would take into account mobile students and greater internationalization of studies and universities. Although it entails considerable expenditures, it can be viewed as an investment with potential for future returns. Hence, the greater economic effort are done now, the higher potential improvement can be expected in the future. This would facilitate an increase in incomes, a better quality system and the recruitment of highly skilled students and teachers (Thurow, 1970; Becker, 1971; Mixon, 1992; Marginson & Considine, 2000; Hawtorhne, 2010).

CONCLUSIONS

This research provides information regarding current problems, challenges, changes and opportunities concerning higher education mobility, as shown in the analysis of the case of Spain and through international comparisons.

The potential advantages of gaining an international degree such as better labour opportunities and earnings, increased the number of students who study abroad, especially after the economic collapse of 2008. Education matters, and the situation of Spain in the recent years exemplifies and confirms this trend. But also it constitutes an excellent opportunity for the host countries for higher incomes' growth and greater number of highly skilled workers.

Yet, despite the apparent advantages, there are important differences in students' migration flows between countries, regions and universities. For instance, in the case of Spain mobile students represent nearly 3% of total students number, and they are concentrated in the few regions which have the biggest number of students, resources and universities, such as Madrid, Cataluña, Andalucía and Valencia. This number also depends on the field of studies. Spain receives the higher number of Engineering and Architecture students, but in the same time sends abroad more Humanities and social sciences students.

In addition, the public universities in Spain have a greater number of enrolled students than private universities, but only the number of private Universities has increased in the last few years in spite of the income restrictions and the adverse economic circumstances.

More English-language studies' programmes would probably increase the number of mobile students and international highly skilled staff. It would further help to face the problem of national students' reduction caused by higher tuition fees and scholarships' problems, particularly with a view to bigger dispersion of tuition fees across regions in the last few years.

Last but not least, likewise in the case of mobile students, foreign teachers are scarce, although their number is rising especially in the same region where foreign students are concentrated, though it still represents only a small proportion of overall teaching staff. They improve the quality of higher education system because they have higher knowledge and skills, but it is difficult to attract and retain them in view of the budget restrictions. Therefore, it requires considerable expenditures and can be viewed as an investment with potential for future returns.

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The Determinants of Sustainable Entrepreneurship of Immigrants in Lapland: An Analysis of Theoretical Factors

Nafisa Yeasmin

ABSTRACT

Objective: This research seeks new ways in which the socio-cultural capital and human capital of immigrants can be used as a resource in business life in Lapland – a sparsely populated area and new immigrant-receiving region.

Research Design & Methods: An analysis is put forward that explores enablers that might sustain entrepreneurial existence and development and increase long-term prospects for immigrant-owned firms.

Findings: In the last three years, many immigrant entrepreneurs in the region have had to close their businesses a short time after establishing them. It is harder for immigrants to run businesses and to become successful in Lapland than elsewhere. Triple disadvantage theory provides explanation why established entrepreneurs were pressed to close their business. Disadvantages create barrier to developing their full entrepreneurial potential as a whole.

Implications & Recommendations: Immigrant entrepreneurship in Finland does not fall within the responsibility of any single authority or any single sector. All the official and organizational actors need to change their attitudes and encourage positive interaction. It is necessary to invest in knowledge building, a process that will enable immigrants to play a fruitful role in the social, political and economic development.

Contribution & Value Added: The article contributes to the studies on immigrant entrepreneurship and immigrant socio-economic integration by focusing on necessity-driven entrepreneurs in a sparsely populated region - Lapland in Northern Finland.

Article type:	research paper
Keywords:	Entrepreneur; Immigrant; Sustainable; Factors; Disadvantage theory; Self-employment
JEL codes:	J15, F22, L26

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INTRODUCTION

Immigrants' integration, entrepreneurship and participation in the labour market are desirable developments in Lapland, for they represent a better use of the region's human resources. The focus of this study is on Arctic demography, economic growth and living conditions in Arctic Lapland. Immigrant entrepreneurship has great potential and could help lessen the impacts of the current socio-economic challenges in Arctic as well as Lapland (Fondahl & Larsen, 2015, p. 163), if it is supported. Thus, the topic of this research holds potential for Lappish perspectives. Some immigrants are running businesses which for a variety of reasons have not been able to create economic benefits. Some have low revenue or are losing money, with the entrepreneurs investing their full energy and labour without obtaining profits. After a certain period of time, they are forced to close their business. This trend could be harmful for economic growth in Lapland. Consequently, a sustainable immigrant entrepreneurship policy, along with a model to support effective management of immigrant entrepreneurship, is needed to increase the prospects of success for immigrant businesses. This article is an exploratory study of the theoretical factors and focus- group interview of immigrant youth and women; in-depth interviews of existing and departed entrepreneurs with immigrant background. The study investigates both the barriers and enablers to promote sustainable immigrant entrepreneurship in Lapland. This aim of my research paper entails not only creating and sustaining a level of entrepreneurial development for immigrants who would like to become entrepreneurs, but also informing tools for officials, policy makers and researchers.

Some of the literature on sustainable development of entrepreneurship underlines the importance of creating a dialogue on sustainability by focusing on what is to be sustained. Leiserowitz and associates identify the focus as "what is to be developed, namely, individuals, the economy, policy and society" (Leiserowitz, Kates & Parris, 2006, pp. 413-444). The growing interest in sustainable entrepreneurship suggests that sustainability is a vital addition to, or even a component of, 'new' entrepreneurship, with a simultaneous awareness of the limitations of 'old' entrepreneurship and the reasons for successful and unsuccessful business histories (Lansa, Blokb & Wesselink, 2014). Opportunities related to sustainability are more multifaceted than business opportunities that address a one-dimensional dilemma, eliminate a serious shortcoming or meet a substantial need. This study highlights the importance of ensuring and securing the future development of an Arctic region such as Finnish Lapland, where young people are leaving the region. This can be done by generating more human capital and investing more resources in its people (Rasmussen, 2011) and receiving immigrants. A future model for entrepreneurship development is required if entrepreneurs are supposed to successfully run businesses and create job opportunities for others in the region. To fulfil the goal of my study, I have used qualitative method e.g. focus group interviews of interested immigrants who would like to become an entrepreneur. The study made in-depth individual interviews of local existing immigrant entrepreneurs who are successfully deriving their business. To get the genuine fact on disadvantages and lacking of continuing a business in Lapland, the study also made some in-depth interviews of immigrant entrepreneurs who had to stop their business immediately after establishing. This paper includes an analysis on the theoretical factors affecting immigrant entrepreneurship in Lapland. The study analyzes disadvantage

and cultural theory of immigrant entrepreneurship and explores the theoretical factors pushing immigrants for establishing businesses, and those are working as risk factors. The present study widens the scope of previous analyses on "sustainable entrepreneurship" and broadens understanding of immigration entrepreneurship in Lapland. The success of an enterprise is not dependent solely on the entrepreneurs; positive community perspectives and dynamics of political economy could help immigrant entrepreneurs to succeed in Lapland.

LITERATURE REVIEW

The concept of entrepreneurship is defined in a variety of ways in the social sciences. For example Bull and associates put forward the following definition: "An entrepreneur is an innovator who bears uncertainty and bears risk" (Singh & Gupta, 2015). In some countries entrepreneurs are struggling to survive the economic recession which started in 2008. Entrepreneurship appears as an alternative to unemployment and dissatisfaction with the host labour market. Social disadvantages have pushed them into self-employment. While the tendency of immigrants to engage in self-employment is well documented, it is imperative to know about the performance of the ventures they set up (Irastorza & Peña, 2014; Irastorza, 2010, pp. 205-221). In setting up a business, immigrants recruit themselves as workers in the labour market; entrepreneurship is potentially a better alternative than any low-status job with low wages, which is the only other option available for immigrants in Lapland (Yeasmin, 2012, p. 354). According to recent research findings, immigrants are more likely to become entrepreneurs than natives (Irastorza & Peña, 2014). Immigrant entrepreneurship in Finland differs in many ways from that in other European countries where immigration has a longer history. Before the 2000s, Finnish immigrant communities were not large enough to establish businesses, since business at the time was based on the consumption patterns of a particular ethnic group or on immigrants from a particular geographical region who would support future demand for products such as ethnic food and consumer goods.

Immigrant entrepreneurs have to compete with Finns in setting up a business, which is not an easy task. Most of the immigrant enterprises in Finland at large as well as in Lapland are based on the food culture of the immigrants' country of origin and are mostly small to medium in size (Petäjämaa, 2013, pp. 11- 13).

The conventional perception is that immigrants are forced into self-employment if no other work can be found (Wahlbeck, 2013, 2008). Sometimes they are pushed indirectly by the environment towards the business world, as they are discriminated against in the labour market and treated harshly otherwise as well (Prescott & Nicholas, 2011). According to data from the 2012 Immigration Survey (Petäjäaa, 2013) concerning reasons behind entrepreneurial motivations conducted by Ministry of Employment and the Economy Finland, the vast majority of immigrant entrepreneurs were mainly motivated by the desire to be in their own surroundings (50 per cent of respondents) or by their business ideas (35 per cent of respondents); others reported that they had found no training or apprenticeship (25 per cent of respondents). Some entrepreneurs were also pushed to set up an enterprise because they had not found jobs in the labour market (10 per cent of respondents) (TEM 2012, 55−56). Therefore, in Finnish and Lappish cases, substantial share of immigrant entrepreneurs are necessity-driven. There appears to be a clear need to make immigrant

entrepreneurship more opportunity- driven and to offer more public support for immigrant entrepreneurship to foster the survival and success of the immigrant entrepreneurs.

In Lapland the unemployment rate of foreigners in recent years has been approximately 30 percent, while the overall rate in the region was 13.4 per cent in 2012 (Petäjämaa, 2013). Immigrants face a wide range of obstacles in the labour market. While there is an extensive range of social services to facilitate integration into Finnish society, entering the labour market remains challenging (Koikkalainen et al. 2010). The challenges immigrant entrepreneurs face are discussed in terms of disadvantage theory (Irastorza, 2010) below.

There is a linkage between the Arctic economy and the Arctic's natural resources. Sustainable use of resources can protect and preserve the region as well as its population (Rasmussen et. al., 2015, pp. 423-468). Immigrant entrepreneurship holds potential value for economic growth in the Arctic. Immigrants introduce new ideas from around the world as well as diverse cultural heritages and thinking, all of which could be essential elements in creating new products, open markets and job opportunities while stimulating technological innovation (Marczak, 2013). According to the cultural theory of entrepreneurship, immigrants would like to represent their culture via their business in the host country. According to an OECD report from 2010, "cultural predisposition plays a large role in determining whether someone decides to start a new business. It can influence risk aversion and the ability to trust others, each crucial to embarking on entrepreneurial activity" (OECD, 2010, pp. 6-11). Some researchers have observed that although the influence of individual attributes on immigrants' decisions to start a company has not been empirically tested, they seem to establish businesses just to follow other members of their ethnic group who are running a business successfully in the host country (Ford & Richardson, 1994; Irastorza & Peña, 2014). In Finland, some students come from different countries to study and seek better economic opportunities. After completing their studies, they would like to stay in the country permanently and establish a business. Because entrepreneurship is an entry point to the job market in the host society, it could offer a foreign student the chance to rapidly advance toward his or her particular goals. However, in Lapland it is very easy to establish a business, but hard to keep it running. The interested immigrant entrepreneurs get personal advice about establishing business in different languages. However, there is no advice centre for running a business in Lapland. Rates of success, including those for immigrant businesses, differ from country to country, city to city, ethnic/national (sub) group to ethnic/national (sub) group, sector to sector and period to period (Rath, 2006; Levie & Smallbone, 2015). Because, the forms of support for entrepreneurship is different in different countries and cities, for instance in Helsinki some organisations "Yritys-Helsinki" , " Uusiyritys keskus" supports immigrants in establishing phases as well as to some extent business running phases. In that light, it is important to emphasize the complex linkage between successful entrepreneurial climate and the basis, dynamics and perspectives of entrepreneurs, communities and political economy of Lapland

"Sustainable entrepreneurship" is a multidimensional concept that extends beyond environmental protection to economic development and social equity (Gladwin, Kennelly & Krause, 1995). Of these aspects, the present study confines itself to economic development. Promoting the sustainability of entrepreneurship means recognizing and applying entrepreneurial analyses that identify opportunities to increase the life span of immigrant

businesses, which are a positive source of economic growth in Lapland. More specifically, sustainable entrepreneurship means managing a traditional business with successful continuity. This study argues that entrepreneurial activity can only be considered sustainable once it is planned for the long run with the goal of economic gain. As noted, in Lapland some immigrants have had to close their businesses soon after establishing them, which has an undesirable impact on the regional economy. Such business failures have prompted immigrants to move to the southern part of the country in search of better job opportunities, a trend with a detrimental impact on society in Lapland. This paper concentrates on controversial issues, ones which relevance has been both denied and acknowledged by the immigrant entrepreneurs I have interviewed; one such issue is the failure of a business. Unlike entrepreneurial culture in Australia, Canada, Britain and the United States, the entrepreneurial culture in the North of Finland is not resilient. The northern environment, demographic challenges and geographical identity make entrepreneurship harder for immigrants. According to the interviewees interested in establishing a business, entrepreneurship requires a business idea and investment of money to implement that idea; yet one can argue that "such images of interested immigrants" are not compatible with the perception of sustainable entrepreneurship, which includes continuity. Some informants who ran successful businesses in their country of origin started up businesses upon settling in Lapland, which tended to cause immediate closing of the businesses. The number of successful, immigrant-run small businesses in Lapland remains very low and immigrant entrepreneurship may actually be on the decline, but also a number of success stories can be found. The failure of immigrant businesses has a negative effect on entrepreneurs' personalities and attitudes, which also causes extreme social deviances at some point (Miller, 2015). Immigrants may run businesses successfully in countries with large ethnic markets, but "getting caught napping" – ignoring the market - is fatal to a business in the North. For instance, in England and America immigrants run family businesses year after year without any basic entrepreneurial education, because there are large ethnic markets and the locals have positive attitudes towards immigrant entrepreneurs and entrepreneurships. Liberal immigration policies and different immigrant support services, as well as forms of community support, create a favourable environment for immigrant entrepreneurs. According to the interviewees, in China, Bangladesh, Thailand, Turkey, Somalia and certain developing countries in Europe, entrepreneurs do not even need to register their companies or go through other bureaucratic procedures in order to establish a small business. When immigrant entrepreneurs behave in Lapland as they did in their country of origin, a business becomes difficult to set up and run, although it could be successful in immigration-friendly countries. In the North, collective actions on the part of the community, new forms of governmental support (Larsen & Fondhall, 2015, p. 163) and reforms of law and policies would be needed to some extent to support entrepreneurship.

Theoretical Factors

The cumulative disadvantage theory and the cultural theory are two major theories of entrepreneurship that could provide insights into immigrant entrepreneurship in Lapland (Fregetto, 2004, pp. 253–68; Fredick & Foley, 2006). A triple disadvantage is hypothesized in this paper. The first of the three is that immigrants are essentially forced to establish businesses due to social barriers; dissatisfaction with their present job status in the host society and the lack of job opportunities for immigrants in the host society separate them

from mainstream society. The second disadvantage is immigrants' inability to take advantage of knowledge spillover (Acs et al., 2009; Acs & Sanders, 2012; Ghio et al,. 2015; Plummer & Acs, 2014); this stems from their lack of entrepreneurial education, poor language skills, and limited knowledge about the local culture, policies and laws relevant to business, which may force them to shut down their businesses shortly after starting them up (Volery, 2007, pp. 30-41, Baycan-Levent, 2010). On the other hand, cultural theory pushed them to establish business, since immigrants have some characteristics, for example, a cultural heritage or endowment, or culturally determined features that make them hard workers and risk takers and instill in them a need of community viability and a strong motivation for making a living (Masurel, Nijkamp & Vindigni, 2004, pp. 77–86.). Thus, although their cultural heritage provides immigrants with motivation to work, social disadvantages force them into self-employment as entrepreneurs (Yoo et al., 2011, p. 193-210). The third disadvantage that can be identified in the present context is that immigrant entrepreneurs who run businesses based on their cultural heritage find it difficult to attract more customers and face limited social, political and economic opportunities. The market of ethnic consumers is small and demand is not sufficient for running a business dependent solely on ethnic consumption; the number of immigrants is growing slowly and there is movement of the immigrant population to and from as well as to Lapland. There are certain necessary dimensions for running a business successfully in the region. Recent political discourses against immigration also effects negatively immigrant entrepreneurship. The research proceeds to posit discourses which is studied at a macro sociological level (Talja & Sanna, 1999) - this study produces knowledge and concrete contexts of entrepreneurial ethos, core competence, the community and political economy factors - that must be considered if the disadvantages noted above are to be overcome and immigrants are to be able to run successful businesses in Lapland (Raudeliūnienė, Tvaronavičienė & Dzemyda, 2014, pp. 71-79). According to Foucault´s influenced discourse analysis it is better to examine "serious speech acts" and practices rather than rules and conventions (Talja & Sanna, 1999). Although informants of the study should not be institutionally privileged speakers, their views are studied as an example of more general interpretative practices in the study. The relation between entrepreneurship discourses and sustainability has received little theoretical attention in Lappish perspectives. Linking this discourses with disadvantage and cultural theory the study develops four different factors of the possible barriers and enablers (Azmat, 2013) faced by immigrant entrepreneurs and immigrants interested in establishing business in Lapland. Ethos and core competence involve an entrepreneur's personal attributes, with ethos encompassing the cultural heritage he or she brings to the host country, and core competence the capacity for sustained business decision making, management skills, market orientation, the ability to identify opportunities, and communication skills. "Most discourses on entrepreneurial sustainability focus on financial aspects" (Negut, 2015). This study argues that there are other factors related on entrepreneurial sustainability rather than financial factors. Because, with the same financial support some immigrant entrepreneurs recognise promising opportunities and some do not. The ability of recognizing opportunities is also a factor. The third factor, community, draws attention to the importance of addressing the social disadvantages immigrant entrepreneurs face and, lastly, political economy refers to role of the host country's busi-

ness policy and legislation in the success or failure of immigrant businesses. Figure 1 presents the four factors of the successful immigrant entrepreneurship and their theoretical underpinnings below.

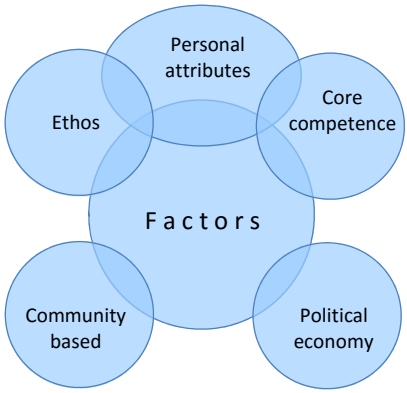

Figure 1. Determinants of successful immigrant entrepreneurship
Source: own elaboration.

MATERIAL AND METHODS

The objective of the study was to reveal the factors which effect sustainable immigrant entrepreneurship in Lapland. Accordingly, this study investigates factors that play an important role to facilitate small entrepreneurship growth for immigrant in Lapland. The research is based on conclusions drawn from focus group interviews comprising a discussion-based interview of targeted participants (Morgan, 1997) and in-depth interviews of immigrants who are currently acting as entrepreneurs and entrepreneurs who have been acting as entrepreneurs for some while and recently closed their business. The study organized four different focus group interviews (see Seidman, 2012) in Rovaniemi and the Kemi-Tornio region and collected data from immigrant women and youths. My focus group (FI) encompasses immigrant youths (IY) who are aged 18-49 and women (F) at any ages who are at risk of labour market marginalization and/or long-term unemployed. The unemployment rate among this group is much higher than immigrant man and this is only reason they have been chosen for the study. The information about group discussion has been published in the local newspapers. Info was sent to the local authorities, multicultural-organizations and associations who dealt with immigrants. Dissemination of interview information was handled properly. In the group discussions in Rovaniemi, a total of 23 women attended. They originated from Palestine, Iraq, Pakistan, Iran, Thailand, Hungary, Germany, the Netherlands, the Czech Republic, Israel, Jordan, Russia, Ukraine, Vietnam, France, China and Bangladesh. Most of them are refugees and rest of them have come to Rovaniemi under the family re-union category. The discussion was held in English and Finnish. For young people, in the group discussions attended by a total of 19 people, (5 of which were women) who were originally from Algeria, Nigeria, Mexico, Russia, Bangladesh, from Vietnam, Pakistan, Somalia, Iraq, Iran, China, and Myanmar. In this group, most of the individuals were refugees, few were students and some migrants who came under

family reunification. Each focus group discussion in Rovaniemi took three hours. In addition of Rovaniemi, group discussions had been also held in Kemi-Tornio region where one women and 5 young people attended the meeting. Duration of the discussion was in Kemi-Tornio was 2 hours.

There are a number of phases in designing and conducting focus group interviews. The focus group encompasses immigrant youths and women who are at risk of marginalization in the regional labour market. In the conceptualization phase, focus was put on the target group's knowledge on self-employment and opinions on entrepreneurship. In the next phase, in-depth open questions were pursued to gain a deeper understanding of themes under study.

These questions started a group discussion, which was recorded and summarized. Efforts were made to ensure that all respondents participated in the conversation and that no one dominated it. I have examined the discussion in terms of themes for further analysis.

The research raises some ethical issues, such as consent and confidentiality. Everyone who participated in the study freely consented to do so without being coerced or unfairly pressured (Green, 2007). This means that they were well-informed about what participation entailed.

As the interviews raised more questions than could be properly examined, subsequently several in-depth interviews (IR) for collecting success stories and experiences of individual immigrant entrepreneurs were organized. Accordingly immigrant entrepreneurs (male M and female F) interview was organized, which in this context raises a good experience based on their experience and key challenges. Although the interviewed entrepreneurs were from different industries and they have faced different problems as such, they had also something in common: all of the interviewed entrepreneurs spoke good Finnish language had been carried out university levelled education from different countries, received a start-up company start-up and delivery to entrepreneurs in Lapland over five years. Three successful entrepreneurs were interviewed (M/F, aged 35-50) who were from Turkey, Chech Republic and Russia. To get the genuine fact on lacking of continuing a business in Lapland, two female immigrant entrepreneurs were interviewed. These were from Bangladesh and Thailand aged 30-38 and had to stop their business immediately after establishing it. For these individual interviews, Guion's and her associates' observation was followed, that "[i]n-depth interviews involve not only asking questions, but systematically recording and documenting the responses to probe for deeper meaning and understanding." ((Guion, Diehl, & McDonald, 2011). The research is based on transcripts and notes, complemented to some extent by audio tapes and written notes on interviews. The method applied in the data analysis phase was content analysis, which involves re-reading the interview transcripts to identify themes emerging from the informants' answers. It was critical to index and code relevant words, opinions and sentences, dividing these into three different categories: 1) seeking information, 2) challenges and 3) suggestions. Some opinions were repeated several times by several interviewees and these have been identified in the study as particularly important data. In writing up the results of the interviews, the categories have been described and interpreted in line with previous scientific studies on the topic (e.g. Bryman, 2008; Kvale & Brinkmann, 2009).

The study had some particular questions for the interviewees and “quota sampling” (Qualitative Research Methods) was applied properly. Purposive sampling and data analysis have limitations typical for qualitative data. Respondents who are likely to provide detailed data were selected. Conversely, some of the respondents in the discussion group lack prior entrepreneurial experiences from their countries of origin as well as from Finland. They were mostly determined immigrant youth to establish business in Lapland. The results of this explorative study are not applicable for the entire immigrant population which is recently ca. 3700 individuals in Lapland (Suopäjärvi, 2015). However the results could help long-term unemployed immigrants who lack prior entrepreneurial experiences. This study is a step in providing tentative suggestions for an inclusive empirical research agenda on social enterprises in Lapland to be investigated in the future studies by using the knowledge and skills of respondents who lack prior entrepreneurial experiences.

In the literature review phase, the focus was on theories or factors for analysing sustainability. According to statistics on Lapland, immigrant entrepreneurs often close their enterprises soon after establishing them. With this in mind, much efforts were concentrated on the causes of this unsustainable situation and on determining the barriers of running a business in Lapland. The literature review encompassed a variety of different contexts in order to inform the research goals. In the focus group and in-depth interviews, some important issues came up that are related to sustainable business, and these have been framed in several theoretical models that have been put forward by social scientists and economists. Data analysis phase, revealed that, for future economic prospects in Lapland, it is essential to maintain the region's vitality and the growth of entrepreneurship in different sectors, such as tourism, social welfare and health care, construction and mining. The Figure 2 summarizes the underpinnings and main phases of the research below.

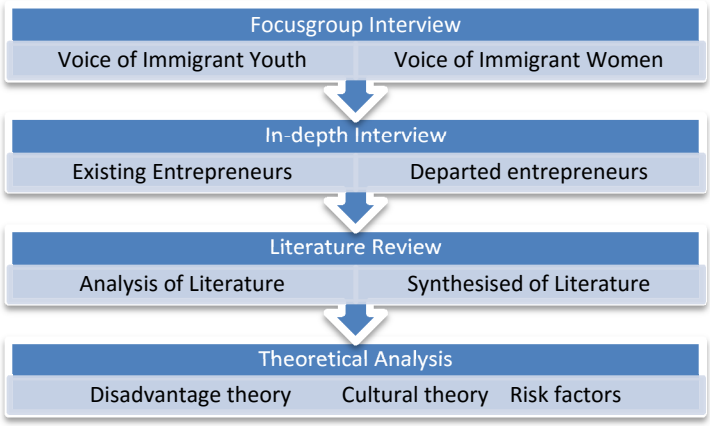

Figure 2. Phases of the research
Source: own elaboration.

RESULTS AND DISCUSSION

Index key symbols using in the results:

IF - Focus Group Interview
IR - In-depth Interview
F - Focus group interview for women
IY 18.49 - Focus group interview for youth aged 18-49
M - Male for in-depth interview
F-M 35-50 - Male and female for in-depth interview

Ethos

A motivated entrepreneur is seen as having better prospects in business than an unmotivated one. Entrepreneurs should have a particular set of motivational goals as well as a set of positive forms of support from host people that could maintain their motivation. (IR-IF)

The motivational ideas entrepreneurs have, are usually linked to entrepreneurial behaviour. Thus, a favourable climate and encouraging business atmosphere are needed for those immigrants who are interested in establishing enterprises in Lapland. According to Abraham Maslow, "[t]theories of human behaviour are based on careful observations and subsequently theory and practice are usually closely related. Although theories can never predict behaviour with absolute certainty, there are many variables to take into account to give one a good indication of how people might behave in various circumstances" (Maslow, 1965, pp. 6-25)

In entrepreneurship, individuals' occupational choices and motivation are crucial for establishing a business. It should not be influenced by others (Bosma et al., 2011). In immigration entrepreneurship cases, it is very common that immigrants are influenced by their own cultural network. Role models are gradually being recognized as an influential factor in the choice of occupation and career (Bosma et al., 2011; Contin-Pillart & Larraza-Kintana, 2015; Salaff et al., 2003, pp. 61-82). A role model may give someone the motivation and encouragement to choose a particular direction, activity or career path ((Krumboltz, Mitchell & Jones, 1976)) and also provide evidence that certain objectives are easily achievable (Akerlof & Kranton, 2000). As Gibson has stated, "[t]he term 'role model' draws on two prominent theoretical constructs: the concept of role and the tendency of individuals to identify with other people […]and the concept of modelling, the psychological matching of cognitive skills and patterns of behaviour between a person and an observing individual" (Gibson, 2004, pp. 134-156). In this same vein, Bosma and associates state that a role model is an individual who sets models to be emulated by others and who may motivate other persons to choose certain career decisions (Bosma et al. 2011, pp. 410-424). They also point out that in entrepreneurship it is common to have role models of the same gender. The present research has revealed that a role model can be one of the support factors giving an immigrant entrepreneurial motivation, emotional feedback or encouragement (Lavoilette et al., 2012, pp. 720-742;) learn skills and abilities enabling them to survive in business life in Lapland and to achieve certain goals from the role model (Seelos et al., 2010). To some extent interested Immigrants were motivated by their entrepreneur peers. For instance, Turkish immigrants are active in the restaurant business in Finland. Newcomers follow the experiences of self-employment of earlier entrepreneurs

from the same country of origin. Business ideas and dreams were reshaped by the role model's experiences in Lapland, which ended as disadvantages in some cases with the closing of the enterprise. Assessing the credibility of a role model is important in creating a sustainable business. According to the interviewees, there is a positive correlation between motivation and the entrepreneur's own cultural network: after arriving in the host society, immigrants are deeply rooted in their communities by their own network. Immigrants receive occasional affirmation and emotional support through peer relationships. To some extent, immigrants are also influenced by the economic stability of other immigrant groups who live in the same society, and sometimes they can be motivated by the global information exchange on successful immigrant entrepreneurship (IR-M47&F). In some cases, they are influenced by successful evidence of peers living in the same society or in a different country (IR-M47). Such motivation cannot bring sustainability in immigrant businesses in Lapland, unless psychological and survival support is received from other sectors, not only from the role model.

This research suggests that entrepreneurs motivated by role models should be viewed as potentially unsuccessful in business if they have no other factors working in their favour or no support from the local authority. Ethnic groups are very much dependant on support from different sectors for surviving and are willing to build their competency in the areas needed for successful entrepreneurship rather than role model. However, this sort of entrepreneurial motivation based on the disadvantage theory of entrepreneurship led to successes as well as failures, because the role model behaved unpredictably or differently than the entrepreneur had anticipated (Krueger et al.2000) or the entrepreneur had misunderstood the model's thinking or failed to assess his/her credibility (Lavoilette et al., 1995).

Self-efficacy is most important for establishing an enterprise and figures most significantly in motivating immigrant entrepreneurs in Lapland. It is defined as follows by Ravindra: "Self-efficacy is the belief and judgment of one person about his or her own capabilities which has three dimensions: magnitude, strength and generality. As "magnitude is the level at which a person believes he or she can perform, whereas strength reflects the person's confidence that he or she can perform at that level, and generality is the extent to which self-efficacy in one situation extends to other situations*."* (Ravindra, 2011, pp. 127-152) The orientation of a person and his or her confidence in the continuity of a business is a favourable factor for successful entrepreneurship. Self-efficacy (Lavoilette et al., 2012) has a positive impact on establishing a business.

Entrepreneurial motivation is partially supported by early-stage financing, business systems in particular experience of banking and a short credit history in Finland. In Lappish perspective, immigrants need essential support factors from governmental level for retaining motivation for sustaining business. Immigrants need psychological support from Finnish entrepreneurs for the assimilation into local business society and authority so that they learn to tolerate uncertainty and to study records to see why some businesses fail early on due to poor management. This type of support can be obtained, for example, from a peer network or other entrepreneurs who have been through similar experiences (IR-M47). Motivation-related assistance is particularly important for entrepreneurs who are dreaming of a sustainable business (IR). Many of the participants in the focus group discussions have had the desire to pursue a career as an entrepreneur, but they do not

necessarily have all the information related to entrepreneurship motivation. Starting a company requires personal enthusiasm and a sense of direction; but psychological support beyond personal motivation, that is, external encouragement, is essential as well (Ibid.) In the context of Lapland, entrepreneurial motivation created by social barriers, by having little or no income (IF-IY 18-49) or by the influence of a role model or family is intensified by cultural disadvantages (IR-M), such as a lack of appropriate values. This kind of motivation is not sustainable as a driver of immigrant entrepreneurship.

Core Competency Factor

Entrepreneurial competence is developed by the knowledge, expertise and capabilities required in entrepreneurial activity (IR-F37). Lapland needs not just a large number of immigrant entrepreneurs, but the capacity to run businesses.(ibid.,) In fact, it needs quality entrepreneurs who can face regional challenges, survive in local market competition and contribute to promoting local economic development (Ibid.,). Entrepreneurial competence has a great impact in Lapland when it comes to sustaining the growth of enterprises Ibid.,). An enterprise cannot earn greater revenue solely from the resources it invests; innovative and effective management of resources is needed as well (Koikkalainen & Yeasmin, 2014). Competence-based learning is needed to improve entrepreneurial competence as a form of small business support. (Spencer and Spencer 1993) define competence as a core characteristic of an individual that is causally related to higher performance in a job or situation (Rezaei et al., 2014). However, in the present case, entrepreneurial competence discussed by the successful entrepreneurs that is an immigrant´s ability to run a sustainable business with certain entrepreneurial skills, such as being able to identify proper opportunities (44 per cent of respondents indicated this answer), to have skills to communicate with local customers, (38 per cent) and to organize work effectively and strategically (18 per cent). Figure 3 depicts the relative significance of the components of professional competence according to my informants (IR,IF-IY).

Figure 3. The relative significance of the components of professional competence
Source: own elaboration (Data estimated according to the FI and IR).

Entrepreneurial training and education is needed for present small business owners to further their efforts to design intervention strategies (Brockmann, Clarke & Winch, 2008). Lans and associates point out that *"[b]eing entrepreneurially competent does not only refer to the know-how to write a business plan, but it also implies recognizing and acting on opportunities, taking initiative and action, for example by convincing investors to invest money in a project, and relate to potential suppliers and buyers. It implies that the competent entrepreneur is actually able to identify and further exploit an opportunity within a specific context."* (Lans et al., 2008, pp. 363-383).

An entrepreneur needs knowledge about local opportunities and sustainability management relating to the basic form of enterprise and market needs, such as tax codes, social insurance systems, labour market legislation, competition policy, trade policies, capital market regulation and contract law (Hall & Jones, 1999). Also crucial is a good conceptual understanding of an entrepreneur's economic role and logic of action, a technology or invention for which no market has yet been defined, or the availability of products or services (Starik & Kanashiro, 2013; Santos, 2009; Ardichvili, Cardozo & Ray, 2003). Identifying an opportunity that will contribute to entrepreneurial success is a part of the entrepreneurial education (IR-F37). I have found in my research that there is a significant lack of this sort of sustainability management among entrepreneurs for entrepreneurial achievement in Lapland for immigrants. "To detect opportunity an individual needs professional training" (Byrne, 2009, pp. 297–312) which appears necessary of Lappish perspectives. The ability to identify opportunities (Timmons, 1994) is closely linked to entrepreneurial alertness, social networks and prior knowledge of markets, customer problems, ways to serve markets and knowledge domains (Ardichvili, Cardozo & Ray, 2003; IR-F37). Some sources in the literature (Auoni & Surlemont, 2008; Puhakka, 2011) discuss recognition of opportunities as a mental process which, others argue is not a mental process; but rather a professional competence of an individual to know market conditions and to have prior knowledge of social networks and customers' problems, as well as a basic knowledge of business law, such as the start- up process, and of policies for maintaining a business successfully. An individual can educate him- or herself in this form of competence. This competence factors have a potential to act as an enablers by learning (Bergh, Thorgren, & Wincent, 2011) . It is not wise to establish a business with no prior idea of market needs, customer problems and how to serve the market. Accordingly, if they are to establish sustainable businesses, immigrants need to acquire competence in identifying opportunities (IR-M47/F37). An entrepreneur needs conceptual competences, such as ready recognition of opportunities and problems, connecting and rearranging ideas (analysis) and carefully matching new ideas with existing knowledge and capabilities (Lans, Verstegen & Mulder, 2011; Baron & Ensley, 2006).

An entrepreneur needs "relationship competencies" (Lans, Verstegen & Mulder, 2011) in order to communicate with people in the same community or to identify and exploit opportunities, build networks, generate and develop new ideas, and gain resources and legitimacy (Elfring & Hulsink, 2003). A key success factor for an entrepreneur is to have the ability to work with others such as employees, business partners, family, friends and customers (Kaur & Bains, 2013). To set up a successful business, an entrepreneur also needs negotiation skills in order to make deals with others as well as teamwork skills (Lans, Verstegen & Mulder, 2011). A majority of customers speak Finnish, so learning Finnish can

be seen as 'added value' that will contribute to an immigrant becoming a successful entrepreneur. The market in Lapland is very small and thus immigrants need to expand their market to neighbouring regions.(IF-IY 18-49) For example, they can form an entrepreneurial network by extending their relationship competence throughout the Barents Euro Arctic Region (BEAR). They need to build relations with local and immigrant entrepreneurs to tap commercial opportunities geared towards sustainability. Maintaining social responsibilities, including responsibility towards customers, employees and the public, is another competence that could facilitate immigrant entrepreneurship in Lapland (IR- F 38 &M47). In maintaining relationship competence, an entrepreneur needs to be ethically aware and to have the ability to understand ethical issues (Kaur & Bains, 2013).

Achieving organizational competence relates to mastering different internal, external, human, physical, financial and technological resources required by organization (Lans, Verstegen & Mulder, 2011). Some capabilities such as leading, delegating, coordinating, controlling, monitoring, and making work schedules, developing programs and preparing budgets are needed to increase organizational competence. This competence includes an ability to argue at the organizational level and to have the self-confidence required to run the business (Kaur & Bains, 2013).

"Strategic competencies" (Lans, Verstegen & Mulder, 2011), which range from organizing financial issues to setting terms and conditions and evaluating and implementing those terms and rules in the practice of the firm have considerable potential in sustaining development of an enterprise. An entrepreneur's strategic competence allows him or her to design projects, implement decisions, cope with changes and develop strategies leading towards sustainable development practices (Lansa et al., 2014). This competence involves skills in strategic planning, understanding of startup policies, as well as leading and managing the business in sustainable way (Haan & Haan, 2006; Wiek & Withycombe, 2011). For an immigrant it is a very difficult task to measure performance, implement policy and follow terms and conditions in accordance with Finnish law as part of the effort to achieve sustainability (Lansa, Blokb & Wesselink, 2014) (IR-F 37/38). In general, immigrant entrepreneurs ignore the property rights of the host country - sometimes inadvertently, sometimes due to a lack of information- because not having support network. There are social isolation, language barriers and societal structural barriers to accessing information at play. Immigrant entrepreneurs try to sidestep regulations and tend to violate property laws. They often make deals with their workers and in some cases do not pay regular taxes to the Finnish government (Yeasmin, 2012). In the long run such violations cause businesses to fail. To avert this happening, entrepreneurs need to have the competence to understand the political and legal dimensions of sustaining a business in their host country.

Basically respondents agree that entrepreneurs establish a business with their professional goals in mind. Thus, entrepreneurs need professional competences for achieving their goals (Oosterbeek et al., 2010). According to Abbott, professions advance a person´s expertise and knowledge base by outlining new practice areas. Because professions are so embedded in social institutions, however, any change in professional power creates a simultaneous change in institutional structure (Abott, 1988). Professions contribute knowledge that can sustain businesses. According to Suddaby and Viale, "professionals initiate institutional change as an inherent component of redefining their own professional

projects. Because of their status and power within society, when professionals expand or redefine their knowledge base or when they exert pressure to expand their jurisdictional boundaries against adjacent professions or institutions, the changes reverberate throughout the social field. Changes in professional categories (i.e. boundaries of knowledge, expertise and judgement) cannot help but redefine economic and social categories" (Suddaby & Viale, 2011, p. 423) Immigrant businesses are typically micro-businesses that rely on the entrepreneur's own strengths. Therefore, in Lapland those who are interested in setting up a business should be aware of any deficiencies in their professional training and be willing to be trained, if necessary, for example, to work in an entirely new industry. Language study is a good way to advance professional expertise, as are networking with others in the field and gaining local work experience before starting one's own business. Training for a degree or other formal qualification should be accompanied by shorter courses so that skills can be upgraded to the level required under circumstances in Finland. An entrepreneur's education or education for sustainability can play an important part in establishing a sustainable business. For the sustainable development of a business, start-up education and short- or long-term training activities are needed to identify and evaluate opportunities . In the discussion it is also came up that the employment office does not offer long-term business courses which could provide knowledge about the basics of entrepreneurship (IF- IY 18-49). Some informants also request that business courses to be offered in different languages (Koikkalainen & Yeasmin, 2014) for immigrants interested in entrepreneurship (Ibid.,).

Cultural traditions of immigrant from different backgrounds in dealing with others vary. In Finland, many authorities invest in online transactions and basic information, such as the documents required for establishing a company and insurance and tax declarations, can be found online. Not all immigrants may have a computer or Internet connection at home, and they are not accustomed to searching for information on the Internet in Finnish. Accordingly at least some IT training should be provided for immigrants as part of any entrepreneurial training. Computer skills are not limited to searching the network; rather, the new company's profitability may hinge on its ability to expand its market area, set up an online store for business expansion, or buy cheaper or better-quality raw materials online. According to disadvantage theory and research materials, it appears that immigrants who are interested in establishing business and have already established business, very few of them have basically professional goals in mind. At the same time who has already closed their business, had not have professional knowledge which a prior advantage is being an entrepreneur. The more the advantages the more the opportunities for entrepreneurial development (IR-M47/F37,38).

Factors Related to Community

Triple disadvantage theory is related to this factor. Firstly, rigidities of community in the local context is a disadvantage which could threaten robust levels of access to local resources. In the case of immigrant entrepreneurship, the success and sustainability of businesses depend on the interconnectedness of all communities. The creation of values through local business development is an essential process which compensates for shortcomings and preserves the natural business surroundings (Peredo & Chrisman 2006, pp. 811-831). According to Cornwall (1998) and Onyx & Bullen (2000) "the literature on entrepreneurship has begun to stress the need to look at the interaction among communities,

families and individual entrepreneurs." (Peredo & Chrisman, 2006, pp. 309-328). There is a significant connection between a business and the community as a whole in rural areas less likely to grow (Drabenstott, 1999). People perceive Lapland as rural areas, an economically developing region, and as less likely to grow[1]. An entrepreneurial economy at the community level differs in its social structure, social vitality and the quality of life which it offers, with a consequent attractiveness to people (Petrin, 1994) and increase cultural collectivism, enriching social networks (Mickiewicz, Sauka & Stephan, 2010). Enterprises are based on links between private economic and social non-profit initiatives that reflect a social and cultural bond between entrepreneur and community. Without this bond, the community is perhaps not capable of accessing new ideas and might become locked into certain inefficient practices, preventing any changes (Seelos et al., 2010). Community support– particularly in small or rural or remote locations like Lapland ought to offer profound positive societal and economic changes for immigrants. The success of small businesses has great economic value due to the region's geographical remoteness. The sustainability of a small business depends on a positive community approach and, on the other hand, a small business is vitally important to a community's economic approach (Miller, Besser & Malshe, 2007). Secondly, it has been found in minority-based entrepreneurial research that the sustainability of immigrant entrepreneurship encounters some community-based barriers. These include lack of socialization; exclusion from traditional business networks; lack of access to all sectors related to entrepreneurship, for example, information on raising capital, discriminatory attitudes on the part of local people; and cultural differences (Colette, 2001). Those are disadvantages for immigrant in Lapland for deriving a business successfully.

Disadvantage theory need to be reevaluated in the context of immigrant entrepreneurship gateways. Although such programs are conceived as action plans in municipal policies, implementation is lacking. Thirdly, limited interaction with the host society and scanty knowledge about the host culture are barriers to immigrant entrepreneurs in Lapland. They need information on the type of business environment in the region, that is, which products or services will be successful and how many foreigners are self-employed. Lazear makes a valid point regarding the importance of language (Lazear, 1999). Yet others claim that adaptation to a new society as an entrepreneur is a two-step process: being integrated and being assimilated. Both are important processes for immigrants in entering the labour market; their entrepreneurial success depends on their having good relationships with customers from the community.

State actors and non-state actors do not have statistics on the number of foreign-origin entrepreneurs whose businesses are running successfully or who face bankruptcy (Koikkalainen & Yeasmin, 2014). Some of the young informants in the present study said they had clearly experienced discrimination in the Finnish labour market and suspected that even a person with a foreign-owned company should have a Finnish shareholder or a figurehead if the company is to succeed in Lapland (Koikkalainen & Yeasmin, 2014) (IF-IY 18-49). Kwon argues that social capital at the community level influences various outcomes, for instance, economic performance, public health and the crime rate (Kwon et al.,

[1]On one hand, Lapland has a huge natural resources which need to explore and exploit. It has a great economic value in the region. On the contrary, the population of Lapland is ageing and youth are trying to move to the southern part for better opportunities e.g. economic, educational etc.

2013). Some scientists (Williams, 2008; Asgari, 2012) explain social capital as social trust and social ties between entrepreneurs (Fukuyama, 1995, p. 457) Social capital is a feature of the community, not a resource of the individual business owner. "With respect to civic cooperation, the radius of trust is important because the wider it is, the more inclusive is the circle of cooperation… a higher level of trust produces more cooperation" (Delhey et al., 2011, pp. 786-807). To evaluate the amount of general trust, information must be circulated about both the level and the radius of trust; if the level is low or the circle is narrow, the amount of general trust must be considered small. "Research shows that the further people move from their immediate circle of friends, colleagues, and neighbors, the less likely they are to trust" (Delhey et al., 2011). Ethnic diversity may also affect the radius of trust and as was in the case of this research. According to study informants, prejudice (IF-IY18-49) and the low level of trust in the local community towards immigrants (IF- IY/F) are the main problems in building a bridge of trust between the local and immigrant communities. It is emerged as a potential problem in the youth discussion group in Rovaniemi that discrimination occurs in many forms: sometime colour, an ethnic-sounding name and race is used as a reason for not hiring immigrants to work. Sometimes not having Finnish recommendations in CV may affect the job hunt. (IF-IY18-49)

Some scientists argue that as society becomes larger and more diverse, people become accustomed to unknown and unlike others, thus widening the trust radius (Delhey 2011). Others argue the opposite, that is, in diverse settings people may bend down and withdraw into their own circle. (Gijsberts, Mérove, Van der Meer, Tom, & Dagevos, Jaco, 2012, pp. 527-537; Gregory, 1986, pp. 99-114) It is this second effect which I have found in Lapland. According to Delhey (Delhey, 2011), in-group trust means complete trust, for example, when people live in a neighbourhood where they live with their families and know each other personally, and out-group trust refers to a situation in which people do not trust others or do not know each other at all when others differ in culture, religion and nationality. The focus group of this study exhibited features of out-group trust rather than in-group trust (IF-IY/F) meaning that they do not have cooperation with local people, which is one of the barriers to creating a sustainable business environment. Negative attitudes of local people raised in the focus group discussion in this regards. Individual entrepreneurs also agreed with this that attitude of local people is exaggerated nowadays in Finland (IR-M47/F 37-38). Some immigrant entrepreneurs are harassed by the local stereotypes. This harassment occurs in many forms- something by breaking window glasses or kicking in the doors etc.(IR-F38: IF-IY 18-49)

Social trust, or a higher level of cooperation between different groups of people in a society, plays a crucial role in self-employment and business formation at the community level for two reasons: (1) it inspires the free flow of information between diverse groups and (2) it helps small entrepreneurs like immigrant entrepreneurs overcome a lack of Identity and well-defined reputation (Kwon et al., 2013, pp. 980-1008) (IR-IF). They are especially dependent on there being a flow of information between customers and potential customers in a community and a strong bridge between society and host people (Kwon et al., 2013). According to the focus group interviews, although immigrants' social networks are deeply embedded in their own ethnic enclaves, those enclaves are a small part of a wider community in Lapland (IF-IY/F) I would emphasize the shallowness of the ethnic enclave economy in Lapland as one of the most constraining factors in entrepreneurship

development and sustainability among immigrants (Katila & Wahlbeck, 2012, pp. 294-309). Respondents suggest that support for sustainable immigrant entrepreneurship in Lapland is needed to enhance relationships not only with co-ethnic networks, but also with host organizations and the host community (IR-IF). Immigrant entrepreneurs in Lapland are considered a weaker group than native entrepreneurs as regards community-based support and social trust as a whole (Kwon et al., 2013) (IR-IF). Finland is a relatively new immigrant receiving country. As Finns are known for limited willingness to forge new social ties, and habitants in Lapland probably do not differ much from this trend – which is a huge problem for immigrants as well (Katila & Wahlbeck, 2012, pp. 294-309).

According to David Harper, "Investigations of culture and entrepreneurship commonly assume or argue that individualism and economic development... are intrinsically and ineluctably related to one another" (Harper, 2003, p. 127). Cultural adaptability is also important for successful entrepreneurship. Thus, cultural understanding and cooperation are also required for integration of immigrants in the host society (IR, IF-F). In particular, community-wide cultural support and support from peers of one's own culture who have come earlier and are established entrepreneurs may help newcomers (IR-IF). Becoming members of a cohesive business community enables entrepreneurs to understand resources and strengths and to identify common problems, offering a solution to sustained entrepreneurship which allows them to discuss with others and explore how their own cultural background can be used to advantage in their own company (IR-M47&F38).

Cultural support from members of the host community is also needed to adapt to Finnish society and to analyse the market. (IR-M47) Mentoring by a Finnish entrepreneur and peer support from a successful immigrant entrepreneur can aid a startup immigrant entrepreneur in adapting to the local culture and in sustained entrepreneurship(IR-F37/M47). Real-life learning in cross-cultural environments provides experiences of entrepreneurial success (Ketikidis et al., 2012). As one entrepreneur respondent from Turkey said: "the need for support does not end with business startups, as the most challenging step is the first two years, a period during which all small business owners have difficulty keeping their businesses operating (IR-M)" An entrepreneur must be able to manage cultural sensitivity and have a sense of the situation and endurance so that he or she can create customer relationships and establish a market share (Ibid.).

According to Qian and Stough, diversity increases entrepreneurial knowledge and diverse perceptions of thinking create potential for innovation. People can learn from other people´s diverse backgrounds (Qian & Stough, 2011; Lazear, 1999, pp. 95-126).

Political Economic Factors

Political aspects of entrepreneurship have been dealt with in several previous studies (Douhan & Henrekson, 2007, pp. 1-27; Lorentzen & van Heur, 2012). The role of entrepreneurs in the political and institutional spheres of influence is important for the sustainability of entrepreneurship. An entrepreneur has to bear all the risk of his/her enterprise. The purpose of the political economy model is to allow entrepreneurs to share the risk with others by changing and modifying policies and strategies, exempting businesses from taxes and making the relevant laws flexible. A metaphorical aspect of political behaviour is to overlook more concrete economic matters, such as ownership, uncertainty, and production (McCaffrey & Salerno, 2011). However, state policy is to effect ultimate control of entrepreneurs through bureaucracy, taxation and so on. As McCaffrey and Salerno state,

"[…] *entrepreneurs devote their re- sources to time-consuming processes of production in an attempt to anticipate the future wants of consumers, in order to earn profit. Yet in the political arena, there is no such easily identifiable purpose to which resources are devoted. Since the maintenance of capital values and the use of economic calculation are at least partially absent in the decision-making process of the state, there is no immediate and necessary end which is attributable to political actors (e.g. attaining money profits, or even being reelected)." (*McCaffrey & Salerno, 2011, pp. 552-560). This tendency of political behaviour came up in interviews as well (IR-IF) Immigrants are treated as a minor and diverse group in Lapland in every sector. According to the focus group, one example of this is the relative difficulty they have in obtaining a loan from a bank. This attitude could upset the immigrant entrepreneur in Lapland and make expansion of the enterprise unsuccessful, which would have negative effects in the long run for the region's economy (IF-IY/F). In the last three years, many immigrant entrepreneurs have had to close their enterprise for some reason. According to the focus group, changes in political attitude can play a vital role in whether businesses are sustained in Lapland (IF- IY18-49). Immigrants face difficulties in accessing finance for startup, public procurement contracts and business development; they claim that favouritism and discrimination can be seen on the part of some financial institutions and support providers, an allegation which should attract the attention of policymakers (Levie & Smallbone, 2009) (IR- M/F30-38). According to Kloosterman, policies have direct and indirect impacts on immigrant businesses that affect the price of factors of production as well as the implementation or non-implementation of laws and regulations (Kloosterman, 1999). Different decisions of political parties have an impact on Lapland's policy framework and local policy implementations is a It is sometimes difficult for policymakers to understand the impact of policy on economic growth of new technologies and successful small innovation (IR-F 38). According to policymakers, the main hurdle in the path of development is the absence of approved collaboration models and informal networks between policymakers and policy-making institutions. (Hokkanen, 2009).

Entrepreneurial protection in Lapland correlates significantly with the political and legal framework. Changing the legal system is more challenging than changing policy practices in a country like Finland. According to the economic motives underlying political preferences, immigrant entrepreneurship is ideologically cohesive. Sustainable boosting of immigrant entrepreneurship could help shape financial and labour market regulations as it is a positive driving force in Lapland's economy. Political leaders play a significant role in identifying and disseminating the socio-economic values of immigrant entrepreneurship among the voters and customers, which then has an impact on whether businesses can be run sustainably for immigrants in Lapland (IR-M/F 30-38). Entrepreneurship policy is often formulated based on indistinct and distorted objectives, leading to unclear aims and weak monitoring and evaluation (Fischer et al., 2013). Policies should improve to respond to contemporary market demands and to promote business growth (IR-F 30-38) ; implementation of continuously improved legislative policies can create a favourable climate for business. Evaluations and continual assessment are meant to provide feedback to policymakers, but policymakers often focus on short-term outputs rather than sustainable policy outcomes, with potentially damaging results (Hewitt & Roper, 2011). Policymakers should think about some 'hard' policies, such as special grants for entrepreneurs, as well as 'soft'

policies that support businesses, such as advice in different languages, guidance on best practices and access to services to help address particular challenges (Arshed et al., 2014).

Some literature (Zhou, 2013) has focused on the importance of property rights and the trustworthy political commitment to protecting private property rights that are necessary for entrepreneurial performance and long-term economic growth (ibid.). According to interviewees, business rents and corporate taxation are high in Finland (IR-IF). Vat is not charged for an annual business income of less than 8500 euros and for small business this amount could be higher so that their businesses can survive. To some extent, entrepreneurs have to pay more charges for the consumption of energy and the use of services in non-governmental sectors such as banking and waste removal (IR-F30-38).

Experiences in the Nordic countries have shown that lowering regulatory hurdles that hamper business growth, publishing materials in different languages spoken by immigrants, and facilitating entrepreneurial networks can sustain business development (Koikkalainen & Yeasmin, 2014). Recruiting workers in accordance with the Finnish contract law is a sizeable challenge indeed for small entrepreneurs. In the in-depth analysis of interviews, many immigrant entrepreneurs admitted to facing similar problems of the high cost of employment: the threshold for hiring workers is so high that they could not afford it, although workers were needed. An entrepreneur has to pay taxes for hiring an employee (IR-M47). On the other hand, an entrepreneur's tax rate is 3.5 percent higher than that of an employee with the same level of income (Mallinen, 2012).This result is obtained by taking into account the earned income and capital income taxes to be paid as well as statutory insurance. The level of revenue used is an entrepreneur’s average taxable income, which amounted to EUR 40 638 million in 2010 (Suomen, 2012, p. 3). At the entry level, the entrepreneur's tax rate was 33.2 percent and the employee's 29.7 percent (ibid.).

Lapland lacks a developed market system, tariff schemes, and transparent processes (IR-F30-38). One example raised in individual interviews is that same products are sold in different prices by the entrepreneurs because of lacking tariff schemes. It makes the competition harder- some are gaining and some are losing (IR-F 38), with a developed market system, companies and clients can stay up to date on whole market environment e.g. number of clients, customers' preferences and competitors (Ibid.,) These can lead to an endless variety of calculations to support decision making. In addition, in case of transparent process- the soft power of granting legitimacy shifts from one authority to another which cause an information gap for entrepreneurs or clients because different authority explain those policies and regulative system in their own way. Since, there are some regulations and texts that are unexplained in the regulative system. Those regulations need to be explained by the service providers to the clients. They are difficult to explain to some extent and there is risk of forgery, which is unfair for customers (IR-F38). There is a lack of business legislation and legislative participation. Basically, public policies directly affect individuals’ propensity to start and encourage risky ventures. Given this, frequent changes of policies and diverse interpretations of policies could confuse entrepreneurs to some extent, which has a negative impact on entrepreneurship(ibid.) Changing personal insolvency laws by lowering the transaction costs for potential spin-off entrepreneurs and reducing the tax burden could sustain a number of businesses (Hokkanen, 2009).

The lack of transparency and unanticipated outcomes of subsidy applications have also been seen as a hurdle by entrepreneurs (Hokkanen, 2009). Strong protection of property rights is seen as promoting a high rate of productive and sustainable entrepreneurship, and the economic system demonstrates a high degree of innovativeness and capability to adapt to the prevailing legal model (Douhan & Henerekson, 2007). There are some reasons to grant exemptions from high taxes; for example, under certain circumstances small businesses, non-profit organizations, religious communities and disabled persons are exempted from value added tax. Doing Business in Finland (2013) states: "*The sale of goods or services may be exempted from VAT where sales do not take place in Finland, if the sales do not take place within business conduct or if the sales are considered as intra-Community sales of goods.*" (Doing business in Finland 2013). Denmark has relaxed regulations for new and small immigrant entrepreneurs in order to facilitate the creation of businesses (Ethnic Entrepreneurship: case study Copenhagen, Denmark 2012).[2]

It was raised in the discussion that support for immigrant entrepreneurship should be understood as part of industrial policy, not only as part of integration policy. Municipals in Lapland have tough economic situation, it is understandable that the funding specifically targeted at immigrants support measures for entrepreneur-ship are scarce. However, consideration of the needs of immigrants does not necessarily require the establishment of a fully or additional recruitment of new workers' organizations (IR-IF). After analysing political economy factor it was discovered as double disadvantage theory, as political economy itself is a barrier for business growth and on the other hand for immigrant it is an inability to follow the complicated regulative system of the country.

CONCLUSIONS

It is harder for immigrants to run businesses and to become successful in Lapland than elsewhere (IR-F30-38), as triple disadvantage theory pushed them to established entrepreneurship and furthermore pressed them to close their business. It is a barrier to developing their full entrepreneurial potential as a whole. To be successful in business they must survive in the consumer driven capitalistic environment of mainstream business society. Although literature suggests that disadvantaged group might actually become entrepreneurs more frequently than locals, however, according to this analysis, it is mixed in Lappish perspective. Triple disadvantages are compounded by a continued legacy of disparity and mentioned internal and external factors do not encourage an enterprising culture.

The characteristics of the Arctic Lapland make entrepreneurship practices inflexible for immigrants in the region. According to the focus group, it is possible to run a business successfully without any entrepreneurial competence, education and strong motivation in countries that frequently receive immigrants (IR-IF), like the USA, the UK and Canada and, there are large ethnic communities and demand among the ethnic population. Role model

[2]A more generous approach was taken by the city development plan to organize events and concerts in the public spaces in the city by making regulations stretchy for stalls and other outdoor services. The City Development Strategy 2005–09 pointed out some creative zones for providing workspaces opportunities for small entrepreneurs. The government can help by making complex legislation easier for start-ups and reducing the tax burden on new entrepreneurs.

and self-efficacy could be the sufficient factors in themselves for sustainable entrepreneurship. This is true, to some extent, in the southern part of Finland without having some of the positive factors described in this study. However, running a business in the Arctic is challenging and requires that all of the favourable factors are in place. Immigrant entrepreneurship and human power is vital for both the economic development and the demographic balance of the region, as it is known that the elderly are staying while young people are leaving it (Rasmussen et al., 2015). Representing diverse cultural benefits and ethnic products instead of providing ordinary local benefits is not a sufficient measure of sustainable entrepreneurial performance for immigrant entrepreneurs in Lapland. Entrepreneurial survival does not depend on the emergence of one component for entrepreneurship. There are many factors that contribute to sustaining a business (IR-F/M).

Entrepreneurial success also depends on local and national public policy intervention by the country where business is established. Policy makers on the local and national level have to ensure safe access to the market by removing barriers faced by the immigrant. Lapland is a huge area full of natural resources and needs immigrants for the economic development of the region in the near future. A good strategy for raising the number of immigrants and attracting them to the region thus has potential value. Therefore, policies need to be customized and designed in relation to the development of small entrepreneurship and in benefit of diverse group. Indeed, this empirical study suggests that positive entrepreneurial prospects and other opportunities could attract immigrants to the region, which in turn could solve the region's demographic challenges, at least partially.

This research found that some immigrant entrepreneurs with entrepreneurial competence and strong motivation are running businesses successfully. They have been running their business for long time with the help of family instead of paid labour, with family members investing their labour in exchange for a little profit without salaries. They are facing psychological disorders and feel that they receive no support from the relevant authorities. Some interviewees agreed that immigrant entrepreneurs need support to increase their motivation. They need help in networking activities and support for networking, which is used extensively in establishing new businesses. Immigrant entrepreneurs need regular monitoring and long-term basic entrepreneurial education to make them competent and motivated.

Immigrant entrepreneurship issues are not only the responsibility of the entrepreneurs, however. Some interviewees believe that those issues do not fall within the responsibility of any single authority (IR-IF). Risks can be managed by changing and modifying policies and strategies, exempting immigrant entrepreneurs from taxes and making the laws more flexible (IF-IR- M/F30-38). Attitudinal changes among locals, including the official and organizational actors, could encourage positive interactions between immigrants and the community. Broadening the knowledge of immigration entrepreneurship culturally, politically and economically in Arctic society can play a positive role in encouraging immigrants in entrepreneurial integration. Entrepreneurial integration can play a fruitful role in future societal and economic development in Lapland. In addition, immigrants' attitudes towards entrepreneurship can be improved, a factor which is fundamentally linked to a person´s social background. The local business associations could be more active players and offer informal and low-threshold services to complement the work done by the relevant authorities and need more training programs and business orientation courses.

Above all, propaganda on political, economic and social systems of immigration can explain cultural, social and political factors that could enhance immigrant economic prosperity in Lapland.

Recommendation for Future Research

In the case of Lapland, a similar importance of hard policies and soft policies for immigrants is advised. Examples being special quotas for grant distribution to minority groups and special advice in different languages such as that available in the southern part of Finland. It is obvious that there is no lack of enterprise policy initiatives being offered to business in Finland, but there is lack of enterprise policy initiatives for sustaining immigrant businesses in Lapland. There is a systemic shortcoming as regards disseminating general business information among immigrant groups. An immigration strategy should be put in place that, especially in the case of Lapland, recognizes the position of startup entrepreneurs, the ups and downs of being an immigrant entrepreneur, the problems immigrant entrepreneurs encounter and the probable solutions to those problems. It is necessary to have some community entrepreneurship program for immigrant entrepreneurs, such as mentoring by peers who are running business successfully and can serve as role models for "immigrants by demonstrating how their goals and dreams can be attained" (Colette, 2001).

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The Emergence and Effects of Culturally Congruent Leadership: Current Status and Future Developments

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ABSTRACT

Objective: The purpose of this paper is to provide a critical assessment of the cross-cultural leadership literature and suggest avenues for future developments on both empirical and conceptual fronts.

Research Design & Methods: The paper performs a comprehensive review of the cross-cultural leadership literature with a particular focus on the emergence and effects of culturally congruent leadership. The paper identifies gaps and suggests a sequence of steps for future research.

Findings: The major focus of cross-cultural leadership studies has been on the measurement and description of relationships and research within this area has generally paid less attention to addressing other important issues such as cultural value effects across levels, interaction between individual and societal values, and the way culture-leadership congruity is produced and its effects are transmitted.

Implications & Recommendations: The gaps identified and suggestions provided may be of value in theory development and integration, and in addressing empirical issues beyond measurement and description of relationships.

Contribution & Value Added: Although prior studies offer reviews on effects of culture on organizationally relevant outcomes, but their analyses mainly focus on general categories of attitudes and behaviours. The focus of this paper is on providing a comprehensive assessment of the literature on the culture-leadership link.

Article type: literature review

Keywords: culture; cultural congruence; cross-cultural leadership; organizations; leadership

JEL codes: M10, M50

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INTRODUCTION

Cross-cultural leadership research has long recognized the importance of understanding cultural differences in the leadership process. Many such studies have stressed strong connection between leadership factors and societal norms and values (Hofstede, 1980b; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Javidan & House, 2001; Pillai, Scandura & Williams, 1999; Scandura & Dorfman, 2004). The findings of many empirical studies reveal that leaders tend to behave in a manner that is consistent with the expectations of their respective societies, and the congruency between leadership behaviours and the societal norms and expectations is an important determinant of the leadership success (Dorfman, Sully de Luque, Hanges, & Javidan, 2010). Together, the research findings within this area lend credence to the culture specific view of leadership by showing culture as a causal variable affecting the level of leader behaviors and its role as a moderator of leadership effects (Elenkov & Manev, 2005; Geletkanycz, 1997; Offerman & Hellmann, 1997).

However, the major focus of cross-cultural leadership studies has been on the measurement and description of relationships. Research within this area has generally paid less attention to addressing other important issues such as cultural value effects across levels, interaction between individual and societal values, and the way culture-leadership congruity is produced. Given the current state of the literature, there are several opportunities for extending our understanding of the link between cultural values and leadership on both empirical and conceptual fronts.

This paper attempts to provide a critical assessment of the field and suggests a sequence of steps for future research. The paper begins with a brief discussion of the societal and individual level conceptualizations of culture. This section provides the backdrop for subsequent discussions by illustrating the complexity of the concept of culture. Then the nature of the relationship between culture and leadership is considered, followed by a brief review of research on direct effects of culture on the behaviours exhibited by leaders and culture as a moderator of leadership effects. Thereafter, the importance of addressing relationships across levels is highlighted, followed by a discussion on the interaction. The word should be interaction between individual and societal level cultural values. The final section discusses research on the processes through which culturally congruent leadership is produced, and how culturally congruent leadership effects are realized in terms of leader effectiveness. The paper concludes with an indication of gaps in the existing literature and suggests potential avenues for future developments.

REVIEW AND ASSESSMENT OF LITERATURE

Culture: Meaning and Levels of Conceptualization

Societal-Level Conceptualization of Culture

Culture is a variously defined concept, but generally it is argued that culture comprises shared values and conceptions that come into being as a consequence of the common experiences of members of different social groups (House et al., 1999). According to Peterson and Anand (2004), culture consists of a relatively stable set of inner values and beliefs generally held by collectives in countries or regions and these inner values leave clear imprints on the people's outward behaviours and environment. According to Hofstede,

i.e. (1980a) culture refers to observable patterns of cognitive structures that are unique to different social groups and are shaped by individuals' collective experiences. To the extent that individuals share common experiences, they will develop similar cognitive and behavioural profiles.

Cross-cultural studies have divergent views on the definition of culture, but there is a broad consensus among scholars that culture is a system of shared values that guide behaviour and provide a means for constructing and attributing meaning (Hofstede, 1980a; House et al., 2004; Schwartz, 1994). These studies suggest that societal cultures have unique characteristics and they differ from one another along certain value dimensions (e.g., Hofstede, 1980a). These value dimensions are seen as representing the socially shared ideas of what is desirable or good and right in a society (Smith & Schwartz, 1997). Several researchers have proposed dimensions of societal culture (House et al., 2004; Inglehart & Baker, 2000; Schwartz, 1994; Trompenaars, 1993), however, Hofstede's (1980a, 2001) cultural framework has become the most dominant of all cultural classifications. The cultural framework developed by Hofstede (1980a) consists of five dimensions: individualism-collectivism, power distance (PD), uncertainty avoidance (UA), masculinity-femininity, and future orientation. Earlier studies argue that Hofstede's framework has had far greater impact than other conceptualizations (Sivakumar & Nakata, 2001), and researchers have used it as the primary theoretical perspective to understand cultural differences because of its clarity and parsimony (Kirkman, Lowe, & Gibson, 2006).

The GLOBE (House et al., 1999, 2004) study operationalized nine cultural value dimensions: the first seven dimensions, i.e., UA, PD, collectivism-individualism, gender egalitarianism, assertiveness and future orientation have their roots in the dimensions of culture posited by Hofstede (1980a). The authors identified humane orientation and performance orientation as two additional dimensions. Unlike Hofstede, House et al. (1999, 2004) assessed collectivism-individualism values using in-group collectivism dimension and institutional collectivism dimension. Moreover, they substituted Hofstede's masculinity-femininity dimension with two cultural dimensions labelled as gender egalitarianism and assertiveness.

Schwartz (1994) offered yet another conceptualization of how societal cultures vary in terms of their shared values. He theorized three sets of bi-polar dimensions of societal culture: embeddedness versus autonomy, hierarchy versus egalitarianism, and mastery versus harmony. Hofstede's and Schwartz's conceptualizations of societal culture show considerable convergence, with Schwartz's perspective and research magnifying Hofstede's conclusions rather than refuting them (Smith, Bond, & Kagitcibasi, 2006).

The values-based framework has generally been favored to understand cultural characteristics of societies, but other researchers (Gelfand, Nishii, & Raver, 2006; Gelfand et al., 2011) have taken a different approach. Gelfand and colleagues define societal culture in terms of tightness and looseness. The authors argue that societies' values and practices may help capture cultural differences, but the strength of social norms within societies and the societies' strength of sanctioning may offer a deeper understanding of cultural phenomena.

A Bi-Level Analysis of Culture

The conventional approach to measuring cultures is to capture individual responses on different cultural value dimensions and then aggregating them to the country-level scores.

However, several other studies have called for an approach that embodies the assessment of cultural variables at the individual level (Sharma, 2010; Tyler, Lind, & Huo, 2000) as manifested in the strength of a person's adherence to different cultural dimensions (Patterson, Cowley, & Prasongsukarn, 2006; Triandis, 1995). According to Triandis (1995), the macro level cultural dimensions have an individual analogue meaning that the cultural syndromes evidenced at societal level may also manifest themselves at the individual level.

Researchers who advocate an individual level analysis of cultural values contend that utilizing only a country level approach does not capture intra-cultural variations that inevitably exist in every culture (Au & Cheung, 2004; Matsumoto 2003; Ralston et al., 2009; Realo 2003; Straub, Loch, Evaristo, Karahanna, & Srite, 2002). However, neither of the approaches provide a comprehensive framework for appreciating individual level behavior. The appropriate way may be to conceptualize culture at both societal and individual level. The societal level conceptualization of culture cannot not be rejected because culture in a national society plays an important function in organizing collective life by providing solutions to the problems of everyday activities (Baldwin, Faulkner, Hecht, & Lindsley, 2006). It guides individuals by reducing the number of available interpretations of an event or person and in this way it gives order to the world. Individuals are constrained by societal culture in so far that in order to be accepted as group members, they need to conform to cultural standards, which reinforce learning and internalization of cultural values. Shared values are general guidelines that regulate the behaviour of members of a society, so that collective life is organized and individuals interact more smoothly (Smith & Schwartz, 1997). However, individual members of a culture may not harbour cultural values to the same degree; their individual cultural orientations might be either congruent or discrepant with the larger societal culture in which they live. Thus, applying cultural typology at the individual level is reasonable because cultural dimensions may have an individual analogy (Triandis, 1995), and the values of an individual person may be identified in terms of the selected dimensions of culture (Donthu & Yoo, 1998).

Culture and Leadership Interface

Universal and Culture Specific Views of Leadership

Leadership has been one of the most extensively studied topics in organizational research (Yukl, 1994), yet there remains a lack of consensus among scholars as to whether leadership processes are universal or reflect the culture in which they are found. Those who subscribe to a universal perspective consider leadership as a universal phenomenon, meaning that the core leadership concepts and processes are generalizable across cultures (Bass, 1985, 1997). Such a transcultural approach assumes that the key concepts of leadership will be similar across societies. Bass (1997) takes a universal position regarding the applicability of transformational leadership and suggests that such leadership will be conducive to better follower outcomes in both Western and non-Western setting. The notion of the generalizability of transformational leadership across cultures is partly supported by empirical evidence. For example, the findings of a few studies on leadership in Asian societies show that transformational leadership is linked to positive employee outcomes in Asia just as in Western countries (Bai, Li, & Xi, 2012; Ishikawa, 2012).

At the same time, there is a substantial volume of cross-cultural leadership literature that underscores the importance of the influence of national culture on leadership processes (Casimir, Waldman, Bartram, & Yang, 2006; Hofstede, 1993; House et al., 1997; Javidan & House, 2001; Pillai et al., 1999; Scandura & Dorfman, 2004; Shackleton & Ali, 1990). This body of research has dwarfed the universal perspective of leadership by showing that leader values, attitudes, behaviours, and efficacy differ across societal cultures (Boyacigiller & Adler, 1991; Hofstede, 1980b). The claim that there are differences in leadership and managerial processes is founded on the assertion that societal norms and values influence the behaviour of individuals, groups, and organizations within societies on one hand, and the degree to which such behaviours are viewed as legitimate, acceptable, and effective on the other (Hofstede, 2001; Triandis, 1995).

Cross-cultural leadership research suggests a strong linkage between culture and leadership processes in that cultural forces influence the choice of behaviours exhibited by leaders and the effects of leadership. It has been argued that leader behaviours reflective of collective values tend to be more acceptable and effective than behaviours that represent conflicting values (Dorfman et al., 2012; Dorfman et al., 2010; Javidan et al., 2006; Javidan & House, 2001). For example, managers in Asia place a strong emphasis on paternalistic behaviour and group-oriented activities (Dorfman & Howell, 1988; Schweiger, Sandberg, & Ragan, 1986), which is consistent with paternalistic power distance and in-group collectivist values in Asian societies. Likewise, employees in gender egalitarian and low power distance societies tend to be more receptive to leader behaviours that are congruent with high scores on these dimensions (House et al., 2004).

There are certain other studies (Dorfman et al., 1997; Fu & Yukl, 2000; Javidan & Carl, 2005) that hold that both universal and culture specific perspectives are valid in the study of leadership across societies. These studies point out that universal leader behaviours exist, but certain leadership behaviours are more preferred than others in certain societies. Together, the above studies underscore the importance of understanding cultural differences in the leadership process.

Societal-Level Effects

The culture specific leadership view describes national culture as an important contextual factor that could directly influence the leadership process (Ardichvili & Kuchinke, 2002; Brodbeck et al., 2000). Several studies argue that there is a direct effect of culture on leadership styles (Fu & Yukl, 2000; Hanges, Lord, & Dickson, 2000; House et al., 1997; Smith & Peterson, 1988).

Based on a comprehensive literature review, Triandis (1994) concluded that cultural values could strongly influence the optimum leadership profile in a country. The author noted that employees in countries characterized by individualist values have a strong preference for freedom and autonomy, while employees in collectivist cultures favour in-group harmony and security. Offerman and Hellmann (1997), in their study based on survey data representing 39 different countries, found that PD had a negative relationship with leader behaviours related to team building, delegation, approachability and leader communication; and UA had a positive link with leader control but was negatively related to other behaviours such as delegation and approachability. In a sample of middle managers representing 54 countries, House et al. (1999) found that collectivism had a positive association with team-oriented leadership, and UA and PD were negatively related to

leader participative behaviour. A recent study on cultural tightness-looseness and perceptions of effective leadership revealed that cultural tightness is positively associated to the endorsement of autonomous leadership and negatively related to the endorsement of charismatic and team leadership (Aktas, Gelfand & Hanges, 2015)

Cross-cultural leadership studies have also recognized that cultural differences may enhance or diminish the impact of leadership styles on employee outcomes (Elenkov, 1998; Elenkov & Manev, 2005; Hofstede, 2001; House et al., 1997; Javidan et al., 2006). This argument suggests that employees with diverse cultural backgrounds tend to react differently to different aspects of the job (Robert, Probst, Martocchio, Drasgow, & Lawler, 2000) and the success of leadership is dependent on an appropriate fit between leadership factors and the norms and values prevalent in a society (Dorfman et al., 2010). The underlying premise for this research is that values associated with a society's culture can shape beliefs about what behaviours, styles, skills, and personality traits characterize effective leadership (Javidan et al., 2006). Thus, followers' receptivity to certain leadership styles may be contingent upon the cultural context within which leadership is enacted (Gelfand, Bhawuk, Nishii, & Bechtold, 2004). The findings of many cross-cultural leadership studies underscore the importance of fit between national culture and leadership. Based on his findings of a cross-cultural study, Elenkov (1998) argues that leadership behaviours are differentially acceptable and effective across cultures. The author suggests that people in egalitarian societies tend to prefer participative leadership, while in a high PD context, authoritarian and directive leadership is likely to be more acceptable and effective.

Individual-Level Effects

The majority of studies that have addressed the main effects of culture on leadership tend to relate leadership to shared rather than individual-level values. The expectation of link between individual-level values and leadership is founded on the premise that individuals are not just cultural robots. Even within each society, there is a range of value profiles that reflect individual idiosyncrasies such as heritage, personal and professional affiliations and socioeconomic level (Schwartz & Bardi, 2001). The key values that are important to a person help him/her perceive a situation, and he/she will interpret and react to a given situation in the light of the priorities assigned to various values (Schwartz, 1996). Thus, it is increasingly insightful to identify individual differences among managers in the degree to which leadership styles can be traced to differences in individual level cultural orientations. There is a scarce number of studies that have examined the direct effect of individual level cultural values on leadership. For instance, Chan and Drasgow (2001) investigated the connections between horizontal individualism and vertical individualism and various dimensions of motivation to lead using samples of military recruits and junior college students in the US and Singapore. In a similar vein, Pillai and Meindl, (1998) examined the relationship between individual level collectivist values and leaders' charismatic behaviour and found that collectivism and charismatic leadership had a positive relationship.

Contrary to the prevailing wisdom to alter leadership behaviours to fit the cultural profile of a particular country in which leadership is performed, a few studies show evidence for the notion that follower individual level cultural values play an important role in the relationship between leadership and follower outcomes (Nahum-Shani & Somech, 2011; Walumbwa & Lawler, 2003). This research indicates that individual level cultural values act as potential facilitators or barriers for leadership effects by influencing follower

positive or negative evaluation of different leadership behaviours (Farh, Hackett, & Liang, 2007; Rubin, Munz, & Bommer, 2005; Walumbwa, Lawler, & Avolio, 2007; Wasti, 2003). Accordingly, it has been suggested that the degree to which leadership behaviour is conducive to follower positive outcomes depends to a greater extent on the congruity of such behaviour with a follower's cultural orientation (Walumbwa et al., 2007). Thus, to elicit positive reactions from followers, leaders need to learn how followers' individual level cultural values shape their reactions to leadership (Kirkman et al., 2009; Mustafa & Lines, 2014).

Cross-Level and Interaction Effects of Culture

Cross-Level Effects

The importance of the main effects of culture on the leadership process has been well recognized by the previous research (Offerman & Hellmann, 1997; Scandura & Dorfman, 2004). However, previous studies on cross-cultural leadership have generally not offered a clear explication of the issues related to levels of analysis (Yammarino, Dionne, Chun, & Dansereau, 2005). In cross-cultural leadership research, it is quite uncommon to investigate relationships from a cross-level perspective in a single study. For instance, the link between culture and leaders' innovative behaviours has been examined only at the country level (Elenkov & Manev, 2005). Societal level culture may be related to innovative behaviours, but values at individual level might have stronger implications for such behaviours. The reason for this is that values that are related to one's freedom of thought, creativity and intellectual stimulation may be strongly influenced by personal idiosyncrasies such as intellectual capacities (Sternberg, 1999), and personality and social standing of the family (McCrae & Costa, 1997) rather than by cultural norms. Although there might be societal norms in pursuing such activities, these norms may not entail strong societal judgments (Fisher, 2006).

Likewise, in many recent studies, the impact of collectivism and traditional values on leadership effects has been examined only at the individual level (Spreitzer, Perttula, & Xin, 2005). Collectivist and traditional values may have implications for leadership at the individual level, given that every cultural dimension is likely to have an individual analogue (Triandis, 1995). But, investigating societal level effects is important because norms guiding individual affect and behaviour often develop at societal level. For instance, traditionality captures deference to authority originating from a societal frame of reference, carrying many cultural and moral overtones (Farh, Hackett, & Liang, 2007). Traditional values reflect a moral obligation to fulfil the normative expectations of a prescribed role to preserve social harmony and advance collective interests (Schwartz, 1992). Like traditionality, collectivism also originates from a broader societal and familial frame of reference. Individuals in collectivist cultures are more attentive to the behavioural demands of the society and in order to gain social acceptance they engage in behaviours that are less discrepant from other societal members (Yaveroglu & Donthu 2002). According to Bontempo and Rivero (1992), societal norms are more effective than individual values in predicting behaviour in collectivist cultures. The above suggests that societal culture will have a pronounced effect on individual behaviour in cultural contexts where values are more traditional and collectivist.

Culture can also have implications for leadership at both societal and individual levels of analysis. For instance, in masculine societies, high performance and achievement are

strongly emphasized (Kale & Barnes, 1992), and people who are less success-oriented are likely to be exploited. Thus, in relation to masculinity, it is important to fit in with the culturally dominant values to some degree. At the same time, it has been argued that masculinity, which reflects motives for success and advancement, is also manifest at the individual level (e.g., Spence, 1983; Mustafa & Lines, 2014). Likewise, societal level PD has been argued to have a predictive ability on leadership processes (Hofstede, 1980a). Dorfman et al. (2012) contend that in cultures characterized by hierarchical values, employees are more accepting of leadership styles that involve issuing directives instead of consulting and empowering subordinates. Research by Kirkman et al. (2009) suggests that employee individual values regarding hierarchy in organizations exert a strong influence in shaping their reactions to their leaders' behaviours.

Interaction between Societal and Individual-Level Values

Individuals in all national societies encounter issues of conflicts and compatibilities between their individual value priorities and the values that are espoused at the societal level. National culture might encourage the activation of values that are in line with the cultural profile of the country, whereas values that run counter to those cultural priorities are discouraged (Schwartz, 1994). Smith and Schwartz (1997) contend that national culture influences the magnitude of the effects of individual values. Yielding to normative pressure even when a behaviour is not consistent with one's individually held values, weakens the value-behaviour relationship (Bardi & Schwartz, 2003). According to Molinsky (2007), norms for a behaviour in a national society facilitate or make it impossible for an individual to act in a manner that corresponds to his or her personal value system. Taras, Kirkman, and Steel (2010) take a different line of reasoning to explain the effects of cultural values under different societal conditions. In their meta-analysis, the authors noted that cultural tightness strengthened the relationship between cultural values and outcomes for culturally tighter rather than culturally looser societies. Referring to such a moderating effect by cultural tightness, the authors contend that this is because of the lower flexibility afforded by tighter societies to its members in the expression of their cultural values and outcomes (Gelfand, Nishii, & Raver, 2006)

The above studies provide a basis for suggesting that societal culture has the capacity to weaken or strengthen the relationship between individual values and behaviours, but their analyses focus on general categories of behaviours and do not investigate the interplay between leaders' individual-level values and societal culture. The effects of individual values are likely to be amplified when these correspond to particular societies' cultural characteristics. Such an accentuation might be due in part to a parallelism between leader individual values and the societal context and the cues that are provided and maintained in the societal context. This suggests that when a leader's personal values are consistent with societal norms, the society in which one enacts leadership will encourage the activation of such values, and the behavioural demands in the society will facilitate him/her to behave both appropriately and in accordance with his or her core system of values (Molinsky, 2007). On the other hand, when a leader's individually held values are inconsistent with the societal norms—that is, when the behaviour the leader must enact in order to act according to societal expectations conflicts with individual values—the individual effects are less likely be accentuated. For example, the effects of allocentric values will be ampli-

fied in collectivist societies because allocentric characteristics are more likely to be mirrored in other societal members and thus reinforced or activated in a more collectivist societal context. Likewise, the effects of an individual orientation to UA orientation are more likely in societal contexts characterized by high UA, because such contexts provide few cues beneficial to novelty and experimentation, yet offer ample cues that activate risk-avoiding tendencies.

Leader-Society Congruence

Over the last few decades, considerable research effort has been invested into understanding the ways through which culture can have an impact on leadership. Several studies argue that there is a direct effect of culture on leadership, suggesting that societal members internalize cultural values as they grow up in their cultures (Hanges, Lord, & Dickson, 2000; Smith & Peterson 1988). Cultural values and norms specify what behaviours are desirable for members of the culture in their relationships with others and, as such, culture also restricts the options of appropriate behaviours and actions available to leaders (Swidler, 1986; Yukl, 2006).

There are, however a few studies (House et al., 1997; House et al., 2004; Mustafa and Lines, 2013a) that have suggested various intervening processes through which the effects of societal culture are realized in terms of culturally congruent leadership. House et al (2004) argued that an important route via which culture may influence leadership is through its effects on the implicit leadership theories held by members of the society (Javidan & Carl, 2005; Lord & Maher, 1991). House and colleagues showed that individuals in a society tend to develop a common implicit theory of leadership that is a set of attributes and expectations used as parameters to evaluate their leaders. Thus, people in a particular culture are likely to develop a collective agreement on effective and ineffective leadership processes. Such agreements turn into social influences for the members to produce certain behavioural orientations (House et al., 1997), and as such, leaders tend to engage in behaviours that align with the respective societies' expectations (Dorfman, Sully de Luque, Hanges, & Javidan, 2010).

Mustafa and Lines (2013a) suggest that the effects of societal values on leadership are mediated through processes such as value internalization, experiential learning and external regulation. These processes include an internal drive exerted by a leader's individual values to behave according to the norms and expectations of the native national culture; a leader's gradual learning of followers' values and developing behavioural alternatives consistent with followers' value systems; and a leader's behaving appropriately in response to the legitimizing effects of the society in which the leadership is enacted. In addition to proposing a culture-leadership link driven by the above processes, the study also explores the indirect effects of societal culture. It suggests that cultural value dimensions may exert influence on leadership-cultural congruity through interaction with the mediating processes and the strength of such congruity may vary in different cultural settings.

The above studies offer deep insights into how leadership styles become congruent with societies' culture, but for a more in-depth understanding of such congruency the rationales suggested need more theoretical density and conceptual clarity. For instance, House et al (2004) provide the justification that leaders tend to act in ways that match the expectations of their respective societies, because being members of the same society they share the group's implicit criteria for distinguishing between effective and ineffective

leader attributes. This process may yield valid mental representations of follower values to the extent that leaders are similar to followers in this respect. One might expect a shared categorization process among the people of a particular society because they are socialized to fit in with the cultural milieu in which they are embedded. Likewise, one of the mechanisms suggested by Mustafa and Lines (2013a) is an experiential learning process by which leaders are thought to explore followers' values by observing their reactions, and subsequently develop behavioural alternatives presumed to be consistent with these value systems. Research on the formation and updating of implicit theories, in particular implicit person theories, indicates that this view is overly optimistic. Also the broader literature on learning in organizations has identified several ways in which known preconditions for the generation of valid knowledge often are violated in organizational settings (e.g., March & Olsen, 1975). From the research on implicit person theories it is known that people often hold and defend highly simplistic models of others and such models are persistent even in the presence of experiences that seemingly contradict their content (e.g., Haslam, 2006). People have a general tendency to accord a simpler mental life to others, see others' behaviours as more driven by global dispositions than by contextual influences or rational deliberation, and often use self- knowledge to make inferences about others. This alludes to a link between leader personal values and their perception of follower values on the one hand, and a link between personal values and leadership behaviour on the other. Future studies might disentangle these processes and assess their relative contribution to the observed relationship between perceptions of follower values and leadership behaviour.

Emergence of Leader-Society Value Congruence

There is a broad consensus among researchers that societal culture plays an important role in shaping individual values and perceptions of societal members (e.g., Hofstede, 1980b; Javidan & House, 2001). However, the intensity of such influence is thought to differ across cultures. Convergence between individual and collective values is generally presumed to be high in collectivist, traditional and tight cultures because of a strong group focus and/or strength of social norms in such cultures. According to Triandis (1995), individuals in collectivist cultures tend to align their personal goals closely with the goals of the collective more than their counterparts in individualist cultures. Likewise, role obligations and other normative influences in traditional cultures are thought to influence the development of individuals' collective identity (Westwood, Chan & Linstead, 2004). In such societies, people attempt to harmonize social expectations with individual preferences (Vauclair, 2009; Yao & Wang, 2006), which tends to produce a close alignment between personal and societal values.

Gelfand and colleagues (2006, 2011) argue that culturally tighter societies offer less flexibility to its members in the expression of their individual attributes. On the other hand, individuals in loose cultures are allowed to exhibit greater variability in idiosyncrasies. As a result of differences in flexibility, individuals in culturally looser societies express high variance in attributes, while individuals in tights cultures tend to show greater homogeneity in individual attributes such as cultural values (Gelfand et al. 2006; Gelfand et al. 2011). This suggests that members in tight cultures might closely share norms and values that characterize their society.

From the above studies it is evident that people's values and psychological tendencies develop in such a way that their overlap with societal values tends to be more salient in certain cultures compared to others. Conspicuously absent from these studies, however, is an attempt to provide a comprehensive explication of the mechanisms of how leaders' individual cultural values become congruent with the societal culture. An exception is Mustafa and Lines' (2015) study that has attempted to provide a conceptual framework of leader-society congruence by integrating the cultural dimensions, self-construal and communication pattern. However, the work needs more theoretical density for the following reasons. Congruence between a leader's individual cultural values and societal values is as important as incongruence between them. The significance of congruence depends on the limitations associated with incongruence. Therefore, it could enhance the theoretical rigor of the study if incongruence were also taken into account. That is, which cultural dimensions promote incongruence through self-construal and communication pattern?

Leader-society Congruence Effects

While cultural congruence is often assumed to contribute to the increased effectiveness of leaders, it is not clear what factors connect culturally congruent behaviour and follower positive outcomes. Many past studies have examined congruity between leadership and societal culture, but the bulk of this research (e.g., Dorfman, Hanges, & Brodbeck, 2004; House et al., 2004; Javidan et al., 2006; Javidan & Carl, 2004; Pasa, Kabasakal, & Bodur., 2001) has mainly focused on assessing the effects of leadership-culture fit without offering conceptual clarification of the processes via which such effects are transmitted. Implicit leadership theory, which posits that leadership is understood by a cognitive categorization process through which individuals categorize the attributes that distinguish between effective and ineffective leaders (Den Hartog et al., 1999; Lord, Foti, & De Vader, 1984; Phillips & Lord, 1981) provides one of the major explanations of how leadership-culture congruence might result in positive outcomes. House et al (2004) extrapolate such categorization to societal level and suggest that members of a culture tend to develop a common implicit theory of leadership. The authors further argue that a leader is likely to have a high acceptance among the members of a culture, if his/her actions and attributes closely fit with the group's implicit criteria. It is, however, not clear how positive outcomes might result in acceptance of the leader as a result of a match between leadership behaviours and members' internal categories of leadership attributes. Does such acceptance lead to attraction for the leader, or it is because of enhanced trust, improved communication or some other processes that operate at affective or cognitive level?

Using the above logic of congruity of leader attributes to members' implicit criteria, Aktas, Gelfand and Hanges (2015) argue that leaders will be effective in different ways in tight and loose cultures. For instance, they suggest that charismatic and team leadership attributes will be perceived as more effective in loose (compared with tight) cultures. The study however seems to lack conceptual clarity for the following reasons. As argued by Gelfand et al. (2006, 2011), loose cultures are more accepting of discrepancy from societal norms. As such between-person variance in such cultures will be high in terms of individual attributes and expectations, and because of such divergence across individuals there will be greater variance in perceptions regarding what type of behaviour, attitudes and attributes might be seen as acceptable or unacceptable. Given the characteristics of loose cultures, it is unrealistic to expect that such cultures will have any significant effects on the

development of shared categories of effective leadership prototypes. Thus, it seems far-fetched to suggest that people in loose cultures will develop similar prototypes of effective leadership, and based on such a common categorization of the leadership attributes they will only be attracted to a certain set of leadership behaviours. Rather, one might expect much variance in people's categories of leadership attributes when judging whether leaders are effective or ineffective.

Drawing on the concept of value congruence, Mustafa and Lines (2013b) suggest that various mechanisms that link value congruence to organizational outcomes (Edwards & Cable, 2009; Meglino & Ravlin, 1998) may also be extrapolated to the societal level to present a clear picture of the effects of leadership-culture congruence. These authors argue that evaluating congruence along certain cultural dimensions may be more useful in addressing the issue of leadership-culture congruity effects for the following reasons. First, employees are more sensitive to what they sense than by what they see and hear (Fu et al., 2010). They will respond negatively if leaders just tailor their actions for smooth interaction but hold values that are inconsistent with fundamental cultural assumptions of followers. To leverage high levels of positive outcomes, cultural adaptation should transcend a temporary shift in one's frame of reference to integrating elements of the other culture into one's own. Secondly, congruence in cultural values may be more important for leaders in their relationship with followers than just behaving in a culturally correspondent way, because people tend to gradually shift their focus from readily detectible to deeper level attributes when they closely interact with others (e.g. Jackson, 1996). Thirdly, cultural adaptation is beyond tailoring one's behaviours but involves adjustment that results from touching deep-rooted cultural assumptions and dispositions. Thus, efforts to produce culturally congruent behaviours may be difficult to implement in a natural way and followers may suspect the sincerity of such efforts (Thomas & Ravlin, 1995). Fourth, acting in a culturally consistent manner may lead to identity conflict if leaders' individually held values are highly incongruent with the values of the societies in which they operate (Molinsky, 2007).

Mustafa and Lines (2013b) provide a sophisticated view of the leader-society value congruence effects and the variance of these relationships across cultures; nonetheless, the study seems to have certain conceptual limitations. In discussion of the greater importance of congruence (and lack of variability) in some cultures compared to others, the authors suggest that in-group/out-group categorization is not evident in individualistic societies because such people place higher interest on personal agendas. It was concluded that managers with values more compatible with societal values would be a greater source of attraction for followers in collectivist cultures than for those from individualist cultures. Generally, this implies that people in individualistic cultures are more attracted to transactional leaders/managers. However, certain attributes of transformational leadership are known to be largely universally accepted across cultures (Den Hartog et al., 1999). Earlier empirical evidence has shown that transformational leadership was associated with positive outcomes both in collectivist (Lim & Ployhart, 2004) and individualistic (Bass, Avolio, Jung, & Berson, 2003) societies. Thus, the implication that transactional leadership is more related to individualist cultures does not seem to be supported.

Moreover, the study posits that the value of leader-society value congruence will be higher in some cultures than others because of the conducive effects of such cultures on

interpersonal attraction, predictability and interpersonal communication. However, their theorizing seems to offer an incomplete picture of leader-society congruence effects in view of the earlier assertions that people in all cultures tend to have positive/negative evaluations of their leaders, but such evaluations are cognition-based in some cultures and inference-based in others (Lord & Maher, 1991; Yan &Hunt, 2005). Thus, it can be surmised that all cultures may promote the above mechanisms but the bases of these mechanisms may vary across societies. For instance, interpersonal attraction may lead to positive outcomes in both collectivist and individualist cultures, but people in collectivist cultures may develop an affect-based attraction while people in individualist cultures may develop a cognition-based attraction.

CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although the effects of cultural values on the leadership process have been well-documented, certain issues still need attention.

First, the existing cross-cultural leadership studies have stressed strong connection between leadership factors and the societal norms and values, but there have been negligible attempts to clarify these linkages in order to create a complete picture of how leadership styles become congruent with societies' culture. Thus, more theory development is needed to conceptually clarify the underlying processes that are responsible for producing correspondence between leadership styles and societal culture.

Second, the majority of studies that have addressed the culture-leadership linkage tend to relate leadership to societal rather than individual cultural orientation. The bulk of this research has tried to address the relationship between culture and leadership by capturing the degree to which managerial attitudes and behaviours vary across societies (e.g., Javidan & Carl, 2004). The few studies that have examined the relationships at the individual level of analysis have mainly focused on testing direct and moderating effects of collectivist/individualist values. Beyond individualism–collectivism, only sparse attention has been invested in exploring the connections between other values and leadership.

Third, most studies in the field of cross-cultural leadership have concentrated on examining the relationship between culture and leadership at either societal or individual level, and there is a lack of research on different cultural value effects across levels (Yammarino et al., 2005). A few studies that have examined the cross level effects have used country as a proxy of culture (e.g., Kirkman et al., 2009). According to Kirkman et al. (2006), lack of research on cross-level effects of culture is due to the absence of sufficient theory about the effects of cultural values at both the individual and societal levels of analysis. Further, in the cross-cultural leadership domain, examining the interaction effects of cultural values at societal and individual level of analysis is incredibly rare. For example, none of the studies examined the moderating effects of societal level values on leaders' individually held cultural values as they relate to leadership behaviours. There exist no compelling theoretical reasons to suspect that societal and individual level cultural values exert influence on outcomes independent of each other. In fact, examining interactions among societal and individual level cultural values might provide insights into the complex relationship between the two levels of analysis. There may also be important cross level interactions among different cultural values. It is important to explore these interactions, because

societal level culture seems to reinforce the effects of certain individual level variables and weaken the effects of certain others.

Moreover, the current literature does not provide a deeper understanding of the potential causal relationships between cultural context and member-society value congruence. Thus, little is known about how leaders' cultural orientations become congruent with the societal culture, and whether the degree to which leaders' individual level values correspond to the values of the larger society varies across cultures. Given the current state of literature, formulating theoretical rationales concerning how leader-society value congruence is produced and why in some cultures value congruence occurs more than others, is important.

Finally, the major focus of existing cross-cultural leadership studies has been on the practice-culture fit and its outcomes without conceptually clarifying how such congruence affects leadership success within and across cultures. There have been negligible attempts to draw on the concept of value congruence to provide explanations of the leader-society value congruence effects. Addressing the issue of congruity from the perspective of values may offer a deeper understanding of the underlying processes that potentially transmit the effects of leader-society congruence on outcomes.

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Proactive and Reactive Attitude to Crisis: Evidence from European Firms

Jan Brzozowski, Marco Cucculelli

ABSTRACT

Objective: The aim of this study is to investigate the behaviour of European firms in the time of the economic crisis in 2008-2009. We analyse the determinants of proactive strategies in the context of innovation and the range of products offered by every firm on the market.

Research Design & Methods: Based on a large and representative sample of 14 750 (EFIGE dataset) firms from Austria, Germany, France, Hungary, Italy, Spain and the UK, we estimate the logit model for two measures of proactive strategy: the investment behaviour and the introduction of new products on the market.

Findings: We find evidence that the experience of the former crisis by the company is associated with the adoption of proactive behaviour in the case of investments in innovation, and reactive behaviour in the case of the product offer range.

Implications & Recommendations: As the public support for innovative investments proved to be rather ineffective, the most promising direction for public policies in the times of crisis are those that facilitate the access to external financing.

Contribution & Value Added: Our paper contributes to the development of knowledge on the dynamics of company behaviour in the wake of the economic crisis in 2008, and to the better understanding of the determinants of proactive behaviour of enterprises within the context of rising uncertainty.

Article type:	research paper
Keywords:	proactive behaviour; crisis reaction; investment; product introduction
JEL codes:	C51, D81, L26

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INTRODUCTION

Economic crisis has usually a detrimental effect on firms' performance, employment and innovative activities. However, for some companies recession can be perceived as a chance to increase their competitiveness: while most of the rivals are cutting the expenditures on R&D, the firms "swimming against the stream" might get additional benefits, especially after the economy recovers from the crisis. Thus, proactive response to recession can be a key to the economic success in the long run. The results of the study carried out by Archibugi, Filippetti and Frenz (2013) in the UK clearly show that innovative firms in 2008 were usually those which were innovators before, but this group is complemented by recently-founded fast growing firms. Consequently, those gazelles in the times of the economic downturn tend to become more innovative in order to exploit their growing potential when the economic situation improves.

Still, what is missing in this picture is more general linkage between the economic crisis and an active search for an economic opportunity, especially in the international setting (Wach, 2015). This search for new opportunities can be understood in a broader sense as the widening of the product offer, the introduction of a new innovation, or an increase in the internationalisation process. For instance, the expansion to foreign markets is usually carried out in the times of the economic boom, as it requires substantial investments and costs. However, the fact of being already economically active on the international level during the economic downturn offers new perspectives not only for the firm survival, but also for its further development (Mainela, Puhakka & Servais, 2014).

The aim of this study is to investigate the behaviour of European firms in the time of the economic crisis in 2008-2009. We use quantitative methods for our research, namely the econometric analysis. Based on a large cross-sectional, representative sample (EFIGE dataset, cf. Altomonte & Aquilante, 2012) of European companies we analyse the determinants of proactive strategies in the context of innovation and the range of products offered by each firm on the market. Consequently, our analysis contributes to the growing literature on international entrepreneurship and opportunities by inspecting factors that contribute to the search and creation of international opportunities.

The structure of our paper is as follows: in the second section we summarise the theoretical discussion on firms' reaction to crisis and we build hypotheses for our study. In section three, we present methods and our dataset. In section four, we describe the results of empirical analyses. In the last section we summarise our findings and present some perspectives for further research.

LITERATURE REVIEW

The literature on firms' reaction to recession is dominated by financial research, and more precisely, by studies that evaluate the effect of different ownership and governance models on firms' performance (and value) during economic crises (Leung & Horwitz, 2010; Liu, Uchida & Yang, 2012). Surprisingly, there are only few papers (Smith & Elliott, 2007; Latham, 2009; Marsen, 2014) that investigate firms' reaction to crisis, by adopting the lens and paradigms of international business and entrepreneurial studies.

The first type of research describes the firm reaction to crisis within the uncertainty concept. Carbonara and Caiazza define uncertainty as "a situation in which operators have limited knowledge to exactly describe existing state or future outcome" (Carbonara & Caiazza, 2010, p. 38). As such, uncertainty is present at every stage of entrepreneurial activity, but increases substantially at the times of the economic turmoil and recession. When the uncertainty increases, the need for the firm to re-evaluate the existing strategies and ways of doing business also rises. In such a situation, proactive behaviour is welcome, as it might help the enterprise not only to survive, but also to grasp extraordinary opportunities which would remain hidden for passive actors. The authors propose a framework of financial firms (banks) based on the perception (high/low) and reaction (proactive/reactive) to uncertainty. Thus, they identify four types of banks:

- laggards, characterised by reactive behaviour and low perception of uncertainty. Those banks tend to gradually lose their market;
- consolidators – although those banks have low perception of uncertainty, they at least can adapt to a new situation by adopting proactive strategies, thus consolidating their position on the market;
- value-driven – these banks have high perception of uncertainty, but are only able to act reactively, by adapting the existent strategies to new events with the aim of creating value;
- champions – those banks in turn have not only high perception of uncertainty, but also the ability to adopt proactive behaviour, thus "building a clear vision for a valuable future" (Carbonara & Caiazza, 2010, p. 42).

Although this framework has limited potential for usage outside the financial sector, it offers an interesting perspective for the analyses of more general reaction of firms to crisis. Thus, we can have companies which adopt reactive or proactive strategies within various aspects of their activity in the wake of an economic crisis. The ones which are reactive tend to exploit the existing opportunities by keeping their activities on already penetrated markets, keeping the same range of products and services and reducing investment spending in innovation. Proactive companies in turn are those which are acting against the general pessimistic trend and which are actively searching for new opportunities whose future exploitation might help them not only in the firm survival, but which could also facilitate the expansion when the negative trend in economy is over. We further build upon the proactiveness-reactiveness dichotomy, providing solid grounds to formulate the hypotheses for our study. Thus, we adopt the following definitions of those two contrasting strategies. Proactive behaviour of the company is associated with more risky orientation, aimed at opportunity search and creation in the times of the economic downturn. It can be particularly demonstrated by maintaining the investments in innovative processes and products, or by the expansion of the existing range of products or services. Reactive behaviour in turn is manifested through more passive, conservative and careful approaches – the reactive firm in the wake of crisis cuts down the investments in innovative activities, maintains or even reduces the existing offer of goods and products, by getting rid of the activities that bring losses, and focusing on those which seem to be a safer source of income in the short run.

Proactive and reactive strategies towards the crisis can be particularly visible in decision-making on the innovation processes within companies. Filippetti and Archibugi

(2010) show that in economic literature two contrasting hypotheses on the relation between the innovation and business cycles have been formulated. The proponents of cyclical hypothesis argue that investments in innovations are increased in the periods of prosperity and reduced when crises hit the economy. This is caused by low profit margins and the overall pessimistic view on the economic possibilities by potential investors during the downturn, while in the period of economic expansion new possibilities arise for the introduction of new ideas, technologies and products (Freeman et al., 1982) A similar way of argumentation is present in the theoretical research on the demand impact on innovation (Geroski & Walters, 1995): the rising demand during the economic boom provides more fertile ground for the product absorption than during the recession. Moreover, as firms have only a limited period of advantage over the competition (cf. Schumpeter, 1939) during which they reap their returns to investments, it is safer for them to come up with such activities when the economy is growing. On the other hand, Mensch (1979) claims that innovations tend to be rather counter-cyclical instead, as most of enterprises tend to "play safe" in the periods of economic expansion, by exploiting the existing rents. However, during the recession the value of such rents falls and then the firms are somehow forced to innovate (Filippetti & Archibugi, 2010). To conclude, the existing theoretical literature suggests heterogeneous (or even contrasting) responses and strategies towards crisis. Therefore, we can formulate the following hypotheses:

H1: The adoption of the proactive strategy by the firm depends on the magnitude of external shock, demonstrated by the size of the economic recession.

Moreover, we are aware of the potential endogeneity problem, i.e. while proactive behaviour can clearly improve the performance of the company hit by a crisis, still at a given point of time (especially in the first year of a crisis, in our case: 2008) a decrease in revenues limits the potential of proactive behaviour of the firm. Moreover, this potential of proactive behaviour varies across the categories of actions available to the company: while the cuts in expenditures are needed, in the first place they might probably affect the innovations, whose benefits to the company materialise in the longer run, rather than, for instance, the widening of the product range. Thus, we can formulate the next hypotheses:

H2: A decrease in the company revenues will increase the likelihood of the reactive behaviour of the company during the crisis.

and

H3: The likelihood of reactive behaviour of the company due to the revenue reduction will be greater in the case of innovation investment than in the case of the product range widening.

An important field of the study which also needs to be addressed is the one which proposes the concept of organisational adaptation and organisational learning within the crisis reaction framework (Cucculelli & Bettinelli, 2015). The proponents of organisational learning claim that former events and experiences affect the company governance, and this in turn influences the decision-making in the company. Consequently, if the company has been already hit by a crisis before, this should have an impact on the current behaviour and in the adoption of proactive and reactive strategies in various areas of the

company activity, based on the previous experience of the company in such situations as the direction of this linkage is uncertain. This enables us to build the following hypothesis:

H4: The experience of the former crisis by the company matters for the adoption of the proactive or reactive behavior.

MATERIAL AND METHODS

In our study we use the data on European firms collected within the EFIGE project (European Firms in a Global Economy: internal policies for external competitiveness, henceforth: EFIGE dataset). This data-set includes the results of a representative survey carried among 14 750 companies having at least 10 employees in seven European countries (Germany, France, Italy, Spain, the United Kingdom, Austria, Hungary). The survey was made in 2010 and it includes a rich variety of information on firms' organisational, R&D and innovative behaviour for the period of 2007-2009 (Altomonte & Aquilante, 2012). This initial, cross-sectional data-set has been enriched by panel dimension, including information on sales, finances and employment for the 2001-2009 period. The panel dimension of the data enables us to include the information on former performance of

Table 1. Descriptive statistics

Variable name	No. Obs.	%
Countries		
Austria	443	3
France	2973	20.14
Germany	2935	18.89
Hungary	448	3.31
Italy	3021	20.47
Spain	2832	19.19
UK	2067	14.01
Age		
Less than 6 years	1043	7.07
Between 6 and 20 years	5194	35.19
More than 20 years	8552	57.74
Turnover in 2008		
Less than 1 million Euros	1856	12.69
1-2 million Euros	3264	22.32
2-10 million Euros	6336	43.33
10-15 million Euros	921	6.3
15-50 million Euros	1346	9.2
50-250 million Euros	716	4.9
more than 250 million Euros	185	1.27
Number of employees in 2008		
10-49	10779	73.03
50-249	2970	20.12
over 250	1010	6.84

Source: own elaboration.

the companies before the 2008-2009 crisis, including the 2002-2003 recession. The descriptive statistics, including information on the firms' geographical location, age and employment size, as well as turnover are provided in Table 1. The most represented in the sample are the companies from Italy, which account for ca. 20% of the total. The majority of the sample (57.7%) is composed by well-established companies which have been operating on the European market for more than 20 years. Moreover, most of the companies belong to the SME category, with the turnover below 50 million EUR in 2008 and fewer than 250 employees in the same year.

We adopt two measures of proactive behaviour: investments in innovation continued in 2009 (dummy) and product offer expanded in 2009 (dummy). The operationalisation of those variables is based on the responses to questions c29[1] and Ea[2] taken from the EFIGE questionnaire. Therefore, we estimate two equations for two different dependent variables. As our dependent variables are binary, we adopt binomial logit regression models. The results of the estimation are presented and discussed in the following section.

RESULTS AND DISCUSSION

The results of the estimation of two models accounting for proactive behaviour (i.e. investments in innovation continued and product offer expanded) are presented in Table 2. Due to some missing observations for several independent variables included, the number of observations for both models has dropped to 13 439. We first describe the model in which the dependent variable is the investments in innovation continued. For this model, the most important determinant were the proxy variables for external shock for the companies, represented by country dummies[3] and dummies for international activities. The likelihood of keeping the investments in innovations was lowest in Spanish and Italian companies, and in the case of exporting firms. Size matters for decisions on innovation, but not the age of the company: the firms with higher turnover were more able to keep the innovative investments than the smaller ones. According to our expectations, the percentage of the company's turnover reduction had a strong negative impact on the dependent variable: in the critical situation, the cuts in innovations – which should bring advantages only in the mid and long run – were the most pronounced. Interestingly, family-owned and family-managed companies were more likely to reduce such investments, other things being equal. Any change in decision-making in the company was associated with the reduction in investments: in the case of more centralised decision-making in 2008 the effect was much stronger than in the decentralised one.

An important finding is about the impact of former innovative activities on current ones in the wake of crisis. Surprisingly, we have found the companies that have invested in processes, market or organisational innovations in the years 2007-2008 were more likely to cut investments in innovations in 2009, which is the opposite result to findings

[1] "During 2009, did your firm decide to postpone investments in product or process innovation?" – the answer "no" accounts for proactive behavior (value 1), while yes for reactive one (value 0).

[2] "Always referring to the last year the product range offered by your firm has been…" - the answer "widened" accounts for proactive behavior (value 1), while other (remained the same/has decreased) for reactive one (value 0).

[3] In the case of country dummies, the UK was the reference category.

Table 2. Results of binomial logit regression on proactive behaviour

Independent variables	Dependent variable: investments in innovation continued		Dependent variable: product offer expanded	
Age of the company	0.013	0.032	-0.082**	0.032
Turnover reduction in 2008 (%)	-0.364***	0.018	-0.147***	0.018
Exporter (dummy)	-0.145***	0.051	0.205***	0.050
Importer of materials (dummy)	-0.066	0.044	0.236***	0.043
Importer of services (dummy)	-0.148***	0.049	-0.027	0.049
Passive outsourcer (dummy)	-0.074	0.046	0.041	0.046
CEO in the family firm (dummy)	-0.094**	0.043	0.068	0.042
CEO is male (dummy)	0.080	0.072	-0.054	0.071
Age of the CEO	0.013	0.019	-0.007	0.019
Decentralised management (dummy)	-0.027	0.046	0.167***	0.045
Decision-making became more centralised in 2008 (dummy)	-0.429***	0.049	0.090*	0.050
Decision-making became more decentralised in 2008 (dummy)	-0.246***	0.076	0.160**	0.078
Austria (dummy)	0.025	0.137	-0.359***	0.133
France (dummy)	-0.176**	0.080	-0.345***	0.079
Germany (dummy)	-0.122	0.081	-0.254***	0.078
Hungary (dummy)	-0.023	0.121	-0.334***	0.120
Italy (dummy)	-0.233***	0.083	-0.124	0.082
Spain (dummy)	-0.557***	0.084	-0.384***	0.085
Specialised industry (dummy; traditional industry reference)	-0.082	0.053	-0.002	0.053
Economies of scale industry (dummy)	-0.076	0.047	-0.000	0.047
High-tech industry (dummy)	0.097	0.100	0.368***	0.099
Employment level 2008	-0.001*	0.000	-0.001***	0.000
Turnover in 2008	0.194***	0.023	-0.020	0.022
Share of sales in 2008 made by core product/business (%)	0.002*	0.001	-0.001	0.001
Share of ownership of main owner (%)	0.003***	0.001	-0.001**	0.001
Share of turnover invested in 2007 (%)	-0.003**	0.001	-0.001	0.001
Firm benefited from public support for investment in the period 2007-2009 (dummy)	-0.020	0.055	0.094*	0.056
Firm invested in product innovation before (dummy)	-0.067	0.054	0.988***	0.052
Firm invested in process innovation before (dummy)	-0.227***	0.045	0.309***	0.045
Firm introduced market innovation before (dummy)	-0.145**	0.057	0.354***	0.056
Firm introduced organizational innovation before (dummy)	-0.317***	0.048	0.191***	0.048
Firm requested new credit in 2008 (dummy)	-0.765***	0.096	0.018	0.097
Firm obtained credit in 2008 (dummy)	0.551***	0.108	0.296***	0.110
Self assessment of the industry from external financing	-0.098***	0.016	0.004	0.016
Self assessment of the quality of provided products and services	0.003**	0.001	-0.002	0.001
Firm went through quality certification in 2008 (dummy)	-0.085**	0.042	-0.053	0.041
Firm was hit by crisis in 2002-2003	0.126**	0.051	-0.087*	0.051
Share of the employees with permanent contracts in 2008 (%)	-0.001	0.001	-0.000	0.001
Managers are rewarded with bonus (dummy)	-0.139***	0.044	0.100**	0.043
Foreign work experience of executives (dummy)	-0.118**	0.051	0.086*	0.051
_cons	1.257***	0.224	-0.106	0.221
R2	0.0817		0.1188	
N.obs.	13439		13439	

note: *** p<0.01, ** p<0.05, * p<0.1

Source: own study.

of Archibugi, Filippetti and Frenz (2013). Still, the explication of such reactive behaviour can be quite simple: such firms might have decided that as the competition is cutting such expenditures, their competitive advantage gained in 2007-2008 period is more than

enough to survive during the recession. Another interesting discovery is the one on former experience during the 2002-2003 crisis. The firms that were negatively affected by the crisis in the past periods were actually more likely to invest in innovation in 2009. Finally, the access to external financing is obviously important: when the firm was able to obtain a credit in 2008, it is definitely more likely to invest in innovative activities.

In the case of the second model - with the dependent variable product offer expanded - the age of the company is negatively associated with proactive behaviour, but the level of turnover in 2008 (proxy variable for size) is not significant, while the impact of the employment size in 2008 (another proxy variable for size) is significant, but of marginal importance. According to our expectations, the size of the turnover reduction in 2008 has a negative impact on product range widening (i.e. the second model), but to a lesser extent than on the investments in innovation (the first model). Also the internationalisation of the company plays a different role in this regard. Exporting and importing companies were actually more likely to expand the product offer in 2009, as opposed to decisions on innovative investments for the same period.

The sector of the industry in which the firm operates matters for the decision on product range widening: high-tech firms are more likely to adopt proactive behaviour in this regard. The former innovators in the 2007-2008 period also exhibit higher proactive propensity for the product offer expansion. Still, the former crisis experience for the 2002-2003 period is in this case associated with more reactive behaviour (i.e. negative impact on the propensity to expand product offer). Consequently, these empirical results allow us to verify the hypotheses in the following section.

CONCLUSIONS

Based on the results presented above, we can now turn to our hypotheses. We have formulated 4 hypotheses for this study, namely:

- **H1:** The adoption of the proactive strategy by the firm depends on the magnitude of external shock, demonstrated by the size of the economic recession.
- **H2:** The decrease of the company's revenues will increase the likelihood of the reactive behaviour of the company during the crisis.
- **H3:** The likelihood of reactive behaviour of the company due to revenue reduction will be greater in the case of innovation investment than in the case of the product range widening.
- **H4:** The experience of the former crisis by the company matters for the adoption of proactive or reactive behaviour.

We have found some support for hypothesis 1 on the significant impact of the external shock for the adoption of proactive strategy. Still, this evidence is somehow limited by the nature of our dataset, in which the identity of firms is hidden: we could only identify the economic environment of the company by its domestic economy and the four large types of industries (traditional, specialised, economies of scale and high-tech – based on taxonomy developed by Pavitt et al., 1989). Therefore, we see a need for further investigations in this direction.

The magnitude of the company's decrease in revenues is positively associated with the likelihood of reactive behaviour: both in the case of investment and in the product offer. Therefore, we have found support for hypothesis 2. Moreover, we have demonstrated that the companies react more reactively motivated by the turnover reduction in the case of innovative investments than in the case of product offer, which supports our hypothesis 3.

Finally, we have found that former crisis experience, measured as the turnover reduction in the 2002-2003 period, matters for the adoption of proactive or reactive behaviour. However, this effect is different for two models: while for the innovative innovation it is positive – the firms affected by recession tend to continue investments in innovation in 2009 – it is negative for the product widening. Consequently, we have found support for our hypothesis 4.

Yet, our study suffers from a number of limitations which need to be addressed in subsequent research on this topic. We have already mentioned the very general information on specific sectors in which the companies operate. This means that we can just try to measure the proxy impact of the shock with dummy variables, and not the actual magnitude of the shock with continuous variables. Moreover, the knowledge of specific sectors would enable to look deeper for the opportunity seekers and more effective usage of the information on internationalisation activities. In the EFIGE dataset we have for instance information on the new international markets which some companies entered in 2009. It would be extremely interesting to look for those companies which rightly identified the fast-growing markers, even when most of the global economy was hit by recession. In this regard, the panel extension of the data-set beyond the 2009 period would be also welcome. Our story still remains somehow unfinished: it would be extremely interesting to check whether the proactive behaviour really paid off during the period of further economic growth and whether the proactive companies fared better than reactive ones.

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