VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETAS
VERSLO VADYBOS FAKULTETAS
TARPTAUTINĖS EKONOMIKOS IR VADYBOS KATEDRA

Jūratė Radavičiūtė

UNIVERSITETŲ SOCIALINĖ PARTNERYSTĖ SU TARPTAUTINIO VERSLO SUBJEKTAIS: PLĖTROS MODELIS

UNIVERSITIES SOCIAL PARTNERSHIP WITH INTERNATIONAL BUSINESS SUBJECTS: DEVELOPMENT MODEL

Baigiamasis magistro darbas

Verslo vadybos studijų programa, valstybinis kodas
Tarptautinio verslo specializacija
Verslo studijų kryptis

Vilnius, 2015

VILNIUS GEDIMINAS TECHNICAL UNIVERSITY
BUSINESS MANAGEMENT FACULTY
INTERNATIONAL ECONOMICS AND MANAGEMENT DEPARTMENT

Jūratė Radavičiūtė

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Master Thesis

Business Management program, state code 621N10008
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Jūratė Radavičiūtė

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BAIGIAMOJO MAGISTRO DARBO UŽDUOTIS

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Baigiamojo darbo tema: **Universitetų socialinė partnerystė su tarptautinio verslo subjektais: plėtros modelis (Universities Social Partnership with International Business Subjects: Development Model)** patvirtinta 2013 m. spalio 29 d. dekano potvarkiu Nr. 366vv

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BAIGIAMOJO DARBO UŽDUOTIS:

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bei ypatumus. Atlikti teorinių šaltinių, taikytinų aukštojo mokslo ir verslo organizacijų bendradarbiavimui .....
apžvalgą. Vadovaujantis teorijos analizės rezultatais ir surinktais statistiniais duomenimis, atlikti empirinius .....
partnerystės plėtros galimybių tyrimus. Pasiūlyti sprendimus, skirtus universitetų socialinei partnerystei su .....
tarptautinio verslo subjektais tobulinti

Baigiamojo darbo rengimo konsultantai:

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(Parašas) (Moksl. laipsnis/pedag.vardas, vardas, pavardė)

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Pavadinimas **Universitetų socialinė partnerystės su tarptautinio verslo subjektais: plėtros modelis**
Autorius **Jūratė Radavičiūtė** Vadovas doc. dr. **Asta Radzevičienė**

Kalba
☐ lietuvių
■ užsienio

Anotacija

Baigiamajame magistro darbe nagrinėjamos universitetų socialinės partnerystės su tarptautinio verslo subjektais plėtros galimybės, bendradarbiavimo aktualumas ir svarba. Teorinėje dalyje pateikiami universitetų bendradarbiavimo su verslo subjektais modeliai, apžvelgiamos temos aktualijos ir svarba, pristatoma socialinės partnerystės ir verslaus universiteto samprata ir skirtingų autorių požiūris į ją. Praktinėje dalyje atliekama makroaplinkos, statistinių duomenų, ir antrinių šaltinių analizė. Taip pat atliekama koreliacinė analizė ir skirtingų Europos universitetų atvejo analizė. Remiantis gautais rezultatais nustatyti veiksniai, darantys įtaką bendradarbiavimui, taip pat pateikiamas atsižvelgiant į gautus rezultatus sukurtas universitetų socialinės partnerystės su tarptautiniais verslo subjektais plėtros modelis. Darbą sudaro: įvadas, temos aktualumo ir svarbos apžvalga, teorinė dalis, tiriamoji dalis. Darbo pabaigoje pateikiamos išvados ir pasiūlymai, literatūros sąrašas.

Darbo apimtis – 60 p. teksto be priedų, 20 iliustr., 11 lent. Literatūros sąrašą sudaro 41 bibliografinis šaltinis.

Atskirai pridedami darbo priedai.

Prasminiai žodžiai: universitetų socialinė partnerystė, tarptautinis verslas, verslus universitetas, plėtros modelis.

Vilnius Gediminas Technical University
Business Management faculty
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Business Management study programme master thesis.

Title: Universities social partnership with international business subjects: development model

Author **Jurate Radaviciute** Academic supervisor doc.dr. **Asta Radzeviciene**

Thesis language

☐ Lithuanian

■ Foreign (English)

Annotation

The master thesis analyses universities social partnership with international business subjects development opportunities, cooperation relevance and importance. The theoretical part presents models of universities partnership with international business subjects, an overview the relevance and importance of the topic. There is presented the concept of social partnership and entrepreneurial university also there is presented approaches of different authors to entreprenurial university. The practical part shows the macro-environmental analysis, statistics, and analysis of secondary sources. There is also made correlation analysis and case study of different European universities. Based on the results there are determined the factors which influence the cooperation, as well according to empirical research results there is created university social partnership with international business subjects development model. Master thesis structure: introduction, the review of topic relevance and importance, the theoretical part, empirical research. At the end of the master thesis there are given conclusions and recommendations, references added.

Thesis consists of: 60 p. text without annexes, 20 figures, 11 tables. Literary list includes 41 references. Appendixes included.

Keywords: universities social partnership, international business, entrepreneurial university, development model.

Vilniaus Gedimino technikos universiteto egzaminų, sesijų ir baigiamųjų darbų rengimo bei gynimo organizavimo tvarkos aprašo 2011-2012 m. m.
1 priedas

(Baigiamojo darbo sąžiningumo deklaracijos forma)

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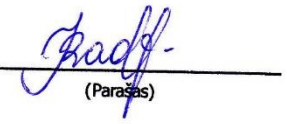
BAIGIAMOJO DARBO (PROJEKTO) SĄŽININGUMO DEKLARACIJA

2015 m. gegužės 26 d.

Patvirtinu, kad mano baigiamasis darbas tema „Universitetų socialinė partnerystė su tarptautinio verslo subjektais : plėtros modelis" patvirtintas 2013 m. spalio 29 d. dekano potvarkiu Nr. 366vv, yra savarankiškai parašytas. Šiame darbe pateikta medžiaga nėra plagijuota. Tiesiogiai ar netiesiogiai panaudotos kitų šaltinių citatos pažymėtos literatūros nuorodose.

Parenkant ir įvertinant medžiagą bei rengiant baigiamąjį darbą, mane konsultavo mokslininkai ir specialistai: doc. dr. Asta Radzevičienė. Mano darbo vadovas doc. dr. Asta Radzevičienė.

Kitų asmenų indėlio į parengtą baigiamąjį darbą nėra. Jokių įstatymų nenumatytų piniginių sumų už šį darbą niekam nesu mokėjęs (-usi).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Jūratė Radavičiūtė
(Vardas ir pavardė)

CONTENT OF FIGURES

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CONTENT

INTRODUCTION

Universities play a key role in the economic structure of any country. Nowadays universities often should use their potential and become not only centres of knowledge, scholarship and research, but also centres of the economic, social and cultural development of the country. Because of that universities have to change their behaviour. In order to make a successful partnership with international business subjects universities have to ensure quality of study programs based on the needs of all partners, provide professional training, successfully communicate with all business subjects, also improve the quality and effectiveness of educational and research processes. For many companies creating strategic relationships with partners outside the business sector is a new skill, and there is often a fear of risk, a sense that non-profit and the public sector are inherently inefficient and hard to work with. The main functions of a university are teaching and research. However, because of the new role of universities in the society, the partnerships with the business, and the diminishing of the public funds, universities face the challenge of commercializing (known under the third mission of universities). This new mission is complex, has several facet's and puts the university in new situations. In the modern knowledge economy higher education institutions are being required to operate more entrepreneurially, commercialising the results of their research and spinning out new, knowledge – based enterprises. Despite that there is advantages and disadvatages for universities which are trying to become entrepreneurial.

There are some reasons why universities are not the most entrepreneurial institutions, such as the hierarchical structure and many levels of approval, the need for control, the conservatism of the corporate culture also the lack of entrepreneurial talent. On the other hand, being entrepreneurial university can drive out their fundamental university qualities such as intellectual integrity, critical inquiry, commitment to learning and understanding.

The university loses the monopole in knowledge production, has direct competition from independent research institutes, company research labs, governmental agencies or consulting companies. All produce new knowledge, with immediate applicability, relevant for the market. As consequence, the university is interested in commercializing as much as possible, and the company in positioning as an innovative organization. From the point of view of the business, research and development receive a major attention and demonstrate to be a profitable investment on long-term with an important contribution in productivity increase.

Object of final master thesis – universities partnership with international business subjects development opportunities which are used in order to encourage universities partnership with international business subjects.

Aim of master thesis – to create the potential development model for universities social partnership with international business subjects, based on methodological and empirical researches analysis.

The tasks of master thesis:

- to do comparative analysis of different methodological material about universities partnership with international business subjects and it's main theoretical models;
- to describe theoretically research methods applied in practical part;
- to introduce the development trends and problems to be solved in the field of universities partnership with international business subjects;
- to perform empirical research of few different European universities as case study;
- to propose partnership development model based on theoretical and practical material analysis.

Master thesis structure: in the first chapter of master thesis, there are presented relevance and importance of this topic. There is made the analysis of partnership barriers and drivers and main partnership methods are introduced. In this final paper there are presented some researches which helped to find and analyse the real situation of university's partnership with international business, to find what affects coperation and how different universities communicate and cooperate with international business. There were made analysis of data based on facts and macro-environmental analysis, which showed the main numbers and figures in this area. After the analysis of secondary sources there were some researches made: research for determining universities partnership with international subjects dependence on factors that affect it and specialists attitude towards universities social partnership with international business subjects. At the end there is shown proposed partnership development model, conclusions and recommendations.

Research methods used: scientific literature analysis, case study, statistical data analysis (correlation analysis, anova), secondary data analysis.

1. UNIVERSITIES SOCIAL PARTNERSHIP WITH INTERNATIONAL BUSINESS SUBJECTS: THE IMPORTANCE OF DEVELOPMENT

1.1. Universities social partnership with international business subjects relevance and development priorities

Nowadays higher education sector seems to be expected to take in shaping institutional development and culture change. Universities are more often encouraged for wider engagement with the stakeholder community, in particular with regional and local development agencies and local business all over the world. In many countries universities feel the pressure for change from the viewpoint of the internal organisation of universities and, more fundamentally, their changing role in society. So universities are willing to become more entrepreneurial or enterprising. In order to become like that, universities are tend to make partnerships with different kind businesses. Companies want to work with the best so and universities, so both sides can promote each other and become more powerful engine for innovation and economic growth. Higher education is the means by which a skilled workforce is produced and the source of new knowledge capital and thus economic growth and advances in society. The global economy requires skilled workers, and the wage gap between those with education and skills and those without continues to widen. More and more knowledge inputs are increasingly required to perform almost any job in the new global knowledge economy. The economic success of individuals contributes to the success of a society—in fact, it is the main driver. In order for any nation to remain competitive, it is imperative that its universities prepare students to learn rapidly, and make them capable of integrating a broad range of disciplines in a rapidly changing world. Because of the universities partnerships with international business subjects students could be better prepared for a life world of much greater uncertainty and complexity involving: job and contract status change, global mobility, adaptation to different cultures, working in a world of organisational structures, greater probability of self employment, and wider responsibilities in family and social life. This has also become associated with pressure on the sector to do more to prepare students for a world of lifelong learning.

Main problems which show the necessity for cooperation:

- Labor market demand for highly trained graduates and researchers;
- Need for research coolaboration and innovation activities;
- Need for students, inter-sectoral staff exchange and knowledge exchange;
- Need for increased investments in higher education and research in order to mobilise the potential and capacities of present and next generations of young people.

Universities and international businesses cooperation can be named as an academic revolution, because in this case university arises with the third mission – involvement in socio-economic development, next to the traditional missions of teaching and research. Students with new ideas, skills and entrepreneurial talent has become a huge asset which can be provided by universities. They are not only the new generations of professionals in various scientific disciplines, business, culture etc., but they can also be trained and encouraged to become entrepreneurs and firm founders.

There are eight different ways in which universities and international business make partnerships:

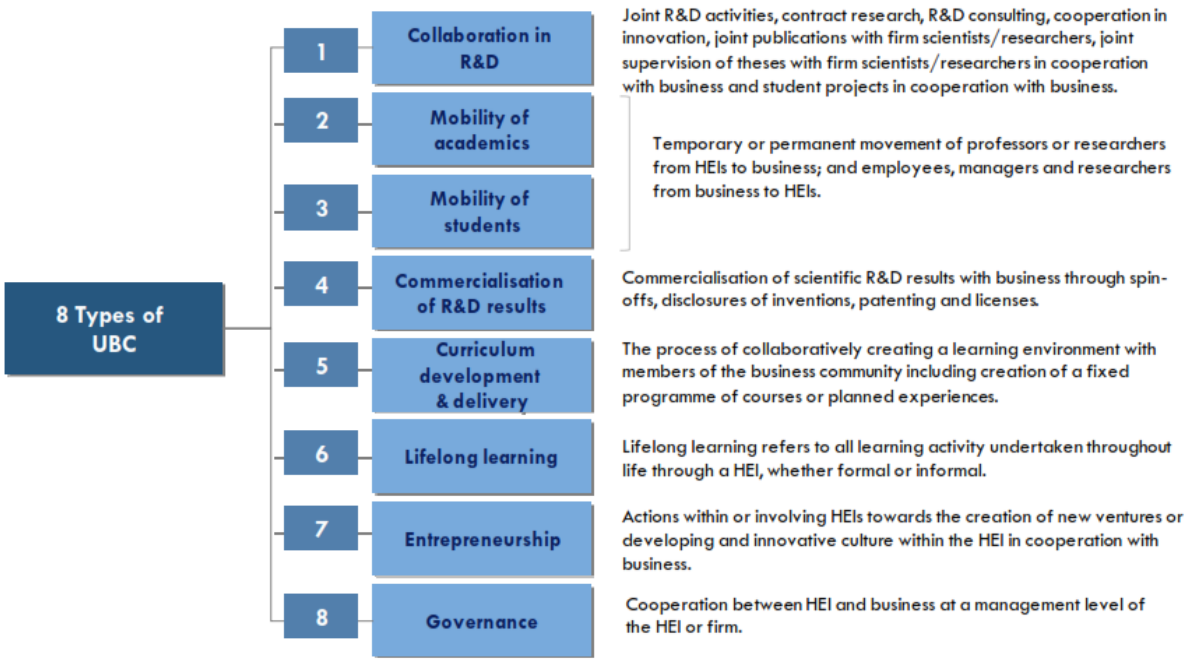

Figure 1. Universities possible partnerships with international business (Science-to-Business Marketing Research Centre. “The State of European University-Business cooperation”. 2011.)

Both sides give a huge importance for cooperation related to research and the commercialization of research which provide opportunities for direct income, student mobility. Partnerships include contract research, cooperation in innovation, student projects in cooperation with business. For all kinds of cooperation there exist benefits, drivers and barriers which sometimes help to improve cooperation, sometimes are vital for partnership successful development. According Science-to-Business Marketing Research Center made researches, there are some benefits, barriers and drivers for university-business cooperation development in Europe. The main benefits, drivers and barriers are shown below.

Table 1. Universities social partnerships with international business benefits, drivers and barriers nowadays (created by author).

Drivers	Benefits	Barriers
Having a shared goal.	Improvement of future graduates employability.	Lack of external funding for university-business partnership.
Employment by business of university's staff and students.	Improvement of business performance.	Business fears that their knowledge will be disclosed.
Existence of mutual commitment.	Increase the reputation of academics in the field.	Differing motivation/values between university and business.
Interest of business in accessing scientific knowledge.	Being vital for personal research.	A lack of contact people with scientific knowledge within business.
Possibility of accessing funding/financial resources for working with business.	Improvement of students learning experience.	Difficulty in finding the appropriate collaboration partner.
Access to research and development facilities.	Increase of local employment.	The limited absorption capacity of business to take on internships or projects.
Commercial orientation.	Increase of skills and graduate development.	

While the set of drivers (e.g. better employability of graduates, curriculum improvements, spin-offs and financial measurements) can be classified according to a particular beneficiary (e.g. higher education institutions, academics, students, the community etc.), the set of barriers has traditionally been classified as restrictions imposed by a company, problems related to the appropriation of results, communication problems, duration of the research and cultural differences. (Emcosu 2012). The existence of mutual trust, commitment and shared goals are placed as essential drivers. Funding was found like one of the most important barriers for partnerships, because it cannot occur without any funds available. The university is interested in applying the fundamental research in practice, and the company searches for new products and services based on unique scientific discoveries, new and energetic workforce. It can be assumed that for successful cooperation and development there are still some challenges such as importance to find common goals, mutual needs and benefits, initiate joint initiatives and projects. There also has to be improved communication, reduced lack of understanding, flexibility.

1.2. Universities partnership with international businesses promotion benefits in solving universities and businesses internationalization problems

Usually universities and businesses sooner or later have a clear internationalization perspective. Nowadays it is very important and valuable to have international connections and activities. Universities and international businesses help each other in different ways by making social partnerships and by trying to do something new together. Universities partnerships with international businesses help both sides to become more active and more international. But first of all, in order to become more international there are three main stages which have to be done by both sides.

- The first stage constitutes the first steps towards internationalization when international activities are marginal or underdeveloped.
- In the second stage, international activities are more developed and diversified. International elements are incorporated into a university's management and administrative process, which leads to internationalization being institutionalized.
- The third stage demonstrates the most challenging activities in attaining a highly developed level of internationalization (Shattock 2009).

Universities and businesses choose to develop their international activities according to their own situation, resources, priorities, and their country's position in Europe and in the world. Universities partnerships with international businesses development and promotion give a lot of benefits and make everything easier to become international. In the table below there are shown social partnership advantages which help to solve internationalization problems for business and universities.

Table 2. Internationalisation problems solving with making social partnerships (created by author).

Problem	Business	University	Advantage
Producing practical results	+	+	Working together helps to make new innovative products, to show them in international affairs, seminars.
External funding	-	+	Business gives new investments for universities because of new human resources, knowledge folws.
Lack of awareness	+	+	Innovations, new activities make both well known.

Lack of people with scientific knowledge	+	-	Students, university's staff.
Lack of partners	+	+	New partners, new human resources.
Limited ability to absorb research findings	+	-	University's labs, students internships.

Table 2 shows problems which face both sides. Universities partnership with international business subjects gives a lof of new advantages for business so as for universities, so they can work together in order to reach their goals and strengthen weak spots for both sides.

1.3. International development – an essential precondition for universities partnership with international businesses promotion

In an era of competing demands, clearly institutions must prioritize their internationalization activities and initiatives. Universities are taking action in certain areas, to increase the level of internationalization. However, comprehensive internationalization – a process that requires a deep commitment across the institution. It cannot be accomplished by focusing on just one element or several discrete pieces. Moving forward, the higher education communities will need to develop and share successful comprehensive internationalization models that enhance traditional paradigms but also create new ways to bring global learning to non-traditional students (McGill Peterson, Mathers Addington 2013). One of the main goals of internationalisation and universities partnerships with international businesses is to provide the most relevant education to students, who will be the citizens, entrepreneurs and scientists of tomorrow. Today an interconnected network, global knowledge and awareness are increasingly viewed as one of the major assets. Current labour market requires graduates to have international, foreign language and intercultural skills to be able to work in a global setting, institutions are giving more importance on internationalisation. There are a lot of different forms for internationalisation fast-growing, such as incorporate intercultural and international dimensions into the curriculum, teching, research and extracurricular activities which help students to develop international and intercultural skills without ever leaving their country, transnational education can be delivered through off-shore campuses, joint programmes, distance learning. New forms of institutions, programmes and teaching methods are being set up.

Today's leading universities are enjoying partnerships with different international business partners. With proper leadership and investment, existing universities can be transformed into world-

class institutions. Internationalisation is a driver for change and improvement, it should help generate the skills required in these days, encourage innovation and create alternatives. Today, internationalisation functions as a two way street. It can help students achieve their goals to obtain a quality educationand pursue research. It gives students an opportunity for "real world, real time" experiential learning in areas that cannot simply be taught. Institutions, on the other hand, may gain a worldwide reputation, as well as a foothold in the international higher education community, and rise to meet the challenges associated with globalization (Henard *et al*. 2012).

There can be the main reasons found why international development should be the essential key for universities partnerships with international businesses promotion. International development would :

- improve student preparedness;
- internationalise the curriculum;
- improve the national and international profile of the institution;
- strengthen research and knowledge production;
- mobilise internal intellectual resources;
- diversify university's faculty and staff;
- produce a skilled workforce with global awareness and multi-cultural competencies.

So internationalisation can offer students, staff and institutions valuable benefits. It can promote strategic thinking leading to innovation, offer advantages in modernising pedagogy, encourage students and international businesses collaboration and stimulate new approaches to learning assessments. Students and staff can gain a greater awareness of the global issues and how educational systems operate across countries, cultures and languages. Internationalisation introduces alternative ways of thinking, it even questions the education model, it impacts on management.

2. UNIVERSITIES PARTNERSHIP WITH INTERNATIONAL BUSINESS SUBJECTS THEORY ASPECTS AND EMPIRICAL METHODOLOGY

2.1. Universities and international business subjects cooperation concept

In general, the cooperation with the university can be formal and/or informal. The informal cooperation is specific to small and medium enterprises, which are interested in a rapid and flexible access to economic and relevant information, and are open to university partnerships. The large companies prefer the formal cooperation in form of joint-venture or contract. The joint-venture means that several companies found a new enterprise with the scope of university cooperation. The time horizon is long, the partners bring own competencies and resources, and the research objective is common (Dan 2013).

The university and business cooperation means the interaction between students and academics, employees, organizations, public authorities and regional stakeholders. All sides are interested in jobs, information from and about markets, connection to the market reality (through trainings, internships or research projects), licenses, patents, product and service development, innovations. University is tended to provide students with new ideas, skills and entrepreneurial talent, and nowadays this become as a major asset.

University – business cooperation usually can be included into the "third mission" of universities – from teaching and research towards community agreement – via technology transfer, regional development and living laboratories. There are a lot of different ways where universities and international business can cooperate and share different values for each other. There can be cooperation between science and economy in general, organizational relations between universities and enterprises, and the personal relations between science people and professors and company employees. Partnerships which are made between any possible version gives benefits for each side. Businesses and industry benefit greatly from university research and innovation. Universities are constantly looking for ways to connect their research and students' education to emerging industry interests. To facilitate greater collaboration and innovation, universitiies are opening up their facilities, faculty, and students to businesses in the hopes of creating greater economic value. Universities are strategically partnering with companies, offering internships and externships, sharing facilities with startups, such as accelerators, and creating venture funds and incentive programs funded by industry, all of which drive increased innovation and product development by university students, faculty, and staff (U.S. Department of Commerce 2013).

Universities and international business cooperation includes such benefits: external funding, new opportunities for professors and graduates to work on groundbreaking research, vital inputs to

keep teaching and learning on the cutting edge of a discipline, the impact of delivering solutions for pressing global challenges. University can get access to companys knowledge and resources, create new ideas for teaching and training, improve market awareness and reputation, engage with business-relevant research challenges, create new opportunities for the institution, its staff and students. Businesses usually have the same reasons why they engage with universities. These reasons are reduce of cost and risk, new ideas and horizon scanning, develop of skills, capability and profile. Over time, a well-managed partnership produces a growing number of professors and graduate students who can think and act across the cultural divide, connect with the key research interests of a company and work harmoniously to define big and common strategic goals. University partnerships with international business subjects also are the additional chance to use the potential of universities, so it is important and beneficial to cooperate with private or public sector entities. Moreover, the advantage of the university cooperation is brought by the speed-up of the innovation process, reduction of stages. From the financial point of view, the university cooperation brings a division of costs with research and development and a diminishing of risk and uncertainty. From an economic point of view, the university cooperation brings economies of scale, there is not the need for infrastructure investments or hiring special personnel. The entrepreneurial university has new functions of management and marketing more specific for the private sector. For instance, the university adopts a strategic thinking, invests in priority fields, closes inefficient study programs, develops a curricula adapted to the market needs. Same with the companies, the university is interested also in the image and awareness and knows that a strong brand attracts the best prospect students, professors and researchers and funds from companies. The cooperation with the business is an indicator for competitiveness on the market for education services, trainings and research. The cooperation with the business includes also a range of financial and material benefits. The financial component is the most important one, but in reality other benefits must be emphasized, such as personal satisfaction, prestige, reputation, contribution to the university performance.

Though there are some disadvantages of universities and business cooperation which come from the different organizational culture, norms and values of each partner, different work procedures, and deciding on an agreement may consume energy and efforts. The cooperation with the university presents also some risks for business, such as: coordination and information problems (each part has its own hierarchy and bureaucracy, this means that the information and coordination of the common project may be negative influenced by the specific internal procedures), supplementary costs (public universities are known for standards and an excessive documentation), ownership and commercialization of the results (without clear specification, there is a risk that one

part uses for its own purpose the results), know-how piracy (the team members in the project belong to the university and company and it is difficult to hinder the knowledge copy).

The university sector is huge and complex, with a wide range of institutions, in this case, some universities are highly skilled at working with industrial partners, whereas others have limited experience. That is why international businesses should take a look and carefully decide the level of collaborative capability of their potential university.

2.2. Survey on universities partnership with international business subjects main theories and possibilities of their use

2.2.1. Social partnership concept

Universities recognize that mutually beneficial social partnerships with the private sector can advance the mission of the University. Meanwhile companies increasingly admit that to rely on their internal research and development they cannot successfully innovate. So working with external partners lets them to get different knowledge and save R&D costs. It is known that universities can be external partners which have access to talents and skills. Social Partnership gives high visibility in public reporting, establish complementary roles for each partner leveraging the skills, resources, and sense of mission of each. Universities and business receive substantial investment of time and money. Companies seek to leverage investments in social impact to increase their market presence, build stronger and more efficient supply chain, develop new products, and engage a larger customer base. Moreover, companies are progressively turning to partnerships with non-profits, social and public entities as the major method by which they achieve shared value.

Social partnership is an organizing concept for a range of practises based on labor management negotiation and collaboration, for the good of the economy, firm and workforce. (Turner 1994). The business subject may be an international agency, non-profit agency, or a subject involving multiple agencies in collaborative planning. The university partner may be a faculty member, or a unit of the university that has engagement staff and connects to faculty members.

M. Perkmann claims that it is known two dimensions of business and university social partnership: time horizon and degree of disclosure. Time horizon includes short-term and long-term collaborations. Short-term partnerships are common and useful, they require creative structuring, because academic research and business practice can be wildly divergent. Meanwhile the long-term partnerships can show a lot of possibilities and even help to create a new innovations that would help sustain the business. The degree of disclosure of the results of the partnership has the advantage of reducing transaction costs related to intellectual property through rapid publishing which constitutes

the lifeblood of public science. The combination of these two dimensions can give four different social partnership modes:

The idea lab, where managers put aside their desire for secrecy and work with academics to create new options and contacts. In this type of collaboration, businesses engage university partners to work on problems that are relatively short-term, while providing the option for the academics to openly publish results. Establishing small-scale collaborations with a number of players, possibly internationally, constitutes a cost-effective way of testing the waters in a variety of emerging research areas.

The grand challenge, where managers and academics work together to create a new knowledge base that will be shared in the public domain. Companies may seek to create new fields and markets by funding new research programs.

The extended workbench, where managers work rapidly with university partners on proprietary problems and solutions. University researchers can be particularly capable partners for non-routine problems because they have access to the brainpower of highly specialized research groups and bring a different perspective than that in corporate environments.

Deep exploration, where the company creates rich and long-lasting relationships with university partners that, in turn, offer the business rights of first refusal to license collaboration results. Long-term, deep and protected collaborations with universities enable companies to not only create new knowledge, but also to gain competitive advantage from the outputs of these research efforts (Perkmann, Salter 2012).

In order to choose the best social partnership model with university, business should carefully access the nature of the university they will be working with, to take a look at all advantages and disadvantages. University partnerships are too important to be left to chance, and on the side from university, such partnerships can turn universities into valuable partners in both the short and long run. In any case, these relationships are designed in advance to meet both organizations' goals.

After finding out all four social partnership types between university and international business, there can be some social partnership functions excluded important for universities and international business entities which are shown below:

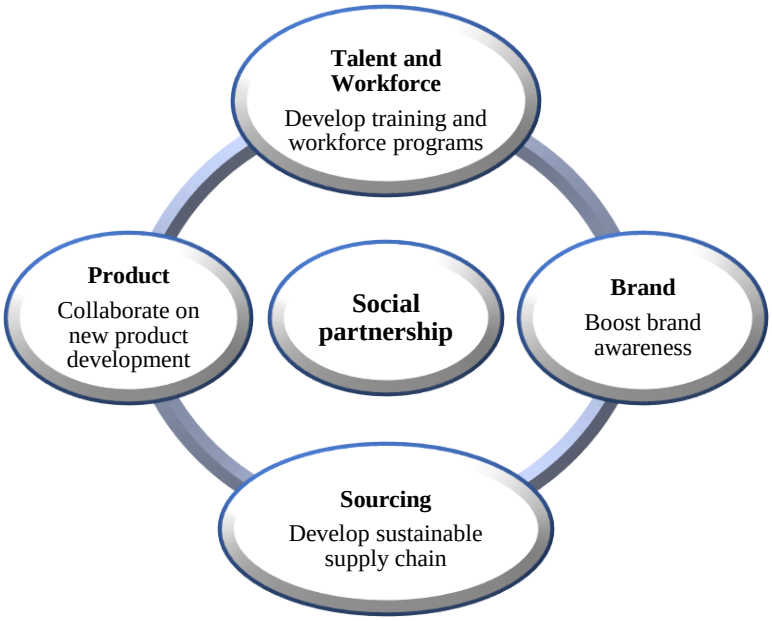

Figure 2. Social Partnership functions (Mennel, J.et al. 2013.)

Social partnership helps to train new talent and efficient workforce, because universities and business subjects can make agreements in order to educate students more in such areas where businesses are engaged, give them more specific knowledge. Companies can invest into workforce, provide opportunities to motivate students.

Universities and international business subjects can make partnerships in order to develop, investigate or improve product or service. For example, businesses with universities students help can use universities facilities, training programs. New products or developments found during successful partnership can increase the popularity of university or business entity brand.

Moreover, social partnership between universities and business subjects can help to develop sustainable supply chain. University can be sure that business entities will suggest new programs for students, internships. Meanwhile, business entities can be sure that they will have a possibility to get required flexible workforce.

Despite of all social partnership between university and business advantages there are also some challenges. The open nature of academic science is at times in conflict with companies' need to protect technologies they use. More than that, while academic research focuses on long-term challenges and thus may move more slowly, industrial R&D is driven by time-sensitive product development projects and day-to-day project solving. As a result, companies can sometimes find universities too slow and too bureaucratic to be good partners (Perkmann, Salter 2012).

The social partnership represents voluntary actions that companies take to manage their economic, social and environmental impacts and to contribute to the wider societal development. The university social partnerships let the university to behave the way they not only fulfil the university

economic and social mission itself, but they also facilitate meeting the intentions and objectives of all business subjects.

It is known that universities and business subjects establish complementary roles for each other, sense of mission of each. Getting social partnership right can help all sectors – corporate, non-profit, and the public sector – align social impact to business opportunities, create distinct competitive advantage, and identify innovative solutions and with all this to keep sustainable development.

2.2.2. Triple Helix Model

Growing interest in cooperation between the university and industry is often characterised by increasing globalisation processes, the value of services and intangibles, networking organisations and digital technologies. University – business cooperation has been described using distinct concepts such as "national innovation systems" (Nelson 1993), a "new mode of knowledge production" (Gibbons et al. 1994), "entrepreneurial university" (Clark 1998) and "the triple helix model" (Etzkowotz & Leydesdorff, 2000; Etzkowitz, 2008) (Emcosu 2012). Triple Helix Model is the main theory which explains university partnership possibilities with business or/and government. It is based on academic-industry-government linkages forming a spiral pattern of cooperation. This model suggests new understandings and metrics for traditional teaching and research missions, internal organizational changes that are more conductive to collaboration (both internal and external), new modes of governance and management and new institutional capacities. On a closer look, this view is also resonates with the knowledge transfer view with emphasis on advancing economic development through the strategy of technological innovation. The concept of the Triple Helix of university-industry-government interprets the shift from a dominating industry-government dyad in the industrial society to a growing triadic relationship between university-industry-government in the knowledge society. This concept was initiated in 1990s by Etzkowitz (1993) and Leydesdorff (1995), encompassing elements of precursor works by Lowe (1982) and Sabato and Mackenzi (1982). The Triple Helix thesis emerged from a confluence between Etzkowitz' longer-term interest in the study of university-industry relations and Leydesdorff's interest in an evolutionary model that can generate a next-order hyper-cycle- or in terms of the Triple Helix, an overlay of communications (Leydesdorff 2012).

The Triple Helix Model is a spiral model of innovation that captures multiple reciprocal relationships at different points in the process of knowledge capitalization. The Triple Helix is a process by which university, government, and industry collaborate to create or discover new

knowledge, technology, or products and services that are transmitted to intended final users in fulfilment of a social need (Etzkowitz 2002).

Dzisah and Etzkowitz (2008) state that the development notion changed, from centralization (the state as the first initiator of research, the industry responsible for technological transfer, and the university as the exclusive provider of specialized labor force) to a model based on cooperation and collaboration. The state is transferring the decision model to a regional level, the industry is involved both in innovation and technological transfer, and the university plays an innovative role in the society, is active in the research „translation", in the preparation of entrepreneurs, in community development. Although is large scale model, Cooke (2005) criticizes the model as an macro-economic one based on institutional agreements without taking in account the regional realities, the quality of inter-human relations, the business development. And Evans (2010) and Powel (1996) affirm that the clear delimitation of the relations between university, companies and state takes to a weakening of this network (Dan 2013).

The Triple Helix thesis claims that the potential for innovation and economic development in a knowledge society lies in a more visible role for the university and in the hybridisation of elements from university, industry and government to generate new institutional and social formats for the production, transfer and application of knowledge. The Triple Helix Model of collaboration represents new patterns of collaboration among university linkages, government agencies and industry consortia with an emphasis on commercialization. The competitive advantage of the university over other knowledge producing institutions, such as research and development units of firms and government laboratories, is its fundamental educational purpose: the university has the students, who are a continual source of innovation, both within the university and through their regular movement to other institutional spheres upon graduation.

Industry operates in the Triple Helix as the locus of production, government as the source of contractual relations that guarantee stable interactions and exchange, the university as a source of new knowledge and technology, the generative principle of knowledge-based economies. The increased importance of knowledge and the role of the university in incubation of technology-based firms have given it a more prominent place in the institutional firmament. Universities primarily seen as a source of human resources and knowledge, are now looked for technology as well. Universities are also extending their teaching capabilities from educating individuals to shaping organizations in entrepreneurial education and incubation programs. Rather than only serving as a source of new ideas for existing firms, universities are combining their research and teaching capabilities in new formats to become a source of new firm information, especially in advanced areas of science and technology.

According to the systems theory, Etzkowitz define Triple Helix systems as a set of: components (the institutional spheres of University, Industry and Government, with a wide array of actors; relationships between components *(*collaboration and conflict moderation, collaborative leadership, substitution and networking); and functions, described as processes taking place in what we label the 'Knowledge, Innovation and Consensus Spaces' (Ranga, Etzkowitz). There are also known several concepts of the Triple Helix Model – traditional, modern and specific. Traditional concept of the Triple Helix Model (Figure 3) represents individual institutional spheres (government, industry, university) as separate from each other. In this model government is expected to play a limited role of regulation or of buying products but not necessarily in the military area where there is much closer linkage. Government is expected to play a larger civilian role only when an activity cannot be provided by the market.

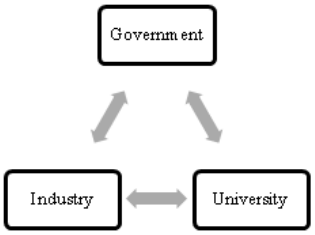

Figure 3. Triple Helix Model - Traditional concept (Etzkowitz, 2007).

Modern concept of the Triple Helix Model (Figure 4) describes situation when bilateral relationships between government and university, university and industry and industry and government have expanded into triadic relations among these institutional spheres; these institutional spheres overlap and cooperate with each other.

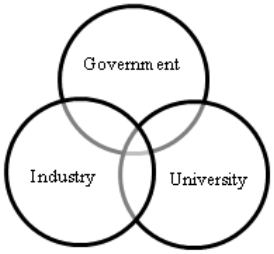

Figure 4. Triple Helix Model - Modern concept (Etzkowitz, 2007).

Specific model subscribes situation when government is the dominant institutional sphere (Figure 5). Industry and the university are subordinate parts of the state.

When relationships are organized among the institutional spheres, government plays the coordinating role.

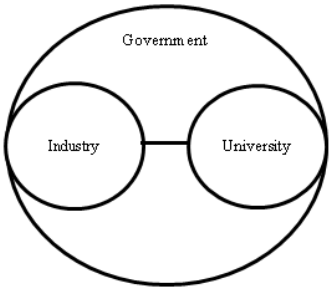

Figure 5. Triple Helix Model - Specific concept (Etzkowitz, 2007).

Different Triple Helix concepts show that it is very important for each element of the model to perform its role and interact with the other elements. The increased interaction among university, industry and government as relatively equal partners, is the core of the Triple Helix model of economic and social development. The Triple Helix thesis interacts institutional spheres a step further to the new developments in innovation strategies and practices that arise from this cooperation, it also promotes the creation of new organizational formats to promote innovation, such as the incubators, science parks and the venture capital firms. The Triple Helix message is that universities, firms and governments assume some of the capabilities of the other, even as each maintains its primary role and distinct identity. Innovation, the reconfiguration of elements into a more productive combination, takes on a broader meaning in increasingly knowledge-based societies. By using Triple Helix universities are losing its traditional role and independence and become more involved to industry and government, it is also get a higher level of status and influence in society. Triple Helix Concept is the main model which suggests that universities have to take a new mission and start to contribute to economic development by becoming entrepreneurial universities.

2.3. The Entrepreneurial University Concept

Much has been written over the past decade about the concept of the entrepreneurial university. Universities are entrepreneurial when they are unafraid to maximize the potential for commercialization of their ideas and create value in society and do not see this as a significant threat to academic values. Behind this lies recognition of the need for a diversified funding base involving raising a high percentage of their income from non-public sources. In many countries universities engagement with the stakeholder community is actively pursued. This may take a variety of forms including: consultancy, training, research and development, technology transfer, related engagement with and/or ownership of science parks and incubators and pursuit of staff and student project work. It also means that there is an accepted responsibility for local development.

It has been argued that, in terms of organization, entrepreneurial universities are managed in such a way that they become capable of responding flexibly, strategically and yet coherently to

opportunities in the environment. In theory entrepreneurship becomes part of the university's core strategy. The ultimate outcome is the creation of an "enterprise culture" defined particularly as one open to change and to the search for, and exploitation of, opportunities for innovation and development.

The second academic revolution, integrating a mission for economic and social development, is transforming the traditional teaching and research university into an entrepreneurial university (Etzkowitz 2002). Meanwhile, Wissema claims that, universities are changing in a fundamental way due to the increasing competition for funding, students and academics as well as government demands for technology-based economic growth (Wissema 2009). As both of these scholars' ideas about university transformation demonstrate, it has become evident that today's social and economic development is tied to the university's mission, with entrepreneurial playing an integral role in it.

To find the one and real definition of the Entrepreneurial University is quite difficult, there are a lot of different approaches. Table 3 shows some definitions of the entrepreneurial university by different authors.

Table 3. Entrepreneurial University definitions (created by author).

Etzkowitz (1983)	Universities that are considering new sources of funds like patents, research funded by contracts and entry into a partnership with a private enterprises.
Chrisman, Hynes and Fraser (1995)	The entrepreneurial university involves "the creation of new business ventures by university professors, technicians, or students."
Jacob, M, Lundqvist and Hellsmark (2003)	Is based both on commercialization (custom made further education courses, consultancy services and extension activities) and commoditization (patents, licesing or student owned start-ups).
Etzkowitz (2003)	Is a natural incubator, providing support structures for teachers and students to initiate new ventures: intellectual, commercial and conjoin.
Gibb (2013)	Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society – local, national and international.

Entrepreneurial university ranges a wide range of issues such as commercialization of university know-how, closer engagement of the university with industry and indeed stakeholders of

all kinds, the internationalization of universities and their strategies for dealing with global competition, the changing nature of the knowledge society and the challenge this poses to the organization of knowledge within higher education (Gibb 2012). Gibb claims that innovation is proposed as an outcome from entrepreneurial and enterprising behavior coupled with the degree to which these behaviours are enhanced by organization design, culture and the environment in general. Innovation in the university context can include among other things: new program development, new innovative pedagogy, new forms of stakeholder relationship, new forms of partnership with business, new forms of international relationships, new social enterprise activity. Gibb separate such key areas of university entrepreneurial potential:

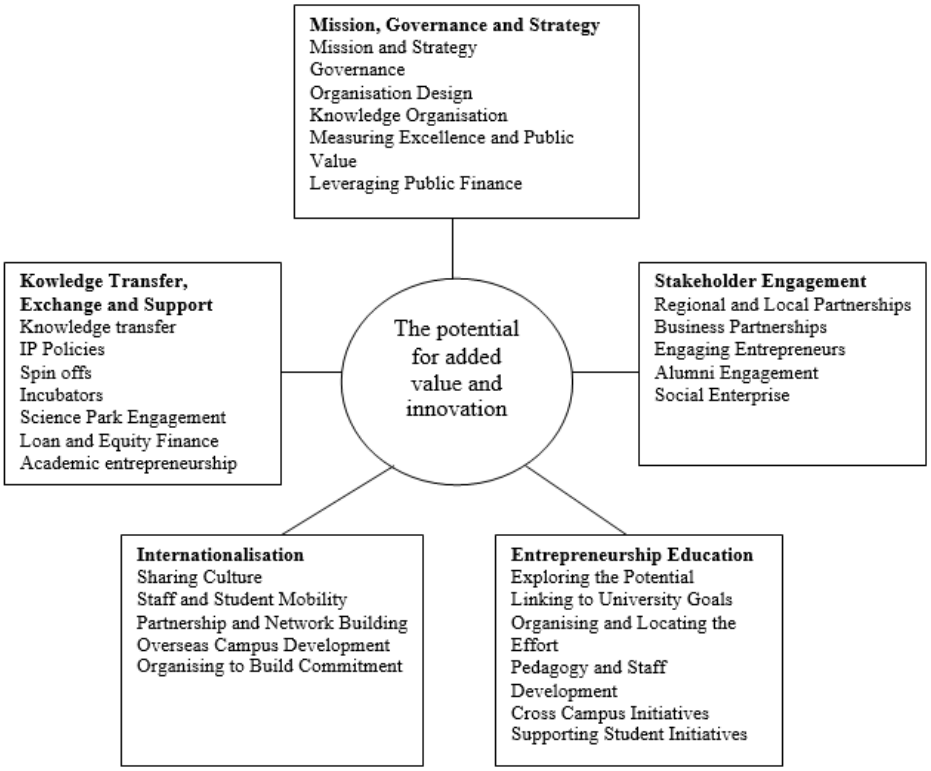

Figure 6. Key areas of university entrepreneurial potential (Gibb, 2012).

Figure 6 shows key areas of university entrepreneurial potential – mission, governance and strategy, knowledge transfer, exchange and support, stakeholder engagement, internationalization and entrepreneurship education. In all universities, there exist a range of entrepreneurial related activities. A major challenge is to explore synergy between them and by this means draw them into a whole university approach to entrepreneurial development.

The major issues shaping the incorporation of enterprise and entrepreneurship into the university's strategic plan seem to be: its stated mission, addressing the problems of society, the strength of its associated commitmet to knowledge transfer and exchange, the related commitment to business development. Fully integrating these concerns is quite a major challenge.

Governance has a strong influence for issues related to the enterprise/entrepreneurship concept. It influences the degree of active engagement of university staff with external stakeholder initiatives, the level of cooperation and trust between professional and academic staff in dealing with such issues ad knowledge transfer, employability and business relations/ development, the nature and strength of leadership in supporting an enterprise culture in the university.

Regional and local partnerships issues include the degree of university focus in its strategic plans and mission on the particular strengths, weaknesses and distinctive culture of a region and recognition of the "need to know" associated with the region's economic, social and cultural development, the degree to which the university sees its international activity as bringing opportunity to the region and providing the means for working in partnership with regional and local institutions in this respect.

A major component of the above is engagement with business. It includes the number of active partnerships in development from research and problem solving, business active engagement in the governance of the university, business engagement with the teaching of the university.

Almost all universities have commitment to engagement with alumni. Key components of alumni engagement include alumni conferences and meetings and support services, careers and lifelong learning support, entrepreneur alumni associations, volunteering.

Universities are increasingly being challenged by governments and funding agencies to expand entrepreneurship and enterprise education across the whole institution. Universities have to identify what kinds of programmes and pedagogies are needed right across the university, to link entrepreneurship education to the dynamic of the university's strategy, mission and goals.

The major challenge of internationalization is that of adapting to different cultures. University have to internalize the learning from international experience, to adapt staff to new cultures of learning and pedagogy, students and staff have to be able to understand their own culture in a global context and develop empathy with other cultures.

Figure 5 also shows that successful partnerships have to have the existence of a clear strategy and criteria, the degree of collaborative research, the sustainability of existing partnerships, quality control, financial plan.

A strong university commitment to entrepreneurship education have to involve a number of strategic decisions, such as organization design (what should be the role of any central support group), strong senior leadership, governance, research, stakeholder participation, alumni, internationalization. Figure 5 sets out the potential for exploring the contribution of the entrepreneurial concept to such broader strategic goals of enhacing innovation, strengthening and building stakeholder relationships, enhancing student employability, improving teaching quality and

generating more revenue with projects as well as enhacing the competitive image of the institution (Gibb 2012).

However, it is not so obvious how entrepreneurship is understood or adopted in research of the entrepreneurial university and, consequently, university practices. One common definition that is well supported in the entrepreneurial university discussion describes the entrepreneurial university as a university that behaves like an enterprise, competes for external research funding and emphasizes business-like efficiency. This view highlights knowledge transfer responsibilities and activities and focuses on the external outcomes of entrepreneurship such as new venture creation and commercialization of research findings.

International experience indicates some major differences in approach. Such differences reflect the source of the impetus for entrepreneurship education. This emphasizes in particular new venture creation, business growth, business planning and traditional functional areas of management. It can be regarded as weak in developing pedagogies and practices that stimulate entrepreneurial attributes and values, provide real insights into the entrepreneurial life-world, allow for practice of entrepreneurial behaviours, develop emotional intelligence and promote the value of acquiring of experiential knowledge under pressure. However, in this concept it is argued that four values are at its heart: vision and discovery, ownership and accountability, integrative thinking and action, and collaboration and teamwork. Also there is a common belief that the essence of entrepreneurship lies in creating and exploiting opportunities and pursuing innovation in practice.

Both of these concepts focus on the needs for change in society, in economy and in institutions and education. In the transition from traditional to modern, the focus was on the freedom and prosperity of citizens, their contribution to economy and rights for education. In the modern era between these transitions when the growth of western economies was predictable and provided by large organizations, the target of entrepreneurship changed. However, the process of how to learn and teach these competencies is still in its infancy and leaves many essential concepts and processes unexplored. In universities this change is accompanied by structural changes, global alliances and quality demands.

To sum up all university and international business partnership and entrepreneurial university theories there can be suggested such entrepreneurial university description:

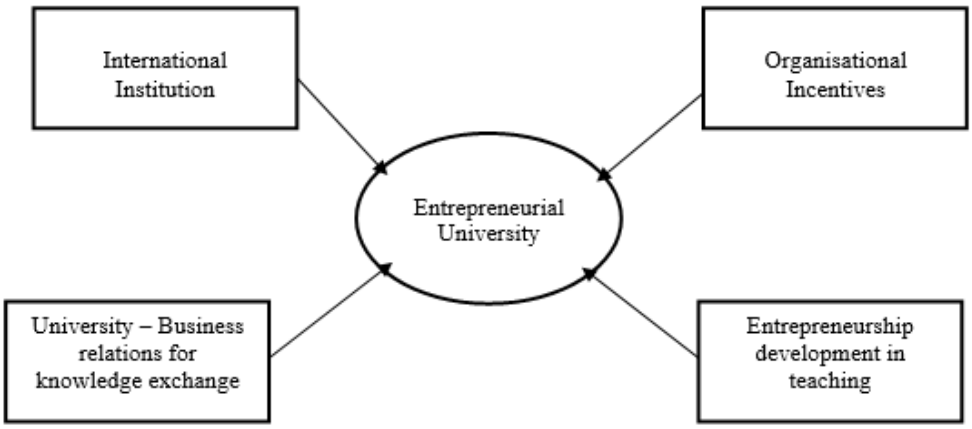

Figure 7. Entrepreneurial University description according theories.

University which is interested in becoming entrepreneurial university should establish new goals such as generate entrepreneurial attitudes, entrepreneurial competences and skills, try to maximise their potential, reduce their dependency on public funding, support the mobility of their own staff and students. These goals should be known across the institution and understood as a priority by university workers and students. University should build an entrepreneurial culture by recruiting staff that have a strong entrepreneurship background, entrepreneurial attitudes and experience could be use as criteria in the recruitment process. In this case there could be delivered entrepreneurial learning through serving different topics by different approaches, by using mentors, living labs, have competitions and awards between students.

In order to become entrepreneurial university universities should try to improve knowledge exchange through partnerships and collaboration. Universities should support knowledge exchange mechanisms like student mobility and collaboration with the external environment. This can take place by active curriculum learning factories and internships or through breakfast clubs or other formal or informal activities.

These views of entrepreneurship have major implications for the way in which education in general and higher education in particular prepare individuals for a ‘life world’ of greater uncertainty, complexity and opportunity. Some of the key issues in this respect have been described above. The visionary challenges to the sector include those of: ‘creating’ its own autonomy in acceptance of the notion that less and less of its funding will be by the state; acceptance of the ‘idea’ of a university embracing relevance and integration of knowledge and sharing with, and learning from, the wider community; internal reorganization to provide a stronger steer to entrepreneurial entrepreneurial endeavour while building on the natural autonomy of individual academics.

2.4. Research methods used in the master thesis

In order to achieve master thesis aims there were made certain research methods: macro-environment analysis, analysis of the university – business partnership determinants which were revealed during the analysis of theoretical and practice reality, specialist's attitude towards partnership and case study.

There are many factors in the macro-environment that could effect the social partnerships conditions and the decisions of any organisation. It is necessary to think about which factors could change and which factors could impact universities partnerships with international business subjects. There were four main factor groups analysed which can make an effect – political, social, technological, economic.

Political-legal factors refer to government policy such as its priorities in terms of business support, the degree of intervention in the economy, international policy. Political decisions can impact on many vital areas for business and university such as the education of the workforce, the quality of the infrastructure of the economy.

Economic factors include economic growth, inflation, unemployment. Economic change can have a major impact on a firm's or university's behavior – to impact investment level in any activities, to boost demand for a firm's products, innovations.

Social-cultural factors include mainly basic demographic characteristics such as level of education, culture, population age structure, attitudes to work, trends in consumers' preferences.

Technological factors can impact the creation of new products or processes. Tehnology can reduce costs, improve quality and lead to innovation. Technological factors include innovation, new product development, investment in research and development.

Analysis of determinants were made in order to find what does the impact for partnership and how strong relations there are between certain determinants. The correlation measures the strength of the linear relationship between numerical variables. In this case the goal is not to use one variable to predict another but to show the strength of the linear relationship that exists between the two numerical variables.

Pearson's correlation coefficient is a statistical measure of the strength of a linear relationship between paired data. It is denoted by r and is by design constrained as $-1 \leq r \leq 1$.

Furthermore:

- Positive values denote positive linear correlation;
- Negative values denote negative linear correlation;
- A value of 0 denotes no linear correlation;

- The closer the value is to 1 or -1, the stronger the linear correlation.

When r = ± 1 we say that there is perfect correlationwith the points being in a perfect straight line (Beaumont 2012).

Correlation is an effect size and so we can describe the strength of the correlation using the guide that Evans (1996) suggests for the absolute value of:

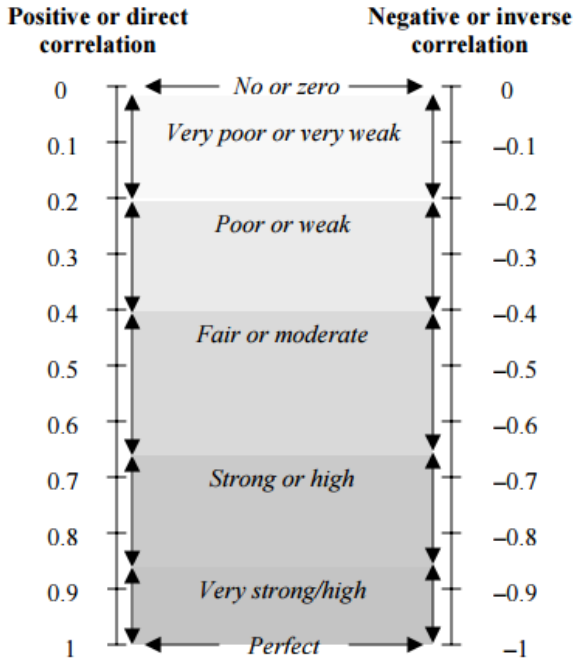

Figure 8. Interpretation of correlation coefficient.

Correlation can be measured by using correlation coefficient, also known as Pearson's correlation coefficient, to express the strength of the relationship. This coefficient is generally used when variables are of quantitative nature, that is, ratio or interval scale variables. Pearson's correlation coefficient is denoted by r and is defined by:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\{n\sum x^2 - (\sum x)^2\}\{n\sum y^2 - (\sum y)^2\}}} \qquad (1)$$

The value of r always lies between -1 and 1. If Y increases when X increases, we say that there is positive or direct correlation between them. If Y decreases when X increases (or vice versa), then we say that they are negatively or inversely correlated (Kenny 2004).

In order to know specialist's attitude towards universities partnership with international business subjects there were used case analysis, which was made by using secondary data and interviewing experts from different universities. The answers to the questions let to do the case analysis of university where the specialist works.

Case method is based on the idea of educational growth through understanding of past experiences in order to understand future experiences (Ahonen *et al.* 2010). The case study approach

allows in-depth, multi-faceted explorations of complex issues in their real-life settings. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences (Crowe *et al*. 2011). A case study design should be considered when: (a) the focus of the study is to answer "how" and "why" questions; (b) you cannot manipulate the behaviour of those involved in the study, (c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study; or (d) the boundaries are not clear between the phenomenon and context (Baxter, Jack 2008). Actual case studies allow to make a final decision on the measures to be taken on a business or university problem. A case study is an excellent opportunity to gain huge insight into a case. It enables the researcher to gather data from a variety of sources and to converge the data to illuminate the case.

These theories were used for further research and for the interpretations of results obtained.

3. UNIVERSITIES SOCIAL PARTNERSHIP WITH INTERNATIONAL BUSINESS SUBJECTS EMPIRICAL RESEARCH

3.1. Universities partnership with international business subjects development data based on facts

The review of secondary data was used in order to know universities partnership with international businesses development findings which already exist. There is shown below the analysis and interpretation of some researches which were made during 2010 and 2011 year. Results show the main situation of European countries in universities partnership with international business subjects field. According to Science-to-Business Marketing Research Centre researches it is very important to know and analyse social partnership drivers and barriers which can improve or disturb international development and cooperation. Research results showed different level of universities cooperation with international businesses barriers and drivers in different countries. All results are shown below in the table 4.

Table 4. Universities social partnership with international businesses drivers and barriers (Science-to-Business Marketing Research Centre, 2011).

Country	Short Code	Drivers	Barriers
Austria	AT	6.2	6.2
Belgium	BE	6.4	6.2
Bulgaria	BG	5.8	6.4
Croatia	HR	5.6	6.8
Czech Republic	CZ	4.8	6.5
Denmark	DK	7.1	5.7
Finland	FI	6.9	5.9
France	FR	6.8	6.3
Germany	DE	6.6	5.6
Greece	EL	6.0	7.1
Hungary	HU	5.5	6.4
Ireland	IE	6.6	6.4
Italy	IT	6.7	6.8
Latvia	LV	6.1	6.5
Lithuania	LT	6.5	6.9
Netherlands	NL	6.1	5.8
Norway	NO	5.6	6.1
Poland	PL	5.5	6.6
Portugal	PT	6.7	6.9
Romania	RO	6.5	6.8
Slovakia	SK	5.9	6.6
Spain	ES	5.9	7.0
Sweden	SE	7.1	6.1
Turkey	TR	5.8	6.3
United Kingdom	UK	6.5	6.1

Table 4 shows that the highest drivers for social partnerships are in Denmark and Sweden, meanwhile the highiest barriers are in Germany. Lithuania's partnership barriers are a little bit higher than drivers, barriers are equal to 6, 9, drivers are equal 6, 5.

Meanwhile, research showed that Lithuania has the highest extent of academics social partnership with international business subject's rate. The mean extent of cooperation in European countries is quite low and equal 3, 8. All results are shown below in the figure 9.

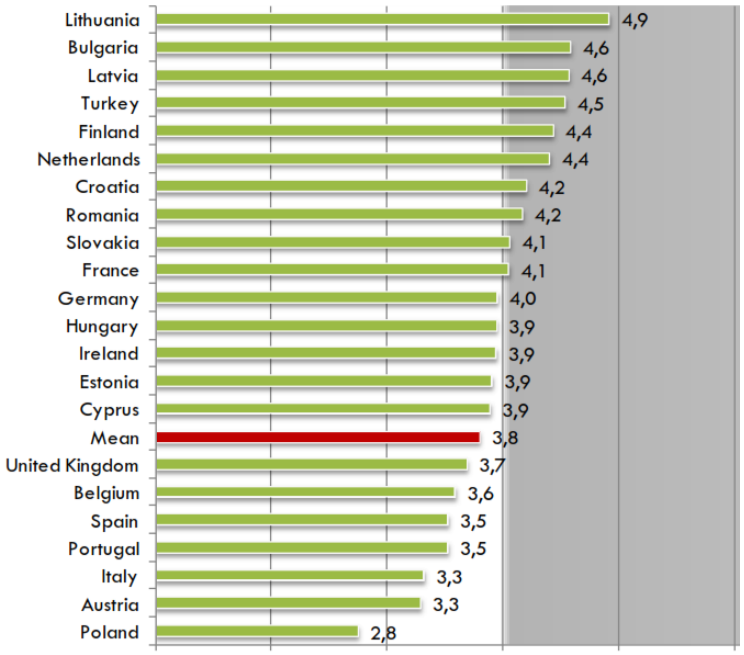

Figure 9. Extent of universities cooperation with international businesses (Science-to-Business Marketing Research Centre, 2011).

The same research were made in order to know the extent of cooperation for higher education institutions. The rate of Lithuania in this field was found also quite good, it was equal 6, 0. The mean extent of cooperation for universities in European countries is medium equal to 5, 7. That means, that Lithuania in this field has a higher rate than European countries rate.

As it was mentioned before there are 8 different possible ways for universities partnership with international business subjects. Research, made by Science-to-Business Marketing Research Centre showed the perceived level of universities cooperation with business in different countries regarding the 8 types of UBC. For each country, the type of cooperation with the highest extent is highlighted, all results are shown in the table 5 below.

Table 5. Universities partnership extent with business in different cooperation types (Science-to-Business Marketing Research Centre, 2011).

Country	Collaboration in R&D	Mobility of academics	Mobility of students	Commercialisation of R&D results	Curriculum development and delivery	Lifelong learning	Entrepreneurship	Governance	Total UBC
Austria	6.7	3.8	5.1	5.5	5.0	5.4	4.5	4.4	**5.0**
Belgium	6.3	4.5	5.9	5.6	5.5	5.4	5.6	4.5	**5.4**
Bulgaria	5.4	5.4	6.0	4.8	5.7	6.4	5.6	5.5	**5.8**
Czech Republic	6.1	5.0	5.8	5.0	6.3	6.3	4.0	3.9	**5.3**
Denmark	6.3	4.8	6.7	5.4	5.8	6.3	6.0	4.7	**5.8**
Estonia	5.1	4.1	5.2	4.7	6.9	6.4	4.9	4.0	**5.1**
Finland	7.4	5.3	7.0	5.4	5.9	6.6	6.0	5.0	**6.2**
France	6.8	4.0	6.8	5.2	6.3	6.2	6.0	5.9	**5.9**
Germany	7.2	4.6	6.7	5.9	4.9	5.3	5.6	4.7	**5.6**
Hungary	6.4	4.6	5.4	4.7	6.1	6.2	4.8	5.1	**5.6**
Ireland	7.9	5.1	7.2	7.7	7.3	7.1	7.6	6.8	**6.9**
Italy	5.8	4.8	6.0	5.0	5.9	5.5	5.1	4.7	**5.3**
Latvia	6.4	5.9	7.2	4.4	6.7	6.8	5.6	6.0	**6.4**
Lithuania	4.9	5.9	7.2	4.4	6.7	6.8	5.5	5.6	**6.0**
Netherlands	6.4	4.6	6.1	5.4	5.2	5.4	5.9	4.8	**5.4**
Norway	6.5	4.0	5.3	4.7	4.5	4.7	4.6	3.9	**4.7**
Poland	4.9	4.4	5.5	4.0	5.1	5.2	5.0	4.7	**4.9**
Portugal	6.0	4.8	6.8	4.8	6.0	6.4	6.1	5.1	**5.8**
Romania	6.8	6.3	7.2	5.5	6.9	7.0	6.5	6.4	**6.6**
Slovakia	5.1	4.8	5.4	4.4	4.9	5.5	3.9	4.3	**4.6**
Spain	6.9	4.9	6.6	6.1	5.7	6.4	6.3	5.5	**6.1**
Sweden	7.0	4.4	5.4	6.2	5.5	5.8	6.1	5.0	**5.7**
Turkey	5.6	5.0	5.4	4.5	4.6	5.3	5.7	5.4	**5.2**
United Kingdom	7.6	5.4	6.5	7.4	6.9	6.5	7.2	6.3	**6.6**

The highest extent of cooperation between universities and international business in Lithuania is mobility of students which is equal 7, 2, the lowest extent of cooperation is commercialisation of R&D results, where 10 means highly developed and 1 means not developed at all yet. The analysis of the secondary data let us see that student different exchange programs, internships, seminars in different countries are the main points in Lithuanian universities cooperation with business.

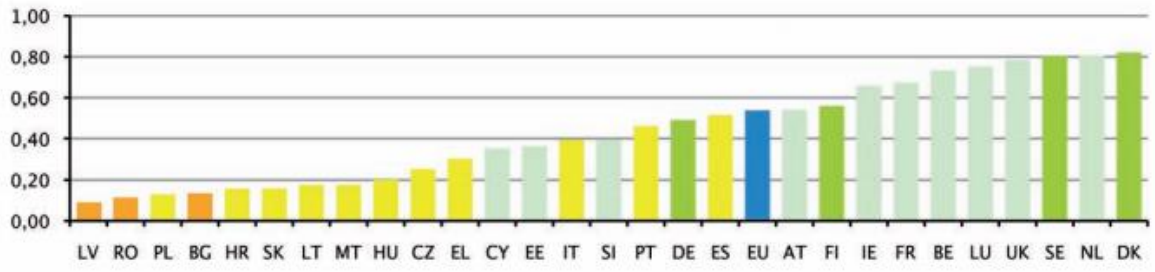

Figure 10. Country's performance in open, excellent and effective research systems (Innovation Union Scoreboard, 2014).

In open, excellent and effective research systems dimension the innovation leaders and followers are performing how innovation systems in these countries are open for cooperation with partners from abroad, researchers are well networked at international level and the quality of research output is very high. As the figure 10 shows, Denmark is the leader followed closely by the Netherlands, Sweden and the UK. Lithuania performs below the EU average. Performance differences between all countries are quite high for this dimension.

The interpretation of all these results can be assumed that there is still lack of external funding, financial resources for universities cooperation with international business subjects. Also one of the cooperation barriers can be different motivation, values, bureaucracy. Countries which have a high economic level straightaway go to the top of the table with cooperation driver's rate.

The results showed that here are two main fields of cooperation: collaboration in R&D and mobility of students. European universities have to be focused a lot on these cooperation types, there is a need for some moves in order to strengthen partnerships between universities and business.

3.2. Analysis of macro-environment factors which effect universities partnership with international businesses development

Political-legal environment. Government is involved in universities social partnership with international businesses activities. Government policy plays a key role as it can facilitate the internationalization of higher education. Political environment factors can help institutions to understand better the global landscape in which they operate, to identify the priorities of countries. International research initiatives, social partnerships, mobility of students can impact national competitiveness. It can support the expansion of internationalisation and make some decisions in order to safe its quality. Also funding is crucial to partnerships development and needs to be aligned with the national strategy. Investment is needed in order to enable collaboration in research, encourage collaboration for teaching and learning. Government is one of the main institutions which can support platforms for knowledge-sharing and networking on the strengths and weaknesses of the national higher education systems, reinforce institutional leadership to increase the capacity of higher institutions to identify and support centres of research excellence and teaching excellence with an international reputation. Universities partnership with international businesses could enable governments to develop national university systems within a broader, global framework, produce a skilled workforce with global awareness and multi-cultural competencies, benefits from trade in education services.

One of the main political environment factors is government expenditure on education. Expenditure on education can support economic growth, enhance productivity, contribute to people's personal and social development. Figure 11 shows government expenditure on education by countries and average of EU countries expenditure.

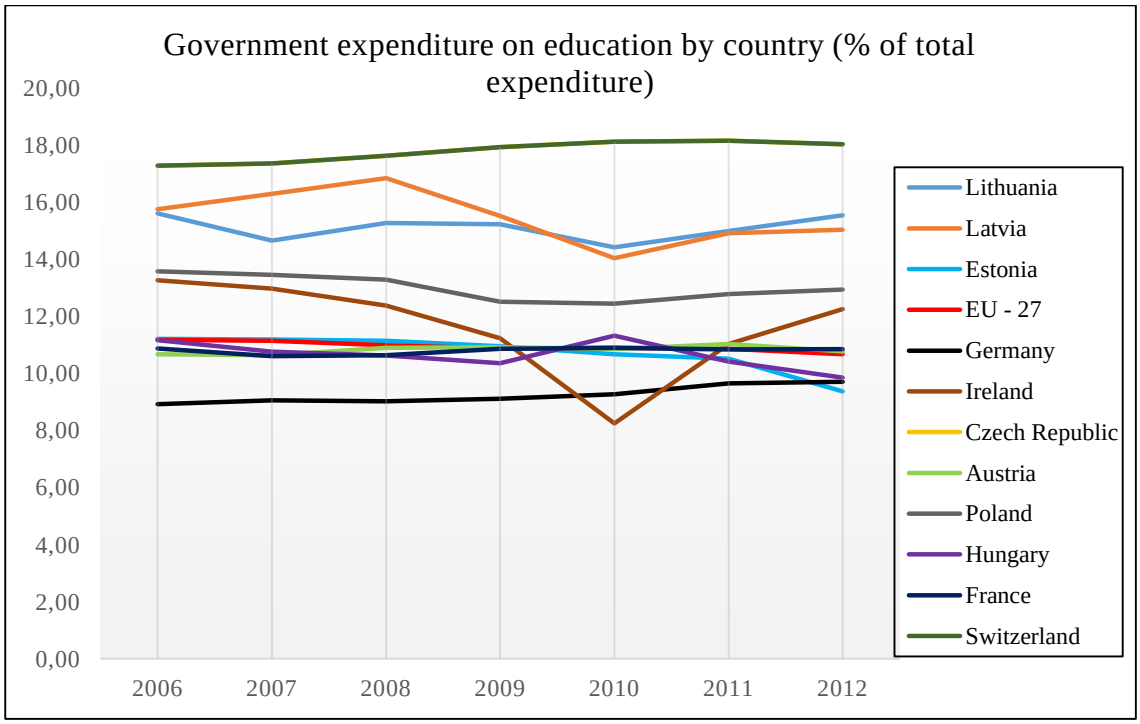

Figure 11. Government expenditure on education by country.

During 2012 Lithuania had the highest government expenditure on education level comparing with the other countries. General expenditure on education in EU countries every year was around 11%, Lithuania spent around 4% more on education every year comparing with EU average.

Economic environment. Universities cooperation with international business subjects support internationalisation of institutions, meanwhile, internationalisation contributes country-wide growth and innovation. It can help to influence global development and effect job markets. Often universities students or staff cooperation with business subjects can become into new activities, such as creation of off-shore campuses. Off-shore campuses can be established as enterprises wholly owned by the university, as joint-ventures with private partners that retain partial ownership, or as strategic alliances with governments or other entities that provide financial support, but do not participate as owners (Henard *et al*. 2012). In this case, this cooperation can give the advantage for the growing economy, new employment possibilities and academic market.

One of the main events in economic and political environment which gives a lot of attention for universities partnership with business is the Europe 2020 strategy. According Europe 2020 Strategy European Commission report, the Europe 2020 Strategy is designed to boost economic and financial growth in the European Union over the next decade. The rapidly changing global context means that the EU must become a smart, sustainable and inclusive economy. These three main priorities mean:

- Smart growth – developing an economy based on knowledge and innovartion.

- Sustainable growth – promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth – fostering a high-employment economy delivering economic, social and territorial cohesion.

The main point – smart growth – means, that strengthening knowledge and innovation are drivers of our future growth. This requires improving the quality of education, strengthening research performance, promoting innovation and knowldge transfer throughout the Union. The aim is to enhance the peformance and international attractiveness of Europe‘s higher education institutions and raise the overall quality of all levels of education and training in the EU, combining both excellence and equity, by promoting student mobility and trainees‘ mobility, and improve the employment situation of young people.

One of the main types of universities cooperation with international business subjects is cooperation in research and development field. In the figure 12 below we can see the gross domestic expenditure on Research and Development by countries in 2012 year.

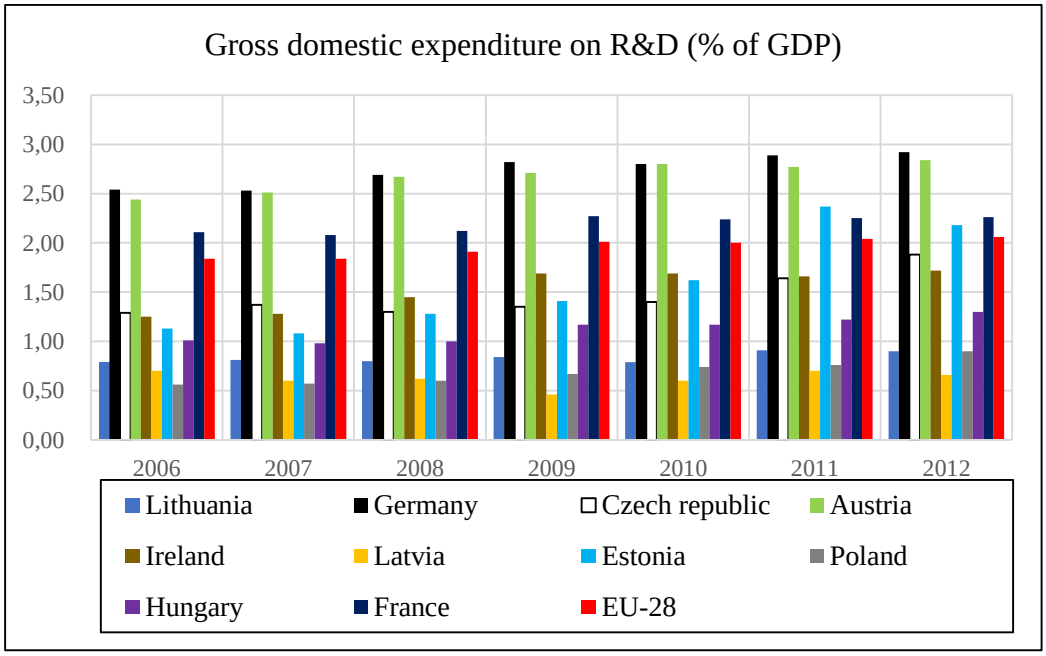

Figure 12. Expenditure on R&D by countries.

R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. Research and development spending is essential for making the transition to a knowledge-based economy as well as for stimulating growth. According Eurostat research, the average research and development spend in EU was 526 € per inhabitant in 2012. A decade earlier, in 2002, R&D expenditure per inhabitant had stood at 382 € per inhabitant. As we can see Lithuania spend almost twice less money for R&D than EU average. National target for R&D in 2020 is to spend 2% of GDP on Research and Development.

There is also one more important point in economic environment – youth unemployment level. There always are such problems like large number of young people entering the labour markets, the lack of employment opportunities, the low quality of education and training without a proper link to the labour market. As it was mentioned earlier, one of the main purposes of Europe 2020 strategy is inclusive growth, which reinforce the focus on young people. Young people are a priority for EU's social vision. Figure 13 shows youth unemployment level in different countries. The youth unemployment rate is the unemployment rate of people aged 15 – 24 as a percentage of the labour force of the same age.

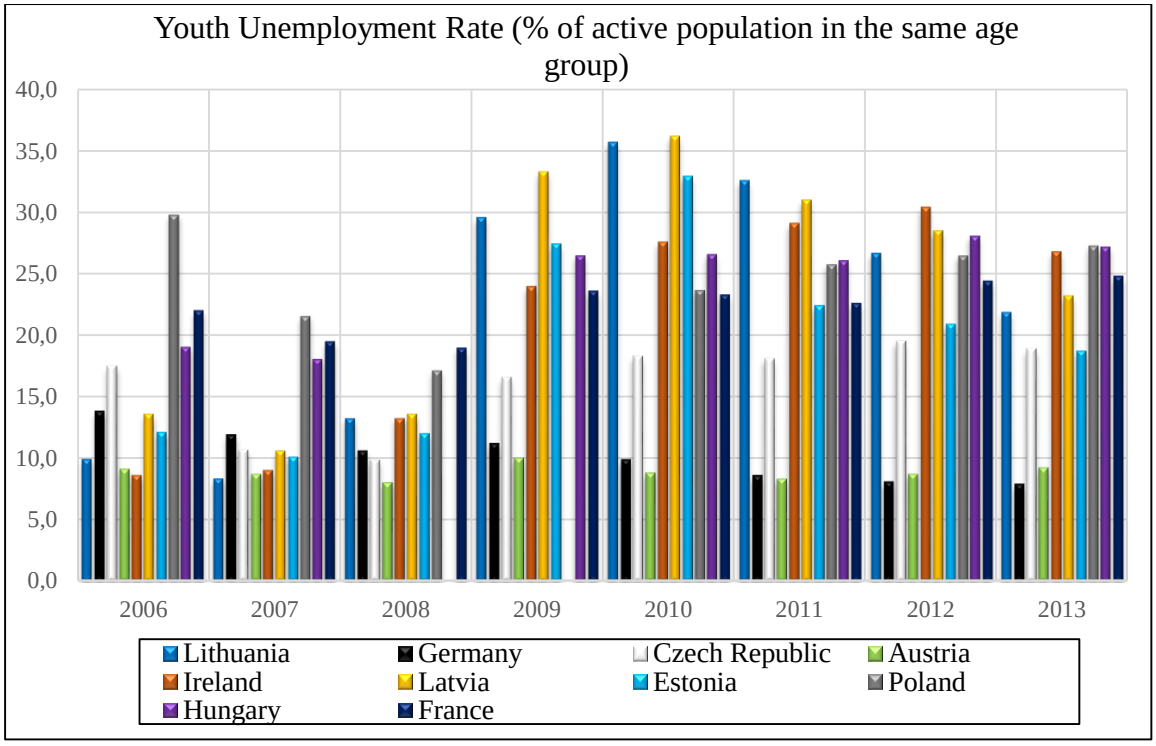

Figure 13. Youth Unemployment Rate.

The lowest youth unemployment rate has Germany, the highest – Estonia. The highest youth unemployment rate in Lithuania was during 2010. Nowadays it is lower around 10% comparing with 2010, that means that nowadays there are more and equal opportunities for young people in education and in the labour market. There is also higher promotion for youth to develop their skills, fulfill their potential, work, and actively participate in society. Quality education and training, successful labour market integration and more mobility of young people are key to inspire all young people's potential.

Social-cultural environment. Social partnerships with international business subjects can promote multiculturism and cross-cultural awareness. It can be the key ways to develop intercultural understanding and an international workforce.

Education is one of the main factors in social-cultural environment. It is important to observe the change of student's number, mobility of students, their activities in education and training. Education and training become essential for sustainable development and for economies.

A strategic framework for European cooperation in education and training was adopted in 2009 and set out four strategic objectives for education and training in the EU:

- making lifelong learning and mobility a reality;
- improving the quality and efficiency of education and training;
- promoting equity, social cohesion and active citizenship;
- enhancing creativity and innovation at all levels of education and training (Eurostat Statistical Books. Eurostat regional yearbook 2014, 2014).

The aim of Europe 2020 Strategy in education and training is that an average of at least 15% of adults aged 25 – 64 should participate in lifelong learning.

Figure 14 shows participation rate in education and training between active population from 25 to 64 years.

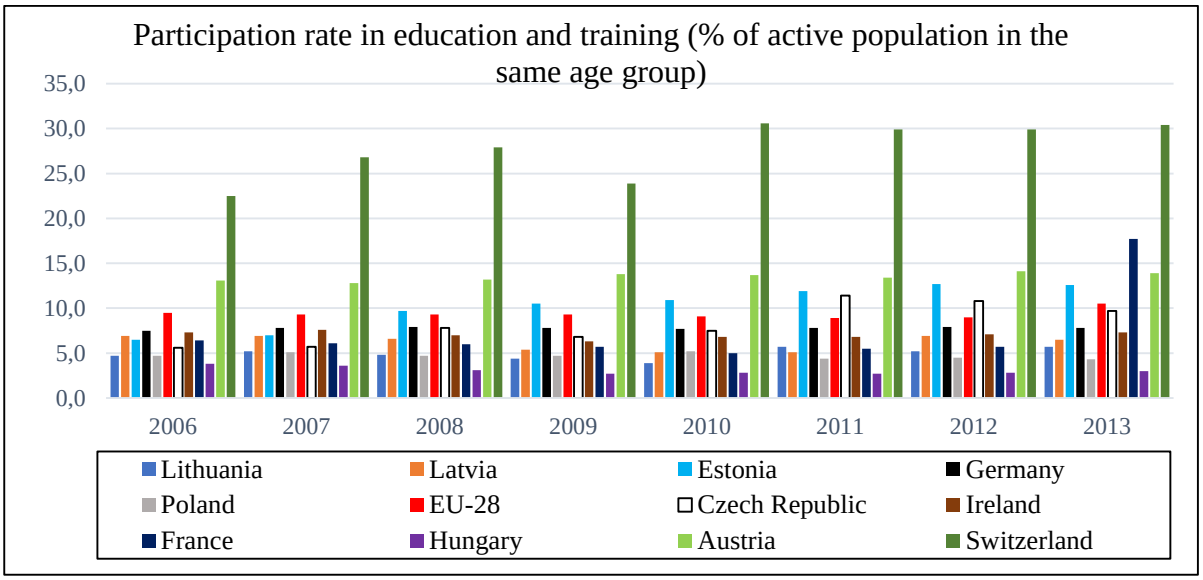

Figure 14. Participation rate in education and training.

Participation in education and training make a major contribution to cross-cultural understanding, personal development. The highest rate of participation in these activities has United Kingdom, it is almost twice bigger than EU average. United Kingdom is the only country which have reached the Europe 2020 strategy aim – to have 15% of population participation in education and training field among those which are compared in figure 12. Lithuania's people participation in education and training almost every year was equal around 5% of 25 - 64 year population.

According Europe 2020 Strategy, by 2020 EU average at least 20% of higher education graduates should have had a period of higher education – related study or training abroad. Recent years the number of students who are studying abroad increased quite significantly. Student mobility changes are shown in the figure 15 below.

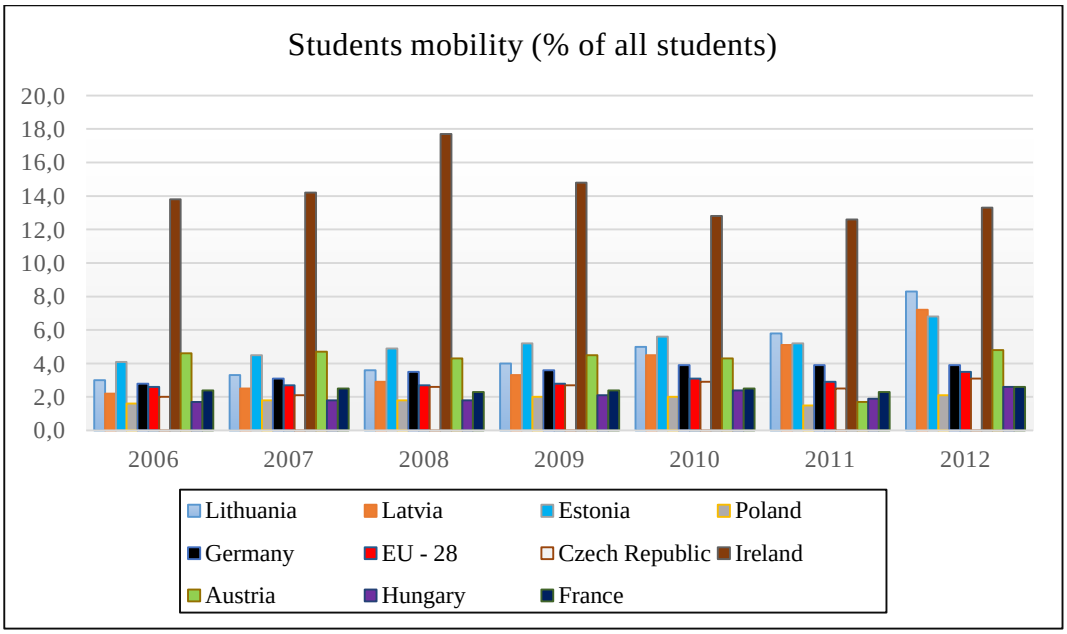

Figure 15. Student's mobility.

Comparing 2009 with 2012 Lithuania's student mobility increased almost twice, from 4% to 8%. The smallest number of students studying in another country was in United Kingdom. There a re obvious advantages which gives student mobility, such as: international experience, career development, intercultural skills, global outlook, new knowledge, source for inspiration, collaboration. That is why growing student mobility is a good sign for the country.

Technological environment. Nowadays students operate in a very different world and culture, technological factors can offer new educational opportunities with more flexibility or at a lower cost. Technological environment enables virtual partnerships, internationalization, which can increase access, collaboration and competition. Technological factors can provide additional material for partnerships or learning, to motivate performing students and staff.

Social partnerships could be developed more effectively with the better environment understanding, evaluating, developing a strategic approach. There are a number of different measures that universities and international business subjects can consider to enhance their internationalisation experience. In order to make successful partnerships both sides have to consider a lot of different things such as cultural context, to identify challenges that could be experienced, to analyse economic development trends, competition from other institutions, from other countries, evolving technology.

Nowadays one of the most important technological environment factors is innovation. According to the internationally accepted definition, innovation is the introduction of a new or significantly improved product (good or service) or process, new marketing method or a new management organization method into the practice of business, management or external relations. EU innovation performance has been increasing at an average annual rate of 1, 7% between 2006 and 2013. Growth in Linkages&entrepreneurship (1, 7%), Economic effects (1, 2%) and Innovators (0,

7%) has been positive. Strong performance increases were observed for Innovative SMEs collaborating with others (3, 8%) and License and patent revenues from abroad (3, 7%). EU is also improving its performance where more and more EU companies have in house capabilities to innovate and to collaborate with public or private partners (Hollanders, Es-Sadki, 2014).

Lithuania's performance in innovations field has been improving between 2006 and 2013. Due to rapid rates of improvement from 2011 to 2013 Lithuania is currently performing at 52% innovation index. High growth is observed for Community trademarks, most cited scientific publications and International scientific co-publications.

In the Figure 16 below are shown innovation growth rate changes during years.

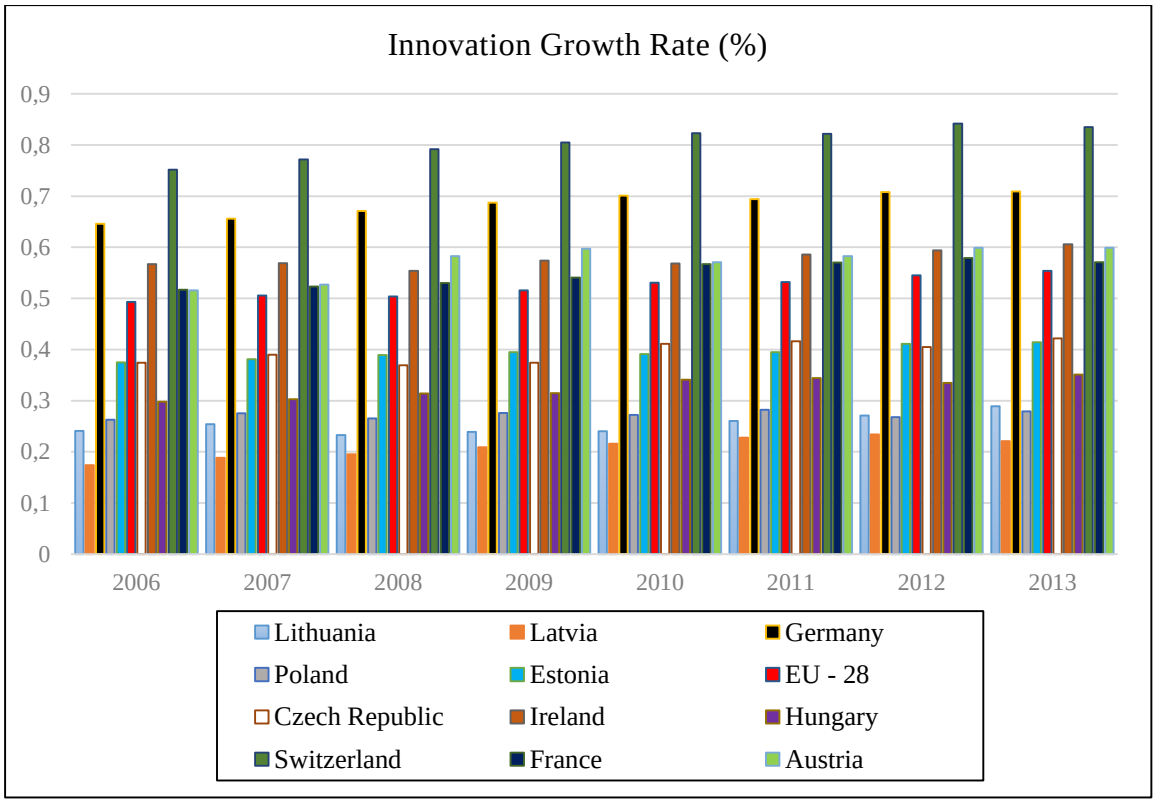

Figure 16. Innovation Growth Rate.

Nowadays, there is no such field in economy, where the importance of innovation is questioned. Innovations contribute to the success of any organisation. That is why innovative businesses are able to compete with large industry and see their value in the economy. Innovative enterprises are one of the possible outcomes of universities social partnership with international business subjects. Figure 17 shown below shows the proportion of innovative enterprises in different countries.

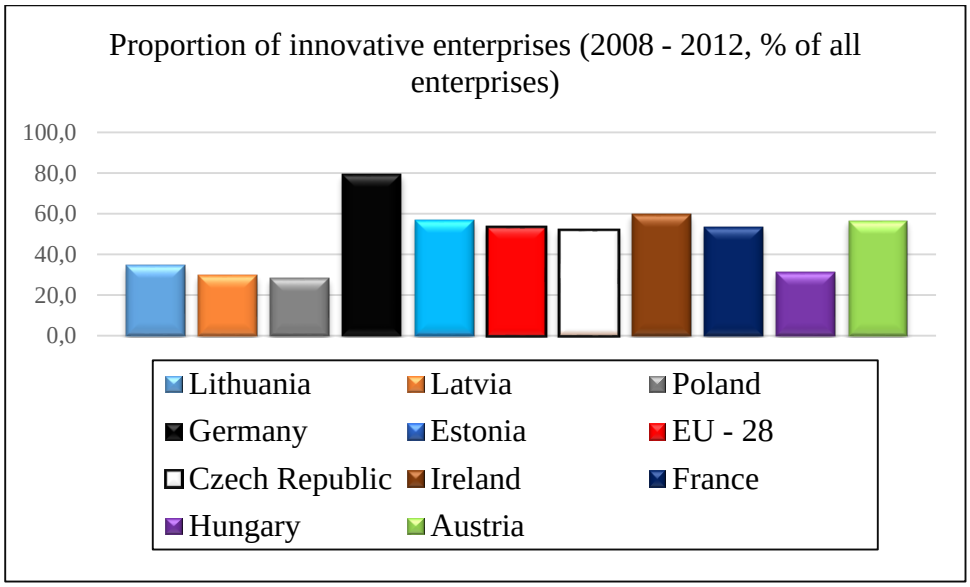

Figure 17. Proportion of innovative enterprises.

In the EU almost 53% of enterprises from industry and services reported innovation activity between 2008 and 2012. Among all EU countries, the highest proportions of enterprises with innovation activity were recorded in Germany (79% of enterprises), meanwhile, the lowest in Bulgaria (27%), Poland (28%), Latvia (30%). According the statistical office of the European Union, among the enterprises with product and process innovation activities in the EU – 28, 27% co-operated with other enterprises, universities or public research institutes. The highest proportions of innovation co-operation were found in Cyprus (62% of all product and process innovative enterprises), Austria (51%), Slovenia (45%), Lithuania (43%). The lowest cooperation were found in Italy (12%), Malta (18%), Portugal (20%) (Innovation survey, 2013).

3.3.Research of universities social partnership with international business subjects development: the analysis of results

3.3.1. Research for determining universities partnership with international business subjects dependence on factors that affect it: the analysis of results

In order to find the factors which affect or do not affect universities partnership with international business subjects there was made correlation analysis. The data have been collected for a set of 24 Universities from all over the Europe. The dimensions are as follows:

- External research income. Revenue for research that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organizations. Measured in € 1000s, using Purchasing Power Parities (PPP). Expressed per full-time equivalent academic staff.

- Research publications. The number of research publications (indexed in the Web of Science database), where at least one author is affiliated to the university.
- Co-publications with industrial partners. The percentage of all the university‘s research publications that list an author affiliate with an address that refers to a for-profit business company.
- Income from private sources. Research revenues and knowledge transfer revenues from private sources (include not-for profit organisations), excluding tuition fees. Measured in € 1000s using Purchasing Power Parities (PPP). Expressed per full-time equivalent academic staff.
- Spin-offs. The number of spin-offs (i.e. firms established on the basis of a formal knowledge transfer arrangement between the institution and the firm) recently created by the institution (per 1000 full-time equivalent academic staff).
- International academic staff. The percentage of academic staff (on a headcount basis) with foreign citizenship.

Multiple regressions have been applied to examine the relationship of variables, after testing data for normality. Multiple regressions were applied to test the model. Before model testing, descriptive statistics were obtained to overview the data. Table 6 below shows the descriptive statistics.

Table 6. Descriptive Statistics of European Universities data (created by author).

	N	Minimum	Maximum	Mean	Std. Deviation
External research income	24	.65	287.67	82.9042	72.82399
Research publications	24	1.02	564.00	84.4308	178.47525
Co-publications with industrial partners	24	.00	8.94	3.9617	2.58723
Income from private sources	24	4.98	147.20	32.5813	38.87441
Spin-offs	24	.00	42.57	8.9425	11.91369
International academic staff	24	.00	43.51	8.3192	11.25215

There were used Pearson’s correlation coefficient. This coefficient express the strength of the relationship. The results are shown in the table 7 below.

Table 7. Correlation Matrix of European Universities data (created by author).

		External research income	Research publications	Co-publications with industrial partners	Income from private sources	Spin-offs	International academic staff
External research income	Pearson Corr.	1	-.301	.653	.756	-.033	.213
Research publications	Pearson Corr.	-.301	1	-.254	-.242	-.230	.078
Co-publications with industrial partners	Pearson Corr.	.653	-.254	1	.576	-.193	.280
Income from private sources	Pearson Corr.	.756	-.242	.576	1	.001	.130
Spin-offs	Pearson Corr.	-.033	-.230	-.193	.001	1	-.229
International academic staff	Pearson Corr.	.213	.078	.280	.130	-.229	1

As it was mentioned in theoretical part when Pearson‘s correlation is close to 1 this means that there is a strong relationship between these two variables. Changes in one variable are strongly correlated with changes in the other variable.

All results are marked according their correlation strength. The highest correlation was found between external research income and income from private sources. There is also strong correlation between co-publications with industrial partners and external research income and income from private sources. Changes in one variable are strongly correlated with changes in the other variable.

The other results show that there is very weak or weak correlation between variables.

One of the universities cooperation with international business types is mobility of academics which includes movement for academics between business and university, cooperation in R&D. Results showed that even academics are active and participate in a lot of different activities including research fields it does not affect external research income, correlation between these two variables is weak.

Table 7 also shows that coefficient between external research income or income from private sources and research publications is quite low. So it can be assumed that usually universities focus on it‘s income from different sources or it‘s publications writing and circulation. In order universities would be successful and active in both areas there should be pay more attention for university‘s staff

who have to take care of getting the external income from university‘s publications, there is a need for a certain area vendors and representatives of university‘s publications and researches for a certain market. Meanwhile, external research income has more than twice bigger correlation coefficient with co-publications with industrial partners than research publications. It can be assumed that working together with international business partners and making joint projects and publications give a lot of advantages for university‘s income and it‘s rank.

Correlation results also showed that there is a very weak relation between income from private sources and spin-offs. There is no income benefit for university from spin-offs. Meanwhile, usually the main spin-offs for the universities are related to international cooperation.

There also should be add that external research income includes revenues from research grants and research contracts awarded by national and international organisatins as well revenues from specific research projects and university’s research publications. In order to see better and more accurate results between universities cooperation with international business there should be included only those revenues which were obtained from cooperation with international business and excluded those researches which are commissioned.

When Pearson‘s correlation is positive this means that as one variable increases in value, the second variable also increase in value. Similarly, as one variable decreases in value, the second variable also decreases in value. Meanwhile, when Pearson‘s correlation is negative this means that as one variable increases in value, the second variable decreases in value.

Table 8 shows the results of multiple regressions. R^2 gives the amount of variance in external research income explained by the independent variable. R^2 varies between 0 and 1. In this case the value of R^2 is 0, 654 which means that 65, 4 percent of the total variance in external research income has been explained. The final column gives the standard error of the estimate. This is a measure of how much R is predicted to vary from one sample to the next. The value of adjusted R^2 is 0, 557. This adjusted measure provides a revised estimate, i.e. 55, 7 % of the variability in external research income due to the fitted model.

Table 8. Correlation analysis model summary (created by author).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1.	.808[a]	.654	.557	48.45345

Analysis of Variance (ANOVA) tests whether two or more meand are significantly different from each other. One of results which show ANOVA is Sig value which is very important. Sig shows the exact significance level of the ANOVA. Any value less than 0, 05 result in significance effects,

while any value greater than 0, 05 result in non significant effect. In this case ANOVA showed the exact significance of 0, 001, so it can be assumed that the results are statistically significant.

There is shown below correlation curve:

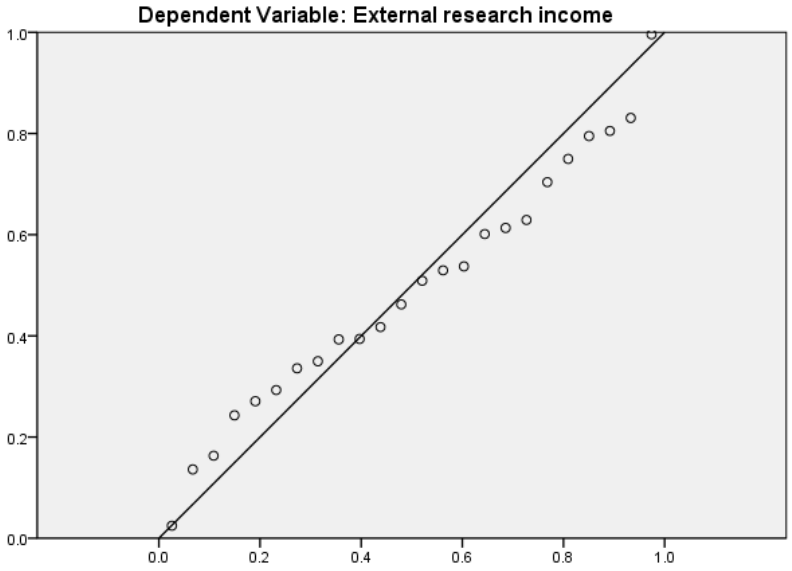

Figure 18. Correlation curve.

Figure 19 shows that there is a positive correlation. Variables move in the same direction. In other words, as one variable increases, the other variable also increases. As one variable decreases, the other variable also decreases. Correlation analysis confirmed that there is connection between universities' work and practice and regular external financial flows.

3.3.2. Specialists attitude towards universities social partnership with international business subjects: the analysis of research results

Case analysis were used in order to find what is situation in field of partnership with international business subjects in other European universities. There were chosen three universities: Vilnius Gediminas technical University (Lithuania), Institute of technology Tralee (Ireland) and Kufstein University of Applied Sciences (FH Kufstein). All three universities have fields in which they are similar, like fields of studies.

There were interviewed an expert from every university in order the information would be right and case study would be based on the real situation. These interviews and case studies let to develop critical thinking, understand others, to see personal views, different opinions. There are given the main information of every university which let us to compare the situation of universities'.

VGTU excels in the fields of Informatics, Techno-mathematics, Bioengineering, Civil Engineering, Computer Engineering, Business Management, Environmental Engineering,

Architecture and Real Estate Management. Vilnius Gediminas technical University is a leader in Lithuania in technical science field and as well is one of the European leaders in the field of technology science. VGTU is an active member of different international organisations, projects and programmes. Different activities are developed by participating in social programs, variety of complex projects both at national and international level. Table 9 shows the main information of the university.

Table 9. Vilnius Gediminas technical University main information (created by author).

Vilnius Gediminas technical University (VGTU), Lithuania	
Location:	Vilnius, Lithuania
Size:	Number of students: 12 563 Number of employees: 1733
International business partners:	More than 80 international partners
Level of external (non-state) income:	40%
Special features:	More than 300 foreign university partners University has 3 research centers, 14 research institutes, 33 laboratories

Expert from VGTU claimed that the main barrier which prevents cooperation for the university is different motivation and values between university and business. In this case the main obstacles for cooperation were those which are related with interest, internal promotion, values and beliefs. VGTU expert also mentioned that one of the biggest obstacles is difficulties in finding suitable cooperation partner. In expert's opinion university's cooperation with international business most help for university's internationalization as well for graduates to improve their employability.

VGTU is an active participant in different projects, programs, researches that is why collaboration in R&D was declared as the most advantageous type of cooperation. All actions related with R&D and it's commercialisation gives for the university the biggest benefits and are very effective for university's attractiveness and awareness in the country. Vilnius Gediminas technical University has quite interesting situation in cooperation with international business field. Expert determined that financial obstacles are least influencing the cooperation meanwhile this is the main obstacle almost for all other university's. And as the least developed areas in the university were described as a documentation embracing, internal promotion and motivation for academics to enocurage university-business cooperation. This situation is totally different comparing with IT Tralee and FH Tirol universities' situation.

FH Tirol has these main areas of studies: Arts & Humanities, Business & Social Sciences, Language & Cultural, Medicine & Health, Engineering, Science & Technology. University's expert

claims that FH Tirol focuses on international standards, mobility and permanent innovation of knowledge. Kufstein University is one of the leading higher education institutions in Europe because of it‘s highly practical orientation, living internationally, applied research and continuous development.

Table 10. Kufstein University of Applied Science main information (created by author).

Kufstein University of Applied Sciences (FH Kufstein), Austria	
Location:	Kufstein, Austria
Size:	Number of students: 1200 Number of employees: 260
International business partners:	Around 65 international partners
Level of external (non-state) income:	47%
Special features:	More than 150 foreign university partners University has institute WEBTA for IT and technology researchers and development

FH Kufstein expert pointed that cooperation helps a lot to improve university‘s research and development area, creation of joint working groups between academic staff, business partners and researchers. Also one of the advantages that gives cooperation is the improvement of graduates employability and university‘s internationalization. The most successful and beneficial cooperation type is collaboration in R&D. FH Kufstein has it‘s strategy for university – business coopertion. One of the most developed areas related with university – business cooperation is networking meetings for academics and students to meet people from business, FH Kufstein tries to invite a lot of business representatives to the university‘s events, special lectures in order they could tell their success stories, to offer their help for students in different their study researches.

IT Tralee has the main three departments: the first one is Business, Computing and Humanities, the second one is Science, Technology, Engineering and Mathematics, and the third one is Health and Social Sciences. IT Tralee shares a joint campus with Kerry Technology Park (enterprise incubation space) promoting a culture of enterprise and synergy between businesses and highly - skilled graduates. Table 11 shows the main information of IT Tralee.

Table 11. Institute of technology Tralee main information (created by author).

Institute of technology Tralee (IT Tralee), Ireland	
Location:	Tralee, Ireland
Size:	Number of students: 3531 Number of employees: 337

International business partners:	More than 50 international partners
Level of external (non-state) income:	35%
Special features:	Almost 100 foreign university partners University has Tom Crean Centre which provides start-up businesses

The answers of expert from Institute of technology Tralee showed that the main difficulties and barriers for successful partnership are caused by the lack and difficulties in finding suitable cooperation partners as well lack of interest of cooperation opportunities from one or another side. These barriers are the most important as well as for the Vilnius Gediminas technical University. Expert agreed that there are also some activity areas which are not well developed at the university in order to protect successful partnerships, such as: documentation embracing university-business cooperation, funding to support university-business cooperation and the least developed entrepreneurship education offered for academics. IT Tralee feels that there are less benefits from mobility of academics and commercialisation of R&D results as from cooperation type. But it feels a lot benefits from cooperation in entrepreneurship education and training (via Tom Crean Centre). University focuses on making a strategy for cooperation and do the special focus on the management level and preparation for university-business cooperation. Expert claimed that partnerships give only advantages for university, students and staff and all partnership forms are very welcomed.

The IT Tralee case shows that there are high interest level from university side and the main barriers for cooperation come from outside: financing, partner's interest, etc.

All information got from different university's experts is useful and applicable to university's partnership with international business development problem solving. Three different university cases showed that all universities have different situations, preferences and obstacles. All universities pointed clearly that one of the biggest obstacles that they face in cooperation with international business is difficulties in finding suitable cooperation partners. IT Tralee which is focused on entrepreneurship promotion of students claims that the biggest help from cooperation is that university gets better possibilities for relations with external partners development, new scientific topics emergence. VGTU which is more focused on activities in different programs, projects, researchers and student's experience during studies sees advantages of cooperation in the areas of efficient human resource management and the improvement of graduate's employability. FH Kufstein which is focused on practical orientation, research and development claims that the biggest advantages which gives cooperation are creation of joint working groups between academic staff, business partners and researchers and emergence of new scientific topics. That is worth to mention that VGTU university which has bigger academic staff and students number comparing to two other

universities highlighted that university does have less problems with funding, carrer office or the scatter of information. There is a lack of activity skills, motivation, promotion and easy documentation. These all areas can be improved within university without external sources, so it could be easier to develop partnerships. Universities with less staff number find difficulties in financial area. It lets us to assume that when there are many workers – academic staff and students – there is more harder to concentrate and focus them on common goal. As we can see all universities find easily the best points in partnerships with international business.

Despite that there are different preferences and choices in cooperation areas, obtained advantages and rising barriers all three experts pointed some points with the same relevance. All three experts from different universities said that one of the main obstacle for universities' partnerships with international business are difficulties in finding suitable cooperation partners. Cooperation helps to improve university's internationalization level of all universities. And as the least developed are in partnership field was described a documentation embracing university – business cooperartion.

Case study results confirmed the hypothesis that there is a lack for cooperation strategy at the universities. Specialists affirmed that there still are some barriers in systematic work area, common activities lack coherence and synergy between each other. There is a need for development model which could help to concentrate on areas of concern.

4. UNIVERSITIES SOCIAL PARTNERSHIP WITH INTERNATIONAL BUSINESS SUBJECTS DEVELOPMENT MODEL

Each of 8 university partnership with international business areas has a lot of benefits and drawbacks. The best cooperation depends on university's and business goals and capabilities. According literature review and all researches made there are shown suggested development model below in order cooperation would be smoother and successful.

Figure 20 below shows all significant steps in order to build and develop successful partnerships with international business. There three main parts in this model. First of all, there are given provisions on cooperation which are very important from the very beginning, all points have to be discussed in order to choose suitable partnership development level. Second of all, there are given basic and specific cooperation principals which are given according empirical research results. According to partnership development level there have to be certain principals fulfil and strengthen. Third of all, there are given benefits obtained, which get both sides from their successful partnerships. Benefits are given from the analysis of theoretical and empirical research results.

First of all, there have to be provisions on cooperation made. There are given main questions which have to be answered such as: does university have a development strategy for partnerships with international business? Are there any clear goals, vision, tasks? Is university able and capable to manage the collaboration? And what does university want to achieve from cooperation with international business? After that, it is very important to estimate resources which are capable and able. Universities have to pay attention to their human resources which they have, their capability, what foundation do they have. Maybe there is a need for additional funding. Do they have all technological conditions, which they can suggest for business in order to do common researches or innovations. And after all, it is very important to determine time of cooperation, how long they want and they are willing to cooperate together. Moreover, how long university will have human resources which they can deliver for business. And from business side of view, how long they will be able to share their ideas and communicate with university representatives.

Second of all, this partnership development model suggests to choose one or more partnership modes from three partnership development levels: regional, local and international. According university and business capabilities, they have to decide how intensive and broad do they want to cooperate. Each level has main actions and principals which have to be done in order to cooperate successfully. All principals are separated as basic and specific. Basic actions are suitable for all types of partnership development levels that means, that university and business have to strengthen and pay attention to all basic principals despite what level of cooperation do they want to achieve.

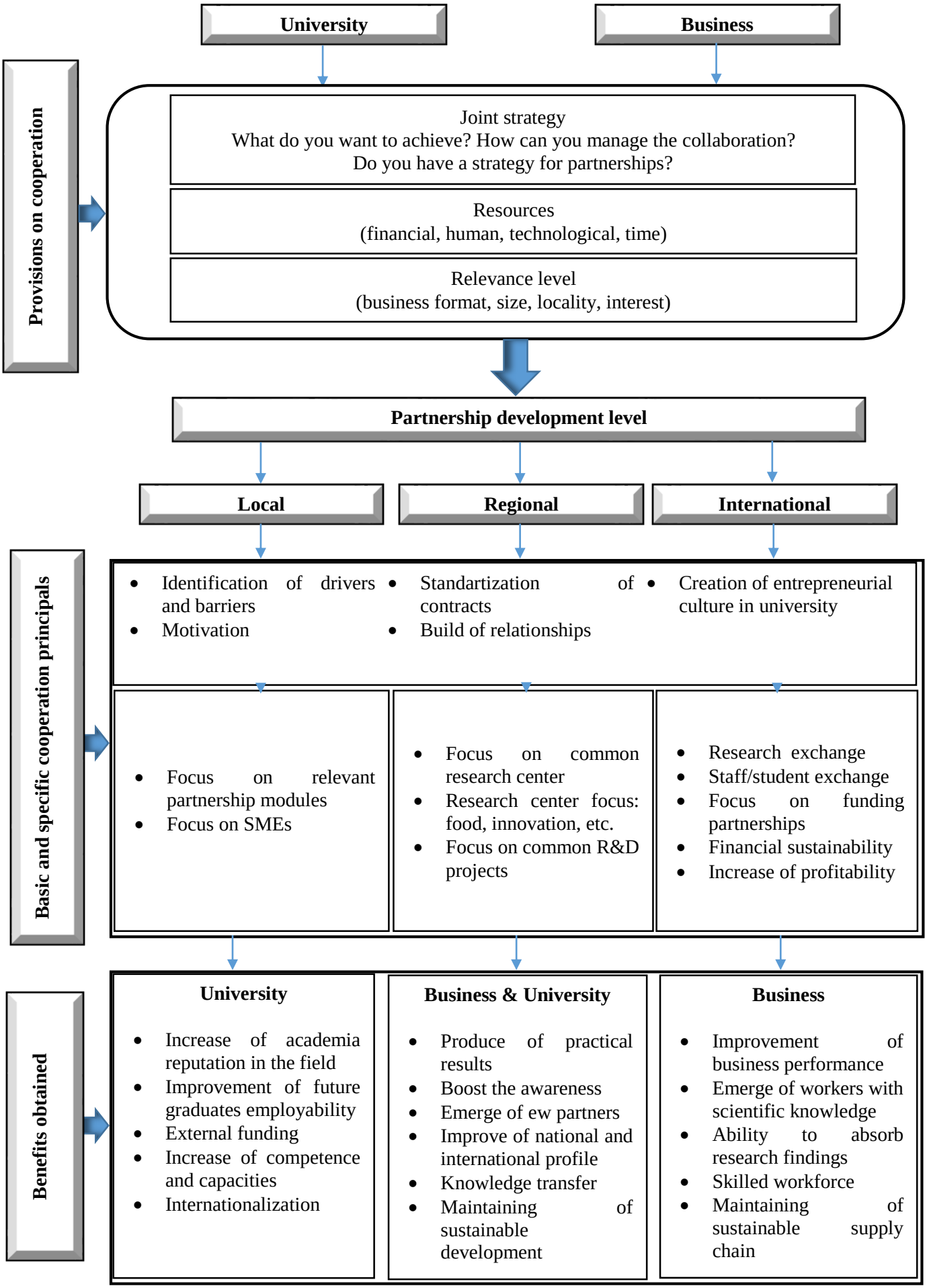

Figure 19. Universities partnership with international business development model (created by author).

There are basic principals:

- Motivation. Universities have to adopt open minds and be receptive to beneficial partnerships. There have to be the existence of mutual trust, mutual commitment and shared goals. There has to be commitment to create a strategy for relations with international business. Universities with strong motivation and strategies will keep the partnerships easier.
- Build of relationship. Universities have to be motivated to build relationships with international business and for that there are a lot of different ways: university could initiate by establishing creative programs for faculty members to spend time in industrial sector, to motivate staff immersion in the corporate sector. Talented university members could become „intelligent bridges“to industry which would strengthen partnerships. University have to show that they are willing to share their space and facilities, to share risk and reward for engagement.
- Standartization of contracts. The analysis of specialists' attitude towards universities social partnership with international business subjects showed that funding and bureaucracy are the most relevant barriers. There are too many different documents and documentation embracing university – business is too complicated, so it takes too much time and sometimes even reduce motivation to cooperate. Simple and standartized contracts would help to speed up idea creation and decision making. That is why documentation and contracts have to be as easy and fast to fill as possible.
- Identification of drivers and barriers. The importance of barriers is not smaller than importance of drivers. So both have to be discussed and identified. Those universities which perceive drivers and barriers are more engaged in partnerships.
- Creation of entrepreneurial culture in university. Nowadays there are a lot of challenges for universities which they have to face: the information and communication technology revolution, rapid changes in economy, difficult funding conditions, etc. There are a lot of approaches for delivering entrepreneurial culture at university: use of mentors, living laboratories, etc. Universities should see themselves as entrepreneurial organisations with common values. Universities have to encourage innovation throughout its research, knowledge exchange, teaching and learning, external relations. University's staff have to be encouraged to do strategic planning and decision-making, to bring together staff and students in working groups to look at the issues, come to an agreement and areas of immprovement.

Despite basic principals, there are also given specific principals, which depend on chosen partnership development level. Local level have such specific principals as:

- Relevant partnership modules. It is very important to do partnerships which would be relevant and would help to develop something useful for community. Universities partnerships with international business have to agree on their partnership modules, for example, they can agree to provide together opportunities for regional start-ups, or to help for established companies to determine their strategic direction of development, etc.
- Focus on SMEs. Universities have to support their community development, so they can focus on providing facilities to others, participating in local or regional clusters, supporting local cultural activities. There can be focus on communities, local organisations, local government chambers of commerce.

  Regional partnership level principals:
- Focus on common research center. Common reserach center could be a very important tool which could be used to support new start-ups, spin-offs, to build links to industry. University can provide laboratories, research facilities, IT services, training, meanwhile, business can provide financing. There would be knowledge exchange from both sides by organising lectures, joint workshops, other networking events.
- Research center focus: food, innovation, etc. There can be established also focused research centers. It depends on what activity university and business are concerned and interested. So they can establish research center where could be find new discoveries and investigations in a certain field. In this case knowledge exchange would be used by it‘s all potential, business could order some researches which would be suitable for their main activity or market analysis on specific product, etc.
- Focus on common R&D projects. There can also be created R&D projects, which could be ordered by international business.

  International partnership level principals:
- Research exchange. It is very important to do exchange of information, results from research. Researches have to be published and known. There have to be a need to integrate results of researches into teaching.
- Funding partnerships. Universities have to try to start funding partnerships, which would give for university more freedom and opportunities to do researches, collaborative projects, etc. There have to be organized networking events, where university representatives can meet possible partners and investors. University should support staff, students and graduates to help them to find private financing opportunities.
- Staff/student exchange. University – business partnerships have to provide opportunities to experience entrepreneurship, different space, different work place. In such spaces staff and

students get challenges which encourage them to develop their entrepreneurial skills, access real life problems, learn in practice.

- Improve sales and profitability. Universities have up to date information on their location, activities and possibilities, they have to maintain regular contacts with external partners.

There are a lot of benefits which get university and business from their successful partnerships. All three levels of partnerships local, regional and international let university and business be more innovative and more known. Universities play several roles in their country do they have to support and drive regional, social and community development. Partnerships with international business let to be active players, to have a strong presence in the community. Collaborating with external partners let to have new relationships which can be an important source of expertise and experience. Partnerships also help to boost employability of graduates and develop career, it creates value in many different ways in society. Staff and student exchange also helps to increase employability, moreover, it increases also and universities‘ ability to compete on the international market. Better competence and capacities match to the demands of the business, especially, students are much better oriented about the demand in the labour market. Meanwhile, business representatives during different forums, guest lectures and seminars can attract and train young graduates. Partnerships give a possibility for business to use laboratories with the help of academic staff in business projects. Model shows basic principals which have to be done in order to achieve partnership goals for both sides, such as establish mutual dialogue, develop structured government policy, keep sustainability in different programs and funding, involve business representatives in the university management.

This universities partnership with international business subjects development model gives advantages for both sides. Despite what development level is chosen there are given certain principals which have to help to develop partnerships smoother. This model shows the right ways and decisions which have to be taken in order partnership between university and business would be adequate for both sides, more integrated and systematic.

CONCLUSIONS AND RECOMMENDATIONS

This final paper presents university‘s partnership with international business current situation, possible models and development possibilities. Nowadays university is an integral part of the supply chain to business which provides innovation and skills. That is why university collaboration with international business has a number of different common partnership activities and areas, such as: collaboration in R&D, mobility of academics, mobility of students, commercialisation of R&D results, curriculum development & delivery, lifelong learning, entrepreneurship education and training, governance. This final paper presents all advantages and barriers for these partnership areas.

The main model which describe university – business partnership is The Triple Helix Model, which is one of the first models which started to claim that university has to start to cooperate with industry and government and to have more missions than just teaching and learning. Nowadays innovative and active university is known as entrepreneurial university.

Statistics showed that Lithuania has the highest extent of academics social partnership with international business subject’s rate, the highest drivers for social partnerships are in Denmark and Sweden. Macro-environment analysis showed that comparing 2009 with 2012 Lithuania’s student mobility increased almost twice. Also Lithuania’s performance in innovations field has been improving between 2006 and 2013. This result is very good because one of the partnership types is collaboration in R&D, which includes innovations. The analysis of the secondary data showed that there is still lack of external funding, financial resources for universities cooperation with international business subjects. Also cooperation can be negative affected by different motivation, values, bureaucracy.

There was also made correlation analysis which showed that external research income correlates with co-publications with industrial partners. Correlation results also showed that there is a very weak relation between income from private sources and spin-offs. There is no income benefit for university from spin-offs. Correlation results showed that working together with international business partners and making joint projects and publications give a lot of advantages for university‘s rank.

Case Analysis was made with three different universities: FH Kufstein in Austria, IT Tralee in Ireland and VGTU in Lithuania. There were asked experts from all three universities which let to do the analysis of the universities’ real situation in cooperation with international business area. All universities agreed that all cooperation forms are advantageous and useful for university and it’s activity in different fields. The main barriers for partnerships were described as difficulties in finding suitable cooperation partners, lack of interest of cooperation opportunities from one or another side,

different motivation and values between university and business subjects. Cooperation helps to improve all areas at the university, but most it helps to boost university's internationalization level. All three experts from different universities claimed that least developed area in partnership with international business area at their university is a documentation embracing cooperation and funding to support university – business cooperation.

The analysis of theoretical review and researches made let to create university's partnership with international business subjects development model, which shows the main actions and principals that university has to take in order to start successful partnerships with business in local, regional and international level.

Moreover, analysis and researches made let to give these recommendations for universities:

- Universities have always keep searching for new funding opportunities, so there would be more possibilities to cooperate with different business members, also there would work more people in this area who would help to find suitable partners.
- There has to be made easier and basic way of documentation in order to do partnerships. Bureaucracy is still very big issue which takes a lot of time and motivation from both sides.
- Universities have to be open - minded and think about all possible suggestions and possibilities, there have to be encouraged innovative and commercial mindset of academics, payed more attention for marketing strategy.
- Strategies to ensure the development of student's employability and entrepreneurial skills should be implemented by universities in the context of the university's mission.
- Universities and business subjects have to do annual meetings and try to keep their relationships consistent. Partnerships need to be constantly evaluated, reviewed and updated. That would be help for partnerships to be more sustainable and engaging. The joint work with the business subjects helps to create mutual trust and communication and cooperation, which benefits both sides.

REFERENCES

1. *A Guiding Framework for Entrepreneurial Universities*. 2012. Prepared by European Commission and OECD. Access via Internet < http://www.oecd.org/site/cfecpr/EC-OECD%20Entrepreneurial%20Universities%20Framework.pdf >.
2. Ahonen, M., Ammerman, P., Buciuniene, I., Buoziute-Rafanaviciene, S. 2010. *Stories told in the classroom. How to write and teach case method.* Kaunas, Tartu.
3. Baxter, P., Jack, S. 2008. *Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers.* The Qualitative Report. Vol.13.
4. Beaumont, R. 2012. *An Introduction to statistics Correlation.* Access cia Internet < http://www.floppybunny.org/robin/web/virtualclassroom/stats/basics/part9.pdf >.
5. Carnwell, R.; Carson, A. 2009. *Effective Practice in Health, Social Care and Criminal Justice: A Partnership Approach.*
6. Crow, M. M. 2008. *Building an Entrepreneurial University.* Arizona State University.
7. Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., Sheikh, A. 2011. *The case study approach.* BioMed Central Ltd.
8. Dan, M. 2013. *Why should University and Business Cooperate? A discussion of advantages and disadvantages*. International Journal of Economic Practices and Theories, Vol. 3, No.1.
9. Etzkowitz, H. 2002. *The Triple Helix of University-Industry-Government Implications for Policy and Evaluation.* Science Policy Instituute. Stockholm.
10. Etzkowitz, H. 2007. *University-Industry-Government: The Triple Helix Model of Innovation.* Business School, Newcastle University.
11. Eurostat Statistical Books. 2014. *Eurostat regional yearbook 2014.* Access via Internet < http://ec.europa.eu/eurostat/documents/3217494/5786129/KS-HA-14-001-00-EN.PDF>
12. Forum "Europe 2020 – A Promising Strategy?", Volume 45, 2010. Access via Internet < http://www.intereconomics.eu/archive/year/2010/3/europe-2020-a-promising-strategy/>
13. Gibb, A. 2012. *Exploring the synergistic potential in entrepreneurial university development: towards the building of a strategic framework.* Emeritus University of Durham. Durham, UK.
14. Gibb, A.; Hannon, G. 2006. *Towards the Entrepreneurial University?* National Council for Graduate Entrepreneurship, Emeritus University of Durham. Durham, UK.
15. Harell, Margaret C., Bradley, Melissa A. 2009. *Data Collection Methods. Semi-Structured Interviews and Focus Groups.* National Defense Research Institute. USA.

16. Hartley, M.; Huddleston, T. 2010. *School-community-university partnerships for a sustainable democracy: Education for democratic citizenship in Europe and the United States of America.* Council of Europe Publishing.
17. Henard, F., Diamond, L., Roseveare, D. 2012. *Approaches to Internationalisation and Their Implications for Strategic Management and Institutional Prictice.* OECD Higher Education Programme IMHE.
18. Hollanders, H., Es-Sadki, N. 2014. *Innovation Union Scoreboard 2014*. 2014. Access via the Internet <http://ec.europa.eu/enterprise/policies/innovation/files/ius/ius-2014_en.pdf>
19. Innovation survey: Highest proportions of innovative enterprises in Germany, Luxembourg and Belgium. Access via the Internet <http://ec.europa.eu/enterprise/newsroom/cf/itemdetail.cfm?item_id=6371>.
20. Kenny, D. 2004. *Correlation and Causality.* Storrs. Connecticut.
21. Kirby, D. A. 2006. *Creating Entrepreneurial Universities in the UK: Applying Entrepreneurship Theory to Practice.* Journal of Technology Transfer.
22. Kothari, C. R. 2004. *Research Methodology. Methods and Techniques*. College of Commerce. India.
23. Kyro, K.; Mattila, J. *Towards future university by integrating Entrepreneurial and the 3rd Generation University concepts.* Aalto University, Lappeenranta University of technology. Access via Internet < http://pyk2.aalto.fi/ncsb2012/Kyro.pdf >
24. Leydesdorff, L. 2012. *The Triple Helix of University-Industry-Government Relations.* Amsterdam School of Communication Research.
25. Leydesdorff, L.; Meyer, M. 2006. *Triple Helix indicators of knowledge-based innovation systems.* Amsterdam School of Communications research, University of Sussex.
26. McGill Peterson, P., Mathers Addington, L. 2013. *Mapping Internationalization: Accelerated Activity with Mixed Results.* International Higher Education. The Boston College Center for International Higher Education.
27. Mennel, J.; Mendelson, T.; McElhaney, K.; Marquard, B. 2013. *The roadmap toward effective strategic social partnerships.* Access via the Internet < http://dupress.com/articles/the-roadmap-toward-effective-strategic-social-partnerships/>
28. Oxford University Press. 2007. *PESTEL analysis of the macro-environment.* Access via Internet < http://www.kantakji.com/media/1610/ty3.pdf >
29. Pertuze, J.; Calder, E.; Greitzer, E.; Lucas, W. 2010. *Best Practices for Industry – University Collaboration*. MITSloan Management Review.

30. Ranga, M. 2012. *The Grand Challenges of the Triple Helix.* Triple Helix Research Institute. Stanford University. USA.
31. Ranga, M., Etzkowitz, H. 2013. *Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society*. H-STAR Institute. Stanford University. USA.
32. Science-to-Business Marketing Research Centre. 2011. *The State of European University-Business cooperation.* Access via Internet < http://ec.europa.eu/education/tools/docs/uni-business-cooperation_en.pdf >
33. Shattock, M. 2009. *Entrepreneurialism in Universities and the Knowledge Economy*. Times Higher Education Supplement.
34. Siegel, D. J. 2010. *Why Universities Join Cross-Sector Social Partnerships: Theory and Evidence.* Journal of Higher Education Outreach and Engagement.
35. Teague, P. 2004. *Social Partnership and the Enterprise Lessons.* European Political Economy Review. Vol. 2, No. 1.
36. Tetrevova, L. 2010. *Alternative forms of university – private partnership.* University of Pardubice. Czech Republic.
37. *The Entrepreneurial higher education institution. A review of the concept and its relevance today*. 2013. Access via Internet < https://heinnovate.eu/intranet/tef/downloads/HEInnovate_Analytical%20paper.pdf >.
38. *The Innovative and Entrepreneurial University:Higher Education, Innovation&Entrepreneurship in focus.* 2013. Prepared by U.S. Department of Commerce. Office of Innovation&Entrerepreneurship, Economic Development Administration. Access via Internet < http://www.eda.gov/pdf/The_Innovative_and_Entrepreneurial_University_Report.pdf >.
39. Turner, L. *Social Partnership: An Organizing Concept for Industrial Relations Reform.* Cornell University ILR Scholl.
40. Weiss, G., Loo, Y., Alper, H. 2011. *Building Successful University – Business Partnerships.* American Institute of Chemical Engineers.
41. Wissema, J.G. 2010. *Towards the Third Generation University: Managing the University in Transition.* Access via Internet < http://www.wissema.com/sites/default/files/download/Summary%203GU.pdf >.

ANNEXES

ANNEX A. Questions for specialists.

SURVEY OF UNIVERSITY – BUSINESS COOPERATION

1. Please evaluate (X) from 1 to 10 (1 – does not affect cooperation at all, 10 – does a significant impact on cooperation, NA – not applicable) the main obstacles and barriers which prevent cooperation or bother smooth cooperation:

	1	2	3	4	5	6	7	8	9	10	NA
Lack of interest of cooperation opportunities from one or another side											
Too strong business confidentiality policy											
Different motivation and values between university and business											
Difficulties in finding suitable cooperation partners											
Human resource shortage											
Bureaucratic obstacles											
Financing/shortage											
Other (please specify):											

2. Please evaluate (X) form 1 to 10 (1 – does not help to improve, 10 – help to improve a lot, NA – not applicable) the work areas that cooperation helps to improve at the university:

	1	2	3	4	5	6	7	8	9	10	NA
Develop relations with external partners											
The emergence of new scientific topics											
New research funding											
Attractiveness for new partners and researchers											
Creation of joint working groups between academic staff, business partners, researchers											
Strengthening of academic staff professional mobility											
Better management of university's researchers											

Efficient human resource management											
Improving the employability of graduates											
University's internationalization											
Research and development: spin-offs, etc.											
Boost university's awareness in the country											
Improving the university's attractiveness											
Other (please specify):											

3. Please evaluate (X) the success and benefit level for your university (1 – disadvantageous, 10 – very advantageous, NA – not applicable) of every cooperation type:

	1	2	3	4	5	6	7	8	9	10	NA
Collaboration in R&D											
Mobility of academics											
Mobility of students											
Commercialisation of R&D results											
Curriculum development & delivery											
Lifelong learning											
Entrepreneurship education and training											
Governance (cooperation at management level)											

4. Please evaluate (X) (1 – not developed, 10 – highly developed, NA – not applicable) how developed are the following areas at your university:

	1	2	3	4	5	6	7	8	9	10	
A documentation embracing university – business cooperation											
A strategy for university – business cooperation											
The internal promotion of university – business cooperation											

The external promotion of university – business cooperation											
Funding to support university – business cooperation											
The motivation for academics to encourage university – business cooperation											
Career office within the university											
Incubators for the development of new business											
Information for university – business cooperation											
Entrepreneurship education offered to academics											
Entrepreneurship education offered to students											
Networking meetings for academics and students to meet people from business											
Special focus on the management level and preparation for university – business cooperation											

5. What, in your opinion, are the main criteria and activities that determine successful university's cooperation with business subjects at the local, regional, international level? Please name at least three criteria and activities:

    - Local level
    - Regional level
    - International level

6. What would you suggest to focus on or change in the area of university – business cooperation to make it more engaging and sustainable in the future?

ANNEX B. Correlation analysis.

Table 1. Anova results.

Model		Sum of Squares	Degrees of freedom	Mean Square	F	Sig.
1.	Regression	79717.417	5	15943.483	6.791	.001[a]
	Residual	42259.259	18	2347.737		
	Total	121976.676	23			

Table 2. Coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1.	(Constant)	14.838	25.141		.590	.562
	Research publications	-.038	.062	-.094	-.620	.543
	Co-publications with industrial partners	8.244	5.166	.293	1.596	.128
	Income from private sources	1.041	.322	.555	3.231	.005
	Spin-offs	.109	.920	.018	.119	.907
	International academic staff	.452	.958	.070	.472	.642

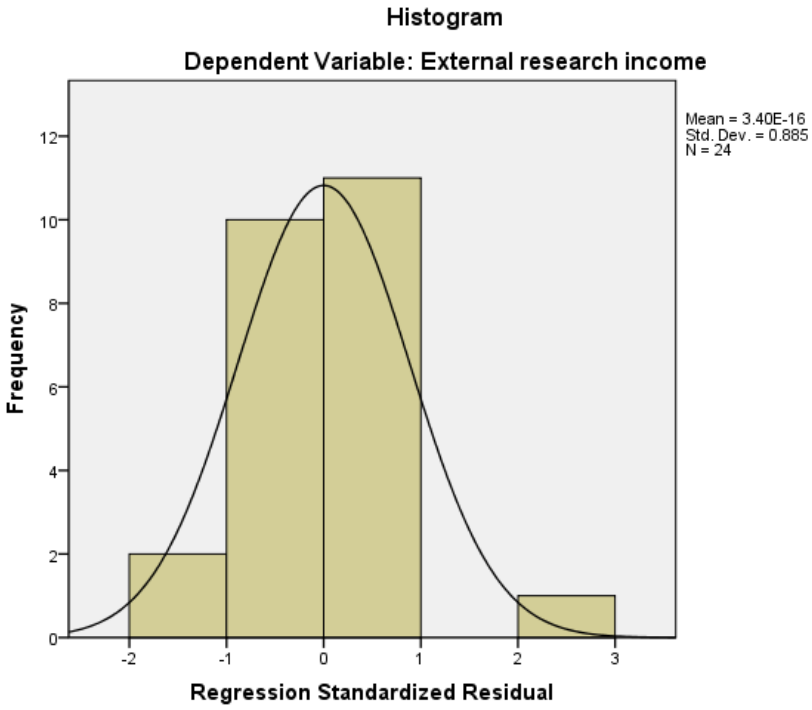

Figure 1. Correlation histogram.