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# Varieties of Professional Domains and Employability Determinants in Higher Education

by

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## Varieties of Professional Domains and Employability Determinants in Higher Education \*

by

Samo Pavlin\*\*

### Abstract.

This paper discusses graduates employability and early career success. In this context it follows multiple goals. *First*, it overviews the key research issues, results and concepts related to HE graduates' transition. While this classification remains on the level of a simplified meta overview, it indicates the need for the contextualisation of graduate models and improvements in the interpretation of results. *Second*, it provides a short overview of the graduate transition models developed in early stages of the DEHEMS project and prior to it. *Third*, it applies theoretical considerations and the model developed in previous sections to a case study analysis of two domains. The data set relates to Slovenian graduates 5 years after they graduated from the HEGESCO international survey. The preliminary analysis leads to general conclusions and recommendations for further analysing and comparing different professional domains. Some concluding observations related to domain varieties are: a) graduates' professional success is a multidimensional concept and requires modifications when applied to analytical models of study domains, b) even when the results of different study domains appear to be similar, their meaning can differ a lot when the interpretation is placed within the specific context of a professional domain, c) the principles and responsibility of the competencies incubation phase from education and the labour market should be interpreted and understood in line with the expected function of the HE institution, e) knowing the prevailing logic behind graduates' jobs, such as managerialism, bureaucracy or professionalism in relation to graduates' career observations might be another factor in determining graduates' career success factors, f) when considering the factors of career success or the quality of jobs, one should be aware there might be an important difference when considering a model on an individual-level or a country-level basis.

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## 1. Introduction

Over the last decade, several European projects such as TUNING Educational Structures in Europe<sup>1</sup>, Careers after Higher Education (CHEERS)<sup>2</sup>, Flexible Professional in the Knowledge Society (REFLEX)<sup>3</sup> or “Higher Education as a Generator of Strategic Competences” (HEGESCO)<sup>4</sup> have sought to compare graduates in the transition from education to the world of work in a country-comparative fashion. One of the key issues in these projects was to learn about the relative impact of higher education programmes on acquired competencies and professional success. Indicators of graduates’ transition and early career success are attracting increasing attention on the policy agenda, accompanied by international surveys such as Education at a Glance (OECD, 2010) or the Programme for the International Assessment of Adult Competencies (OECD, 2011-). The prevailing motive for these attempts is based on the assumption that a high level of acquired competencies related to employability is the most desirable result of the higher education system.

In this way, the empirical findings from graduate surveys related to career success and the evaluation of HE programmes are expected to hold strong potential for demystifying the real contribution HE institutions make to graduates’ professional work either by way of generating new knowledge (i.e. the push principle) or providing skills (i.e. the pull principle adjusting graduates to suit employers’ needs). In light of the current economic crisis, the importance of graduates’ employability is expected to grow. However, developments in academic rankings (e.g. the Shanghai ranking) and (inter)institutional evaluations of study programmes require further clarifications.

One of many relates to the fact that the employability of HE graduates is influenced by phenomena external to higher education. Past graduate career survey projects (see above) all found evidence that the determinants of professional knowledge, along with general competencies, do not have exclusive links to just educational curricula but also to work experience, family backgrounds and general societal trends. Moreover, when looking at the jobs held by higher education graduates the key question is not always *if* they get jobs but *why* (Brennan & Little, 2009: 101): “*it is less about the characteristics of the jobs (wages, status, employment sector) and more about what it is that graduates bring to them – their knowledge, competences and dispositions.*” This issue varies significantly between fields of study and, accordingly, between the models of career success.

Moreover, and as usually stressed by international comparative surveys, the varieties of professional domains, practical knowledge and training not only differ in scope but also in kind (e.g. Abbott, 1988; Burrage & Torstendahl, 1990 ...). The general recommendation on fostering the acquisition of competencies found in international surveys such as the need to obtain relevant work experience during higher education, to make higher education more demanding, forging links with employers, promoting HE programmes in the world of work and establishing the link between HE and the world of work, questioning problem-based learning etc. might lead to contradictory explanations once applied to a particular field of studies.

In this context, the paper has multiple goals. First, it overviews the key research issues, results and concepts related to HE graduates’ transition. While this classification remains on the level of a simplified meta overview, it indicates the need for the contextualisation of graduate models and the interpretation of results. Second, it provides an overview of the graduate transition models developed in early stages of the DEHEMS project and prior to it. Third, it applies theoretical considerations and the model developed in previous sections to a case study analysis of two domains in a single country. The data set relates to Slovenian graduates 5 years after they graduated (the HEGESCO international survey). The preliminary analysis leads to general conclusions and recommendations for analysing and comparing different professional domains.

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<sup>1</sup> <http://tuning.unideusto.org/tuningeu/>

<sup>2</sup> <http://www.uni-kassel.de/incher/cheers/index.gtk>

<sup>3</sup> <http://www.fdewb.unimaas.nl/roa/reflex/>

<sup>4</sup> <http://www.hegesco.org/>

## **2. Theoretical Concepts and Interpretations of Graduates' Transition from Education to the Labour Market**

### *i) Introductory issues*

One of the current policy concerns emerging in HE developments and the implementation of Bologna processes is the employability of graduates. There is a particular stress on the issue of whether Higher Education Systems are expected to produce readymade skills, or if they should be oriented towards preparing graduates for a lifelong career. The assumption in the first option relates to an increase in the practical content of subjects, the applied notion of learning and teaching, and co-operation with employers over theory and classical ex-cathedra learning. Further, in line with several EC policy actions the REFLEX and HEGESCO projects put a large stress on issues such as “what are the key competencies graduates need to function well in the workplace and in society”, “which actors are mainly responsible for competence development”, “how well do graduates' competencies measure up in the world of work”, “what are the most important teaching and training modes for the development of competencies” or “what path should higher education systems follow to foster the development of competencies”.

In this way the HEGESCO report (Allen *et al.*, 2009) generated several premises for how policymakers, HE institutions, employers and graduates could in general terms foster the development of key competencies. Among the general findings and recommendations the report stressed issues on strengthening co-operation between higher education and the world of work, encouraging relevant work experiences, fostering students' motives and talents, making higher education more demanding, alerting employers about underutilised human capital or informing them what they can expect from HE graduates. Several of these issues stressed that fostering graduates' employability relates to processes external to HE. Because of this, the HE system cannot be viewed as an independent black box of skill production. For example, when HE stakeholders were asked how the HEI should change in order to improve graduates' employability most attention was paid to an increase in practical orientation, co-operation with employers, improvements to the financial system, the flexibilisation and internationalisation of curricula, improved research and autonomy; very limited attention was paid to “HE externalities” such as LM regulation or students' social backgrounds. Moreover, HE institutions generally indicated they could perform significantly better if their financial mechanisms were improved, thereby increasing the quality of the curriculum, teachers' training, flexibility and management systems.

In the conceptual design of the DECOWE conference (2009), these HE “externalities” in producing acquired competencies and the related utilisation of human capital were raised by Professor Teichler. Not only did he raise the importance of the issue “what is the relative weight of different kinds of competencies for the successful employment and work of graduates”, or “what is the actual role of HE institutions in fostering professionally relevant competencies” – as compared to socio-biographic background, “credentialism” and reputational ascriptions, initial training and learning. He also highlighted the importance of professional diversity related to occupation, economic sectors, countries according to education levels and field of study. During the conference itself questions were raised about how these diversities should support innovation or primarily respond to employers' needs.

Following Teichler (2009), the DECOWE event opened the issue of what we know about successful measures of (higher) education institutions and what actually is the role played by graduates' employability evidence in the management of higher education institutions, and how do and should (higher) education institutions make use of this information. These questions were considered an important starting point of the DEHEMS project (2011-) that focused on graduates' early career success in selected professional domains. This challenge is put under the framework of multiple theoretical concepts, some of which are discussed below in this section.

## *ii) Functions of Education Institutions (The Role of HE Institutions in Generating Skills)*

The roles and functions of education institutions in society have been surveyed for a long time. While the positive effects on socio-economic outcomes are empirically proven (e.g. see the OECD's publication *Education at a Glance*) when comparing cohorts of secondary- and tertiary-level graduates, higher education's contribution to the development of domain-specific professional expertise is more in question. Stated simply, general results of the HEGESCO project (Allen *et al.*, 2009) question what matters more: students' life during their higher education in general (including who they are) as opposed to what institutions do with students.

The issue of to what extent higher education institutions contribute to the development of professional expertise is explained differently by human capital than credentialist theories. Systems human capital theory says that the education system guarantees a more productive workforce, greater salaries and higher GDP (Schultz, 1961; Becker, 1962). Therefore, the professional benefits the individual acquires in the education system are obvious. Thurow (1975) did not agree. He claimed that productivity depends more on the workplace itself than on the personal characteristics of the individual and their education. Along these lines, signal theory (Spence, 1974) reduces the function of individual education to a signal function reporting the adaptability of the job-seeker to employers: job-seekers with a higher education are presumably more adaptive, more motivated and have greater learning abilities. Certificate theory (Collins, 1979) even took a step further. It advocates that the education system plays a role of regulating access to the labour market.

The functional role of higher education institutions in preparing graduates for work has largely also been discussed in the field of the sociology of professions. A controversial role becomes particularly clear when comparing early functionalist approaches (Durkheim, 1957[1898-00], Parsons, 1954) with criticism of ideologist claims (e.g. Larson, 1977). While earlier claims go in hand with human capital theories and describe higher education institutions as generators of professional expertise, critics have argued that professionally driven educational institutions are a reproductive apparatus that in different ways guarantee monopoly and selection over more privileged work. The implicit base of the analysis is defined by keywords such as professional power or "the project of professionalization" (Macdonald, 1995).

In spite of such controversial views, most scholars today agree that the education system positively impacts the development of individuals' competencies for the labour market. However, the question concerning the scope of this impact remains open, especially when compared with other factors such as social background, gender, ethnic affiliation, external and internal sensitivity to work motivation and other environmental factors. One might even question, for example, if teaching modes have any impact on the successful employment of graduates and their professional expertise. Again, the hidden assumption points a finger at differences between fields of study, and their generic vocational orientation.

## *iii) Employability and professional success*

Much of the discussion so far strongly relates to the issue of graduates' employability. The emerging position of this concept is widespread in national and international science, media and political arenas, particularly in organisations such as the International Labour Organisation, the European Commission, or the Organisation for Economic Cooperation and Development. Even though in this context the concept of employability might be observed as too narrow and limited to graduates' success, which could limit the function of higher education as a direct facilitator of labour market needs, it can hardly be avoided in discussions of competence development.

The concept of employability might be presented as a holistic framework for the integration of different issues in an indicated context related to typologies of competencies, job requirements, labour market segmentation, or determinants of graduates' careers generally and the function of

education systems providing skills for the labour market. In this context, definitions of employability usually relate to paradoxes and causalities of:

- a) employability as individual capabilities versus actual registered employment;
- b) employability in the context of deprived youth in terms of getting a job at all versus the further prosperity of privileged youth (Teichler, 2008: 302);
- c) employability as a skill-supply phenomenon versus a skill-demand phenomenon as measured in skill shortages versus skill surpluses (Allen & Van der Velden, 2005);
- d) employability as individual factors (e.g. skills, qualifications, socio-biographic characteristics) versus personal circumstances (e.g. access to resources, work culture, household circumstances) (McQuaid & Lindsay, 2005: 209).
- f) employability as the justification of the professional orientation of jobs in which predominant characteristics are distinguished among managerial-organisational characteristics of jobs versus professional characteristics.

As indicated, the concept of employability is not new. (McQuaid and Lindsay, 2005: 209), for example, give a historical overview of the concept starting from the beginning of the 20th century. In its evolution the concept has moved from a dichotomic, deterministic and mechanic view towards multidimensional humanistic aspirations. This evolutionary perspective of the concepts compares well with the evolution of human resource management concerns – from F. W. Taylor’s Scientific Management in 1930 towards newer paradigms focusing on individual needs, motives and network organisations (e.g. Choo & Bontis, 2002) – reflecting the problems and realities of increasingly segmented labour markets. Another evolutionary perspective on employability, in line with the one above, is described by Thijssen *et al.* (2008: 168-169). They describe phenomena on the societal, company and individual levels as a framework for the identification of general developments. They claim how the concept has chiefly been used historically (*ibid*):

- a) in the 1970s predominantly for resolving problems with school leavers and underprivileged people with political ambitions to attain full employment and cut public losses;
- b) in the 1980s for restructuring companies with corporates’ ambitions to attain efficient human resource management; and
- c) in the 1990s for individuals as motives for developing successful career opportunities in segmented and ever more flexible labour markets.

Narrowing the issue of employability down to the “probability of getting any job after graduation” has become insufficient for the development of HE management systems and policies. In order to support the premises of developing new educational programmes, improving modes of learning and teaching and alumni development, the demand for a broader span of empirical evidence related to HE is inevitable. Hence, the concept of employability should in the context of higher education always be defined as a multidimensional concept explained on the individual level as one’s capabilities of retaining a self-rewarding job, in employers’ organisations as human resource requirements for fulfilling operational tasks and on the societal level as a system facilitator between (higher) education, the labour market and civil lives.

In this way, the consequences for employability of the utilisation of employability data in HE can in the final context be viewed in a very observable notion related to the quality of jobs.

#### *iv) Professional success*

The term “career” is best defined as a sequence of positions and roles the individual occupies during their lifespan (Super, 1957). For individuals, the meaning of careers and success may differ as they move along their career and life stages (Hall, 2002 cf. Demeter, 2010) and encompass different contexts. The basic observation of careers distinguishes between objective and subjective career

dimensions (Gunz & Peiperl, 2007). Yet it can be argued that the issue between objective and subjective dimensions is in fact methodological: individuals' success can always be viewed as subjective, while objective success has more to do with the issue of aggregation and comparison. Whatever position towards the objectivity of careers one takes, following Mayrhofer *et al.* (2007) professional success is always relational, referring to person-related aspects of a career, his or her social origin, work and societal and cultural dimensions.

Another career approach related to the development of professional expertise was developed by Dreyfus and Dreyfus (1986). They presented a multi-stage model in which the individual progresses through different stages from novice to expert. Markowitsch *et al.* (2008) elaborated the model in relation to areas of professional application, work processes and relations of the individual towards work tasks. The underlying question in this model refers to the centrality of tasks in a particular domain and, more importantly, to the issue of whether specific competencies can be developed in the context of generic ones or vice versa.

In the context described above, employability and professional success are to a certain extent related terms. Following Teichler (2008: 300), when looking at outcomes of teaching and learning in higher education one does not primarily look at graduates' job performance but rather at the overall impact of study – or “professional success” which can be described by: a) the smoothness of the transition from higher education to the labour market; b) income and socioeconomic status; c) a position appropriate to the level of educational attainment; d) desirable employment conditions (independent, demanding and responsible work); and e) a high degree of job satisfaction.

#### *v) Some approaches to defining professional knowledge and domain*

In all or most cases the individual experiences a professional domain as a member of a community of practice. Wenger *et al.* (2002: 4) defined a community of practice as groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in a certain area by interacting on an ongoing basis. The structure of the community of practice is based on three components: the domain as the area of knowledge that brings the community together, the community as the group of people for whom the domain is relevant, and the practice as a body of knowledge, methods, tools and stories that members share and develop together. Use of the community of practice concept for the conceptualisation of professional knowledge and domain emphasises the relational ties between professional expertise and social groups.

In defining and explaining the structure of professional knowledge, one of the key questions is to understand the flow between theoretical and practical knowledge (Pavlin *et al.*, 2010). This comprehends well the notion of professional knowledge. This type of knowledge is in constant interaction between the workplace and universities. In this way one can link the concept of practical occupational knowledge directly to individually acquired competencies, while employers' expectations are labelled required competencies. The definition of required competencies is closer to the definition of Kanfer and Ackerman (2005: 336) which labels work competence as organisationally valued tasks and performances. Formalised occupational knowledge as it appears in various forms of educational programmes is very different from that in the world of work.

The community of practice concept stresses the fact that professional knowledge is generated in a cross-section of professional groups, educational structures and economic sectors. This is reflected in internationally accepted hierarchical categories and tools such as the International Standard Classification of Occupations (ISCO), the International Standard Classification of Education (ISCED), the NACE (Nomenclature Generale des Activites Economiques) sectoral classification and the emerging European Qualification Framework (EQF). On the conceptual level, they present hierarchical analytical categories, while on the factual level they have been criticised as an oversimplification of reality. One of the critical positions towards these tools dwells on the fact that

European countries are not only experiencing large structural changes in terms of the proportions between educational, occupational and sectoral changes, but also changes from within. Hence, some alternative conceptions have been developed (see, for example, Tijdens, 2009) but they have generally not yet been applied in international graduate transition surveys.

However, the three components – professional groups, sector of employment and field of study – determine the level, nature, scope and context of professional knowledge. These concepts determine how particularities of the learning and work of studied individuals are created, and how they should be understood.

**Figure 1.** Contextualisation of Professional Knowledge



Another relevant theoretical framework for conceptualising professional knowledge has its roots in the theory of sociology of professional groups. This perspective places professional knowledge in the perspective of three prevailing principles behind knowledge jurisdiction, namely managerialism, bureaucracy and professionalism (see Abbott, 1988). Professionalism is related to personalised experience of knowledge utilisation, bureaucratisation to legislation and procedures, while managerialism is related to market and financial prospects. Irrespective of the prevailing logic, Friedson (2001) stresses that an important factor giving legitimacy to a particular professional structure involves public perceptions of professional expertise. These concepts have so far been purely applied to graduate transition issues.

#### *vi) Education and Skill Match*

The transition of HE graduates from education to the labour market is characterised by several processes. One of the most appealing is the transfer of knowledge as a result of the information process learning towards the adaptation of these skills for particular work situations. In this way, the early career of HE graduates is often accompanied by the so-called “matching” issue referring to compatibility between individual, education and professional destination. One can define horizontally mismatched as working in a job matching one’s own level but not one’s own field of education. Vertically mismatched is related to the condition of working in a job matching one’s own field but not one’s own level of education. Inherently the matching problem relates to several theoretical concerns such as labour market segmentation, mobility, professionalization (and professionalism) or seniority.

However, educational matching is not the same as skill matching. Green and Zhu (2010: 751) distinguish between formal and real overqualification related to the extent of skill (under)utilisation. The first category reflects formal certified knowledge, while the second level reflects actually required skills. In this way, skill matching is a better predictor of job satisfaction and on-the-job search, when controlling the quality of jobs, than educational mismatches (Allen & van der Velden, 2001).

Verhaest and van der Velden (2010: 2) provide very relevant overview of overeducation, pointing out that a significant proportion of jobs in developed countries is characterised by higher formal education, and more highly acquired skills than the expected ones, as reflected in lower return rates and negative attitudes of workers. These authors (ibid) developed several hypotheses in which they claim that overeducation depends on economic cycles and the structural imbalances they cause, career stages, the quality and selectivity of study programmes, the focus on the production of readymade skills, and labour market protection legislation.

Interestingly, several surveys indicate that formally overeducated workers have slightly higher salaries than workers with a lower and suitable education, and they are less satisfied and exposed to cognitive decline (de Grip *et al.*, 2008). Importantly, skill underutilisation not only has negative economic consequences but also a negative impact on individuals' mental abilities. The authors (ibid) demonstrated that overeducated workers are more vulnerable than undereducated workers with respect to immediate and delayed recall abilities, cognitive flexibility and verbal fluency.

#### *vii) Typologies of HE Study Fields*

The flow of knowledge from (higher) education to the world of work can be viewed as future professionals' preparations for understanding new situations, recognising to which areas of knowledge are relevant to a particular situation, focusing precisely on the knowledge needed for a particular decision or action, and having the capacity to transform previously acquired explicit knowledge to suit the new situation prior to or during performance (Eraut 2006: 49). In this context, the key questions relate to the extent to which curricula should be structured by scientific disciplines or by professional areas, whether HE should focus on the professional domain or also try to shape a student's personality and whether HE should produce readymade skills or prepare students for a lifelong career (Teichler, 1996: 155).

In this way the typologies of HE institutions are predominantly described in relation to the world of work. Hence, the linkage between both domains can be described in this way (Pavlin and Svetlik, 2008):

a) *blank initiation* – referring to situation in which an HE institution produces new certificates for graduates without bothering to consider how the graduates fit into the sector or the established professional profile. In this case, the HE institution can develop or not develop professional standards distinguishing the »emerging« graduates from competitive ones;

b) *transformative initiation* – relates to the adaptation of established educational programmes. Because of the broad scope of competencies the education institution does not wish to or cannot deal very much with the performance of practical or situational forms of particular job settings – however, the linkage with the world of work is more a matter of image. This is in fact related to the »outsourcing« of practice to employer organisations while the development of professional competencies actually starts with their entry to the labour market; or

c) *professional establishments* – representing the most prominent form of co-operation. Due to good protection of the professional area, a very focused form of professional knowledge transfer can occur in such circumstances. This situation is above all characteristic of the most professionalised university profiles in which a profession establishes university learning centres, learning companies or hospitals.

In higher education science and in particular academic fields, numerous other typologies have been developed. Macfarlane (1995), for example, in the case of the business and economics field of study elaborates how classifications address five types of identity issues, namely epistemological, academic, institutional, doctrinal and professional. The better known Biglan model has a three-dimensional classification scheme combining faculty orientation with academic subject areas (Roskens, 1983). On a similar basis, Neumann (2009: 497) differentiates between the hard-pure category (e.g. natural sciences and mathematics), soft-pure (the humanities and the social sciences), hard-applied (e.g. medicine) or soft-applied (e.g. social work). Following Neumann, this typology importantly determines the main premises of the curriculum, assessments and prevailing cognitive purpose. Another known typology has been developed by Kolb (1981). This author classified the natural sciences as abstract and reflective, the social sciences as concrete and reflective, science-based professionals as abstract and active, and social professions as concrete and active. In this way the study domain strongly determines skill and education matching. Garcia and Ibanez (2006), for example, found that 23 percent of surveyed graduates in social studies consider their job could be done by the holders of any university degree, while 39 percent believe their job does not require a university degree at all. On the contrary, more than 89 percent of graduates in technical studies reported that their job depends on their own field of study: only 9 percent reported that their job can be performed by the holder of any university degree and 2 percent that a university degree is not required. A simpler typology can be elaborated in relation to market regulation and the discrepancy between academic and vocational focus. This typology (see Table 1) results in multiple categories that indicate a large, medium or open regulated occupational domain. Each of these three categories can be further distinguished by whether the focus is disciplinary or occupational.

**Table 1.** Types of HE study domains with examples

Orientation of study programme	Only a few (large regulation)	Medium (medium regulation)	Open (regulation)
Discipline Focus	- e.g. Theologian - Univ. workers	- Natural Science	- Social Science - Humanities
Occupation focus	- Medical doctors - Law - Social workers - Teachers	- Engineers - Computer Science	- Journalist

Source: Adjusted according to internal workshop with Schomburg (2008). Ljubljana.

A similar typology has been considered within the DEHEMS project. The selection of professional domain has been mainly determined in study fields to some extent also taking into consideration the distribution of graduates in the REFLEX and HEGESCO data (see Table 2).

**Table 2.** Types of HE study domains

	Vocational Orientation		Academic Orientation
	Unregulated Domain	Regulated Domain	
AREA: Social Sciences and Humanities	<i>Business and Economics</i>	<i>Education and Teaching Studies</i>	<i>Sociology and Political Studies</i>
AREA: Science and Engineering	<i>Engineering (incl. Civil Engineer)</i>	<i>Medicine and Pharmacology</i>	<i>Life Science (incl. Mathematics, Computing)</i>

Source: Schomburg, Janson and Pavlin (2010). DEHEMS project.

Similarly to Table 1, Table 2 builds upon the different scope of labour market and occupational regulations and the distinction between hard and soft sciences.

The model's empirical implications on the professional basis are not new. The Kassel Graduates Survey conducted at the Centre for Research on Higher Education and Work, for example (Teichler & Schomburg, 1993: 179), raised the following questions related to varieties of professional domains:

“

- To what extent do study programmes and study conditions vary among institutions of HE within the same field of study?
- To what extent do employment and the careers of graduates vary according to the institutions of HE and the departments from which they have graduated?
- To what extent can differences in the employment and the careers of graduates be attributed to study programmes and conditions in comparison to other factors?
- Which elements of study provisions and study conditions are most influential regarding study outcomes as well as employment and careers?”

This study incorporated a data analysis, a review of secondary sources, interviews and panel studies related to mechanical engineering, economic/business studies, and social work. The analysed variations within these domains were related to: *typology of graduate employment; graduates' perceptions of the links between study and work, and career and work success related indicators.*

#### *viii) Country clusters*

When comparing graduates' transition from education to labour, two areas of distinction are usually presented: the internal labour market with production organisation logics, and occupational ones with a stress on training and qualification (Robert, 2009: 51): *“The tertiary level of schooling in the countries with occupational labour market involves the features of the vocational-academic duality, while the linear type of higher education is traditionally more characteristic for the countries with internal labour markets.”*

Another country-specific characteristic that sheds light on graduates' transition process involves protection legislation. Countries with weaker labour protection experience faster hiring and firing (Kogan, Unt: 2008: 392). In the HEGESCO project, Robert (2009: 51) developed a typology in which he identified several country clusters – for example – countries with strong labour market legislation and occupational labour markets (e.g. Austria, Germany) and countries with weak labour market legislation and internal markets (e.g. the United Kingdom).

Both characteristics – labour market legislation and internal versus external skill development – impact on the extent to which HE institutions are expected to develop readymade skills. In the United Kingdom, for example, Brennan and Little (2009: 101) found evidence that UK employers require less of their graduates than in most continental countries, and expect a weaker linkage between education and the world of work. These characteristics are important when it comes to understanding and interpreting graduate employability issues.

#### *ix) Short Concluding Summary*

In this section we overviewed the overarching theoretical concepts that have accompanied European graduate transition surveys. Due to space limits, some issues like gender issues, international mobility or the relevance of the Bologna processes were not explicitly included as they require a more policy-driven discourse or represent a very autonomous and discrete scientific discourse.

In the first part, we opened a discussion on the role of HE institutions in generating professional expertise and skill matches. After considering different theoretical inputs we continued the discourse with multiple approaches to defining employability but in particular we stressed the link to career success.

The second set of concepts was placed within a typological discourse. By defining professional knowledge and domain we indicated they can be viewed in terms of the field of study, sector of employment and professional group. We pointed out that in empirical surveys each aspect determines the level, nature, scope and context of professional knowledge generation. A further focus was on typologies of HE study fields. Following several theoretical considerations we classified exemplary HE study domains according to discipline versus occupation focus and LM regulation. The section ended by pointing out country typologies in relation to the transition from education to the labour market.

Based on the indicated theoretical concepts and frameworks, in the next session we intend to give a short overview of models in which influencing factors impact on the individual and his or her career success.

### **3) Designing a model of graduates' career success<sup>5</sup>**

Much of the empirical work related to the transition from education to the world of work has been done by the OECD. In particular, in 2005 and 2006 the OECD's Network B developed a framework for transition systems defined as "the social institutions and processes through which a society provides its members to make the transition from the education system to the employment system" (van der Velden, Wolbers, 2008: 13), focusing on proportions of school-level completion, the level of acquired competencies, the share of school leavers and quality of employment, to mention just a few. In this context, the authors (*ibid*: 12-13) presented models from individual<sup>6</sup> and societal perspectives. The central features of both models relate to skill, job and educational matching. However, the individual perspective model stresses personal, job, organisational characteristics and managerial practices, while the macro model produces a further elaboration of education, transition and employment system traits. Both models emphasise societal and economic conditions.

Another model addressing the transition from higher education to the labour market has been conceptually designed by Svetlik and Pavlin (2009). The model is put in the framework of system theory (Jung, 2007) with the accent on a dynamic equilibrium. The system in question is a labour market system composed of the interrelations between demand and supply, resulting in certain wages and other indicators of success, and reacting to the environmental challenges (Addison & Siebert, 1979).

The set of relations starts with the global competitive pressure which both shapes and is shaped by the environmental challenges faced by individual organisations. Organisations respond to these challenges by way of adaptations in terms of a trade-off between price and quality, re-organisations and innovations. Organisational adaptations lead to changes in the composition and level of required competencies. Different adaptations lead to the raising or lowering of the demand for various competencies at various proficiency levels.

According to the standard curriculum development procedure we can expect that the required competencies will be an important basis for the elaboration and adaptation of teaching programmes/courses, which aim at matching the competencies students acquire to those required by organisations. In addition to the curriculum, HE institutions can respond to demands from the world of work by developing and adapting various modes of teaching and learning. At this point, one

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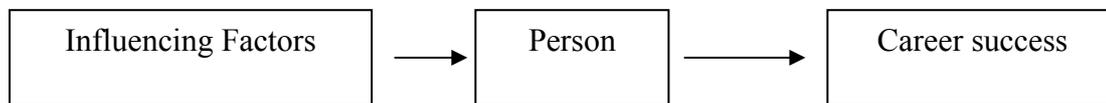
<sup>5</sup> One part of this section was prepared with Prof. Ivan Svetlik in course of the HEGESCO project, and another piloted by developments within the DEHEMS project consortium.

<sup>6</sup> Elaborated by the Report of the Task Force on Transition into Employment of the Canadian Labour Force Development Board (CLFDB, 1994).



Different conceptual developments have been made within the DEHEMS project. The prevailing logic presumes that different influencing factors determine the career success of a particular individual and people generally. Both components of influencing factors and career success are multidimensional. This step of operationalisation on the individual level is presented in Figure 3.

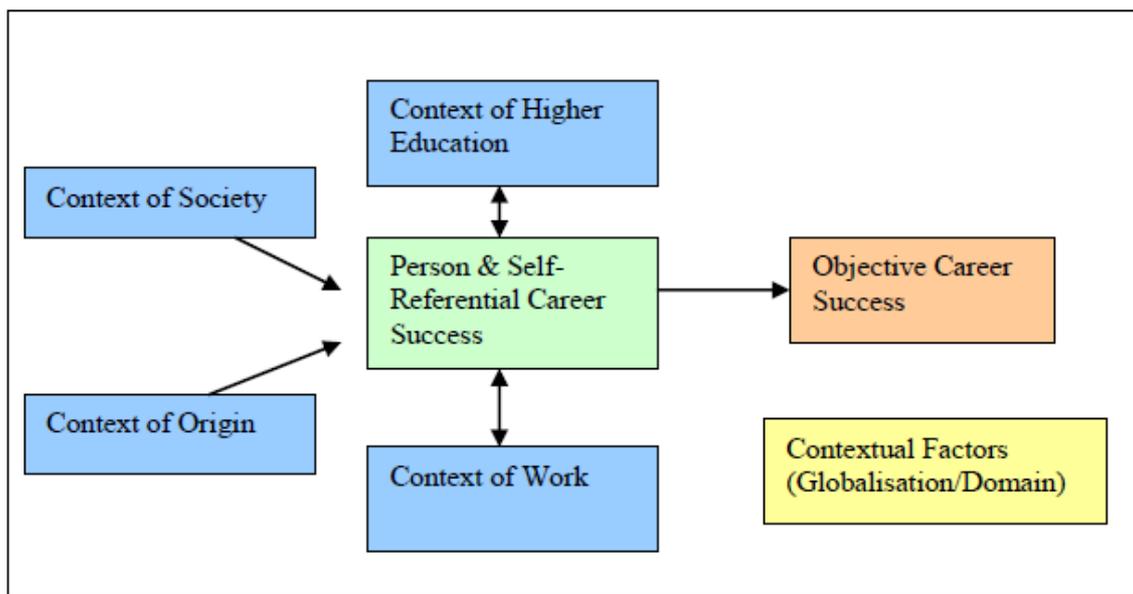
**Figure 3.** First step in the operationalisation



Source: Demeter, Chudzikowski & Pavlin (2010). Conceptual contribution on DEHEMS project. Draft document.

The model distinguishes between individual success facts and related subjective concepts in terms of individual attributions related to career facts. In this way, influencing factors are composed of four main components (Demeter, Chudzikowski & Pavlin, 2010), namely the *context of origin* refers to a person’s cultural, social, class, and educational background as well as their work history (Mayrhofer *et al.*, 2007), the *context of higher education*, referring chiefly to teaching and learning modes and organisational characteristics, the *context of work* encompassing issues such as job characteristics, work-related social relationships, labour markets, new forms of working and organising, and the *context of society and culture* that involves societal and biographical data.

**Figure 4.** Integrative model – general level



Source: Demeter, Chudzikowski, & Pavlin (2010). Conceptual contribution on DEHEMS project. Draft document.

Another model discussed within the DEHEMS project considers three main components, namely: a) contextual factors; b) determinants within the jurisdiction of graduates and HE institutions; and c) components of LM success.

**Table 3.** Conceptual proposal within the DEHEMS project

Contextual factors	Determinants within the jurisdiction of HEI management	Components of LM success	
<i>Country</i>	<i>Learning modes</i>	<b>Status</b>	<b>Job Satisfaction</b>
<i>Professional Domain</i>	<i>Teaching modes</i>	<i>Prestige</i>	
<i>Economic Cycle</i>	<i>Study success</i>	<i>Income</i>	
<i>Local Determinants</i>	<i>Vocational orientation</i>	<i>Contractual arrangement</i>	
<i>Demographical data</i>	<i>Practical orientation</i>	<b>Autonomy</b>	
<i>Social Background</i>	<i>Study related experiences</i>	<b>Content &amp; Acquired competencies</b>	
	<i>Selection</i>	<i>Utilisation of</i>	
	<i>Study workload</i>	<i>Knowledge</i>	
	<i>International scope</i>	<i>Creativity</i>	

Source: Adjusted according to Schomburg, Janson, & Pavlin (2010).

The above table is designed so that it holistically follows the logic of the CHEERS, REFLEX and HEGESCO item structure. In its further development, it incorporates and distinguishes among:

- *the determinants of graduates' LM success* (past education and work experiences, type of HE qualification and study, educational characteristics, modes of teaching and learning, international experiences, study success); and
- the components of LM success (status, skill and qualification matching, autonomy, innovation and satisfaction).

The components of LM success have been further tested by Principle Factor Analysis in the case of the HEGESCO and REFLEX data sets. The results were well in line with the matched conceptual origins mentioned above (Grotkowska & Gajderowicz, 2011). Following the developmental premises within the DEHEMS project, this model is now being tested on a country-specific and domain basis. In the next section, we slightly adjust the model to two professional domains in a single country (Slovenia).

#### **4) Application of the model to HEGESCO data – a domain comparison**

The theoretical considerations and model developed in previous sections have been applied to two domains in the Republic of Slovenia: business and economics, and teaching. In this section, we first provide a basic overview of basic frequencies, we then adjust the template according to domain particularities and in a descriptive manner present the result of the preliminary analyses and, third, by using selected variables we compare studied domains with others.

Based on the findings, in the last section we provide some further recommendations for the data analysis and interpretation of results. In particular, we consider how to compare several domains.

##### *i) Data and elaboration of professional domains*

The data set for Slovenian graduates 5 years after their graduation is acquired from the HEGESCO international survey conducted in 2008. The gross research framework in Slovenia was 6,000 graduates, roughly half of all 12,000 individuals who graduated in 2003. The survey was conducted

by mail with a final response rate of 50 percent, giving a net sample of one-quarter of the total Slovenian graduate population in 2003. To a large extent the net sample reflects the distribution of fields of study. The HEGESCO survey acquired information on more than 400 different items such as modes of teaching and learning, first job and current job particularities, as well as acquired and required competencies.

For the purpose of this paper we sampled graduates from education and teaching (405 graduates) and business and economics (868 graduates), both presenting the largest identifiable (field of study) groups. Following the DEHEMS workshop conducted at the University of Ljubljana in February 2011 and earlier discussions within the DEHEMS project, we identified four factors of graduate success using Principle Factor Analyses:

- a) *Status and earning* (type of contract, experiences job security, gross earnings, experienced earnings and status);
- b) *Skills & qualification matching and development* (vertical education match, horizontal match, utilisation of knowledge and skills, opportunity to learn new skills, career development and professional role);
- c) *Creativity, autonomy and innovation at work*: (experiences, innovation in work organisation, autonomy at work, responsibility at work, and experiencing new challenges); and
- d) *Professional satisfaction*.

Predictors of success were related to sociodemographic characteristics, characteristics of work organisation, modes of teaching and learning, programme/institution characteristics and type of HE qualification/study.

Before conducting the analysis we carefully considered the match between the field of study and of jobs and the consequences this relationship holds for data interpretation. In the case of graduates from the teaching and education domain, 366 were employed and 15 were unemployed. Out of the 366 graduates, 309 (85.4 percent) were working as teachers. In the case of graduates from business and economics (868 in total), 173 were employed as managers, 426 as professionals, 254 were employed as technicians or below technician level (ISCO 3-9) and 15 were unemployed.

#### *ii) Identifying field of study particularities*

The main differential issue in comparing both groups dwells on the fact that graduates of teaching and education predominantly occupy highly regulated occupations (teachers), which is generally not the case of graduates from the business and economics domain. This caused differences in the composition of success factors: in all cases we reduced the number of items for teaching and education graduates as follows: earnings as a component of the *status* career success factor, horizontal and vertical educational match in the case of the *skills and qualification* career success factor and items related to implementation of innovation and methods in the case of the career success factor *creativity and autonomy*: we assumed the meaning would be completely incomparable to graduates from business and economics. Lastly, in the case of professional satisfaction career facts items<sup>7</sup> remained the same for both domains.

Also in the case of career success determinants some variations occurred. While in the case of sociobiographic determinants, international experiences and modes of teaching and learning, programme and institution characteristics and study success all the selected items were fully comparable among both domains, this was not the case with the job context variables. In the case of teachers, stability of demand, competition and sector selection was omitted as this showed incomparable meaning in comparison to business and economics.

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<sup>7</sup> Job satisfaction and choosing a programme once again.

We started the analysis by considering graduates' employability preferences and what are the actual job preferences (mis)matches. The results could lead to further differences in the model's design and data interpretation.

**Table 4.** Percentage of graduates (selected domains) with a strong preference for certain job characteristics, by field of study

	Grad. of teaching & education	Grad. of business and economy
Work autonomy	67.8	46.6
Job security	68.8	48.4
Opportunity to learn new things	64.3	51.9
High earnings	27.0	29.4
New challenges	44.2	40.0
Good career prospects	25.2	34.1
Enough time for leisure activities	55.5	39.3
Social status	24.3	13.5
Chance of doing something useful for society	50.5	19.8
Good chance to combine work with family tasks	55.8	41.7

Own analysis.

**Table 5.** Percentage of graduates (selected domains) experiencing shortage of selected work attitudes, by field of study

	Grad. of teaching & education	Grad. of business and economy
Work autonomy	40.3	36.4
Job security	40.2	33.8
Opportunity to learn new things	42.8	50.0
High earnings	61.3	65.0
New challenges	45.1	53.6
Good career prospects	56.5	60.2
Enough time for leisure activities	57.3	54.5
Social status	46.3	39.4
Chance of doing something useful for society	29.5	45.4
Good chance to combine work with family tasks	53.5	52.9

Own analysis.

Tables 4 and 5 show that teaching and educational graduates significantly more highly appraise work autonomy, job security, the opportunity learn new things, enough time for leisure activities and family, and the chance of doing something useful for society than the business and economics graduates. On the other hand, graduates from business and economics have somewhat higher aspirations regarding higher earnings and good career development.

Faced by the reality of the work situation, the proportion of teaching and education graduates experiencing enough work autonomy, job security, social status and time for family and leisure activities is significantly smaller than the business and economics graduates. Conversely, graduates of business and economics perceive they have fewer chances to learn new things, good earnings, new challenges and the possibility to do something useful for society in comparison to the teaching and education graduates. These results highly impact on the importance of the subjective perceptions of graduates' career success.

The provisional regression analyses<sup>8</sup> indicate that for the business and economics graduates statistically significant determinants for *status success* relate to their organisational characteristics such as stability of demand, quality orientation, competition and linkage to public funding. Of all teaching and learning modes only non-relevant experiences appear to have a negative effect. In addition, a positive effect was noted by those graduates who experienced a high level of academic prestige and a strong work orientation. In the case of the teaching graduates' *status*, success is more influenced by modes of teaching and learning (e.g. problem-based learning, multiple choice exams, study effort) and long-term skill development. In this group, employers' environmental factors were not significant since employment in this domain is highly regulated.

In the case of the second success factor of "*skills & qualification match*", the significant determinants for business and economics graduates involved the quality orientation of the organisation, study effort and readymade skill development. In the case of the teaching graduates, the determinants of skill & qualification match were related to programme characteristics such as personal development and a good basis for starting work.

In the case of the third success factor of "creativity and autonomy at work", the most important factors appeared to be organisational quality orientation, private domain, and readymade skills for business and economics graduates, while influential factors for this factor in the case of the education graduates was striving for the best possible marks (scoring negatively), doing extra work for passing exams and good personal development. Professional satisfaction (the fourth success factor) was most strongly influenced by good teachers and readymade skills in both groups.

When comparing the frequency data from the teaching and business and economics graduates with other domains, some relevant observations in this discussion are the following (see Appendix 1 for detail information):

-The level of study workload and the level of study demands for both groups of graduates seem to be on an average level, or slightly below it. Slovenian students spent on average 23.7 hours studying per week (the EU average is 32.5 hours!), which is almost an exact match for the graduates from education and teaching, whereas the graduates from business and economics spent just 20.9 hours. 40 percent of the graduates from teaching and education reported their study programmes were demanding, which is very similar to the share of business and economics graduates (41 percent). In Slovenia, on average every second graduate finds his or her field of study to be demanding.

- The share of graduates who reported that the academic prestige of their study programmes is high (19 percent in the case of business and economics, and 16 percent in the case of teaching) is lower than the Slovenian average of 26 percent. However, larger differences are reported in the case of

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<sup>8</sup> The first official analytical results produced within the DEHEMS project are expected to be available by June 2011.

vocational focus: 56.7 percent of the graduates from teaching and education reported their programmes had a strong vocational focus, while in the case of the business and economic graduates the share was only 31.6 percent.

- Almost 80 percent of graduates from the teaching and education domain reported they had been involved in practical training, representing the highest percentage from all domains. The figure for business and economics graduates was 45 percent (the Slovenian average is 55.2 percent). Interestingly, the average duration of practical training in the case of the teaching and education graduates is the lowest among all study fields (2.3 months). The average reported duration in Slovenia was 4 months (3.3 months in the case of business and economics graduates).

- In the case of job security the results differed from the expectations. The proportion of graduates from teaching and education with insecure temporary contracts was among the highest in comparison to other domains (25 percent), which also corresponds to the relatively small share of graduates reporting they had high job security. Graduates of business and economics have among all domains the smallest proportion of graduates with temporary contracts (13.6 percent) as well as a high level of reported job security.

- Large differences were also reported in the case of salaries. The average reported gross salary in the case of teaching and education was EUR 1,471 (the lowest among all fields of study), and only one out of five graduates reported they regarded their salary as high. The gross salaries of business and economics graduates were among the highest (EUR 1,838) and so too was the proportion of reported satisfaction.

- Surprisingly, even though low salaries and low job security were reported in the case of teaching and education graduates, these graduates reported the highest level of satisfaction with their work (77.5 percent). The share of satisfied graduates in the case of business and economics (63.6 percent) was despite their relatively high salaries and secure jobs slightly below the country average (64.8 percent).

- This paradox might be partially explained by the large share of teaching and education graduates reporting they utilise knowledge and skills to a large extent (83.6 percent), unlike the case of the business and economics graduates (64.4 percent).

On this basis, in the last section we provide some overall conclusions relevant to designing a cross-domain comparison in relation to the career success of various graduates.

## 5. Conclusions: General Recommendations for Comparing Study Domains

When addressing graduates' career success on a study domain comparative basis several conceptual and methodological improvements are needed. As already indicated in the REFLEX and HEGESCO projects, particular attention should be paid to variations in understanding competencies, particularly when placing them in the relevant domain focus. Following human capital and credentialist theories, a clear conceptual definition should be applied to the functional relations between HE and the world of work.

Following early considerations in the DEHEMS project, designing a domain-based comparison requires a well-elaborated overview of the national HE system, graduates, the impact of Bologna reforms, stratification and selectivity premises, general system orientation of an academic versus a vocational orientation and the role of professional and employers' associations in training at work. These issues should properly be considered on a professional domain or field of study basis, stressing the horizontal and vertical match between education and occupational groups, skill matching, the prevailing inter-domain structure, the role of stakeholders, and legislative and factual particularities of the transition process. The related methodological and content issues addressed in this paper are linked to the following assumptions:

1. Graduates' professional success is a multidimensional concept and requires modifications when applied to analytical models of study domains. In general terms, it seems there is an expected relationship between intrinsic motivators such as an interesting and rewarding job versus job status and earnings what can be observed among and within professional domains.
2. Even when the results of different study domains appear to be similar, their meaning can differ a lot when the interpretation is placed within the specific context of a professional domain. Knowledge utilisation and competencies are clear examples of this.
3. Another important concern involves education and skill match. On a conceptual basis, knowing the occupational and sectoral distribution of a selected study domain might importantly impact definition of observed cohort, and hence results.
4. Related to the previous point, the principles and responsibility of the competencies incubation phase from education and the labour market should be interpreted and understood in line with the expected function of the HE institution in the development of readymade skills, selecting graduates or preparing them for lifelong learning.
5. Knowing the prevailing logic behind graduates' jobs, such as managerialism, bureaucracy or professionalism in relation to graduates' career observations might be another factor in determining graduates' career success factors.
6. When considering the factors of career success or the quality of jobs, one should be aware there might be an important difference when considering a model on an individual-level or a country-level basis. This issue is an important concern in the conceptual understanding of subjective and objective success.

In a nutshell, we may conclude that before designing a domain-specific research model the clear elaboration of key concepts in relation to the studied domain plays a vital, three-layered role: in developing the research problem and hypothesis, in developing the analytical tool, and in interpreting the results.

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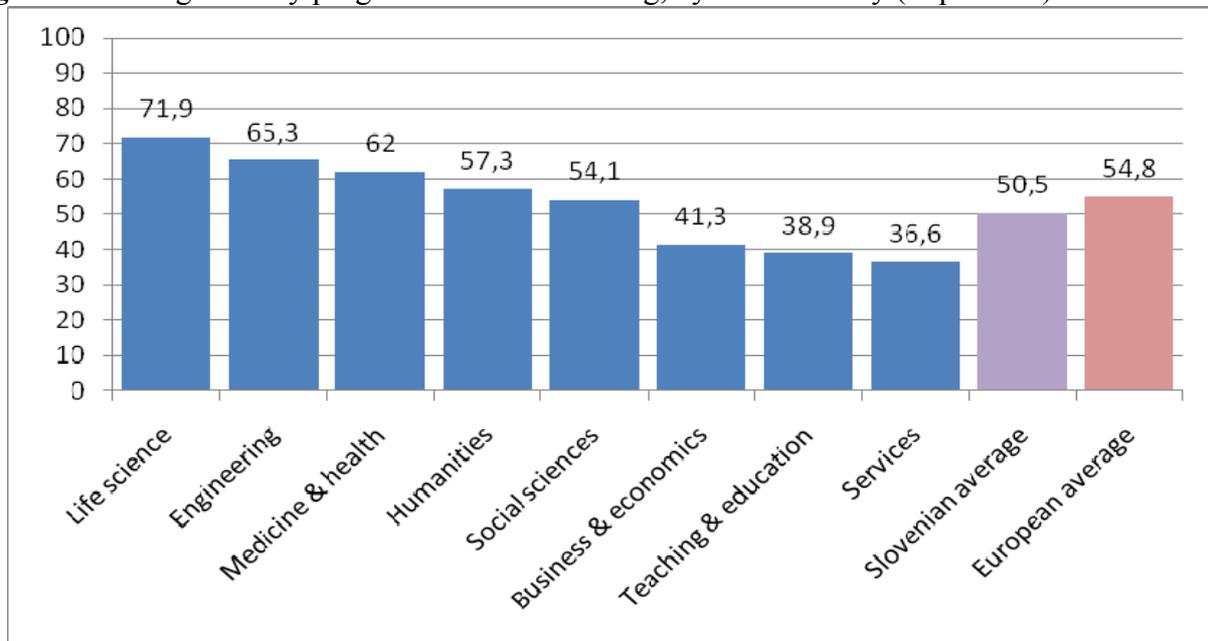
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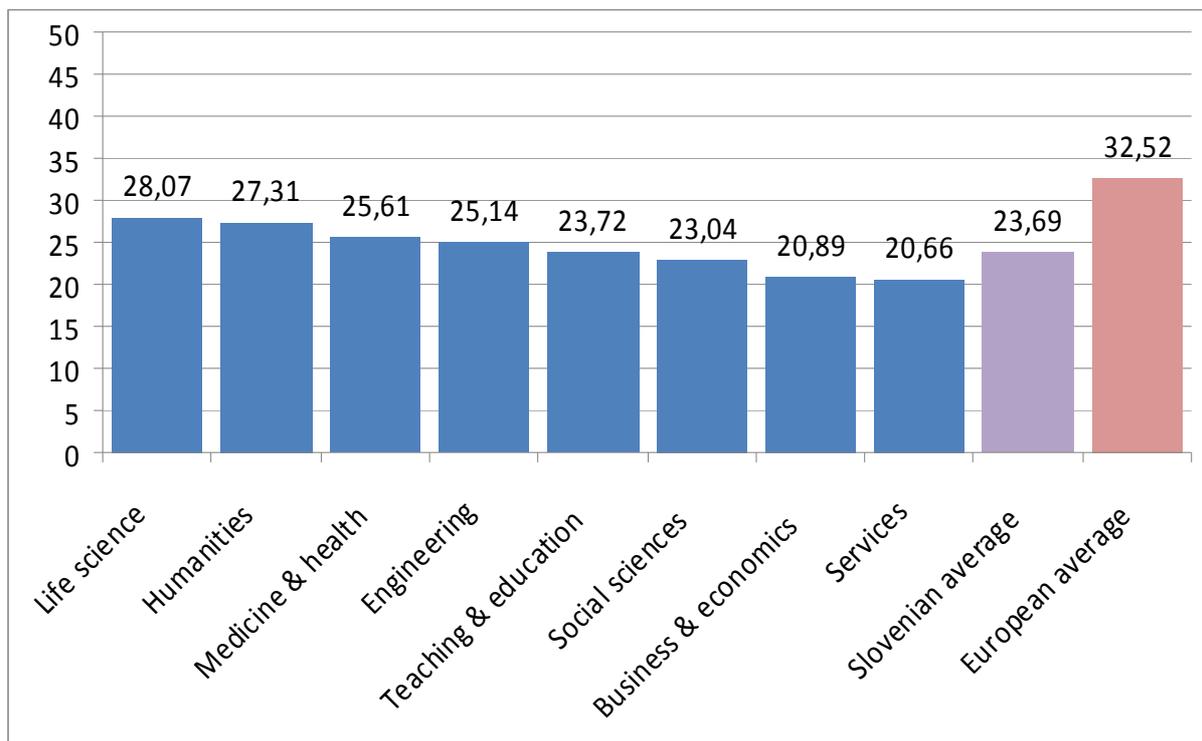
## Appendix 1: Selected Field Of Study Comparison – Slovenian HEGESCO Survey Results, Own Analysis.

**Figure 1:** Rating of study programmes as demanding, by field of study (in per cent)



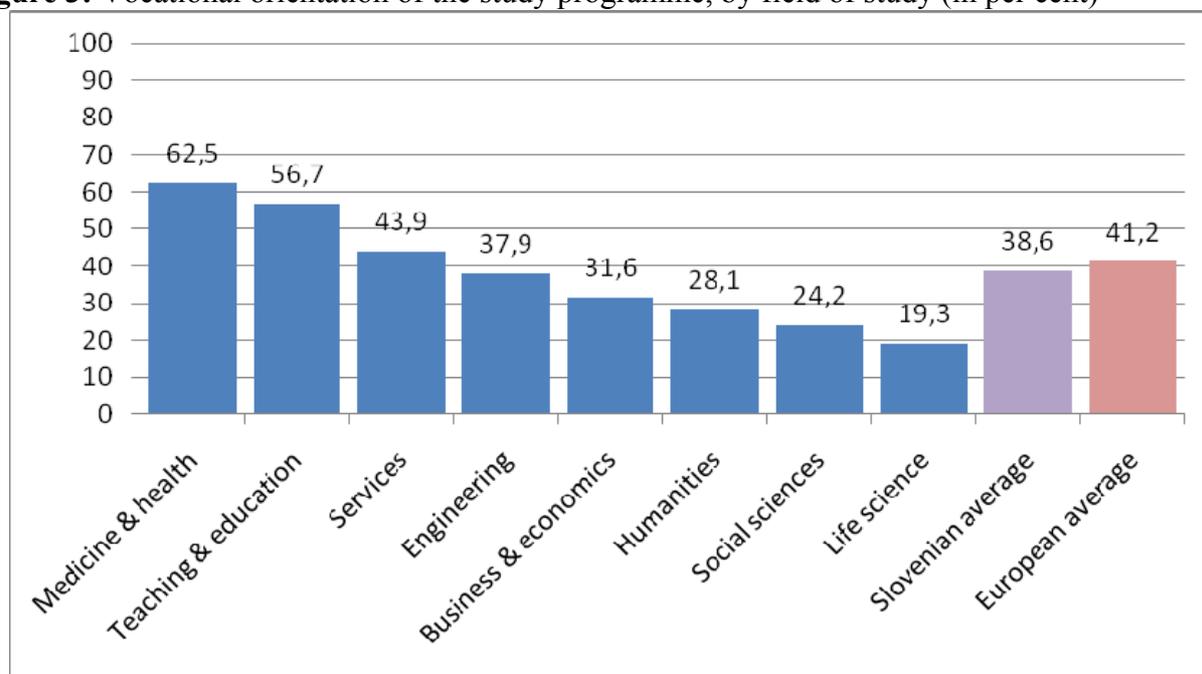
Question A5a (Hegesco), A6a (Reflex): To what extent the programme was generally regarded as demanding? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent".

**Figure 2:** Average studying hours, by field of study (in hours)



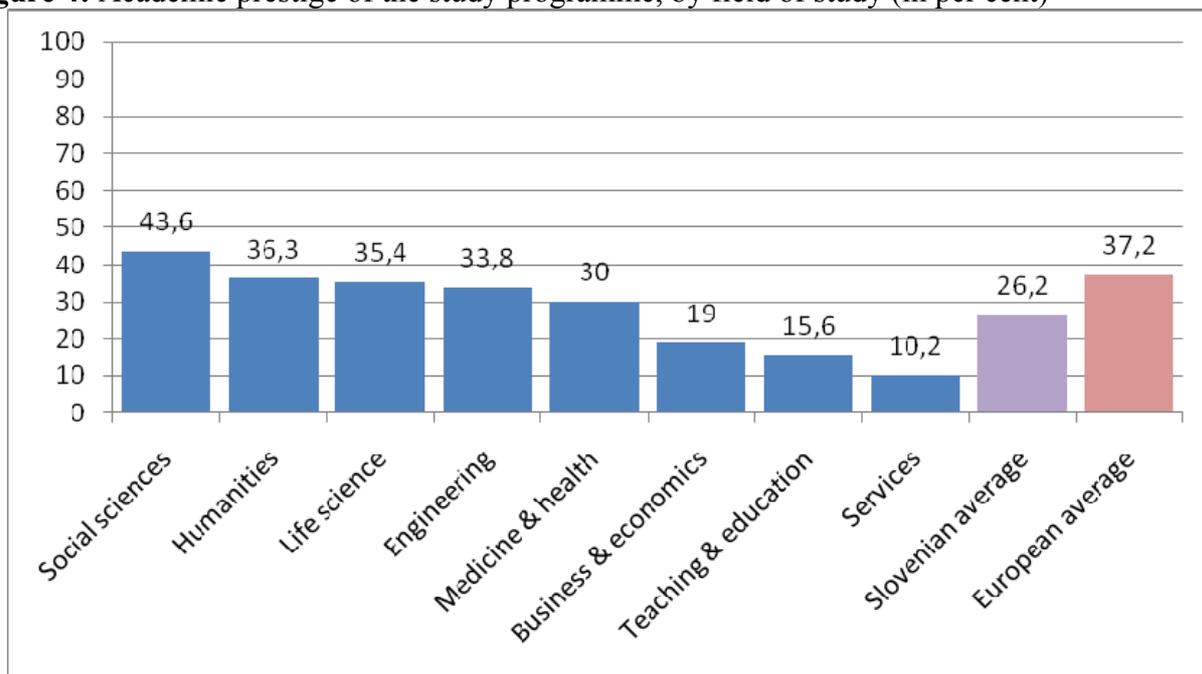
Question A9 (Hegesco), A10 (Reflex): Altogether, approximately how many hours did you spend on your study? Respondents answered with a concrete number of hours; in graph there are average hours.

**Figure 3:** Vocational orientation of the study programme, by field of study (in per cent)



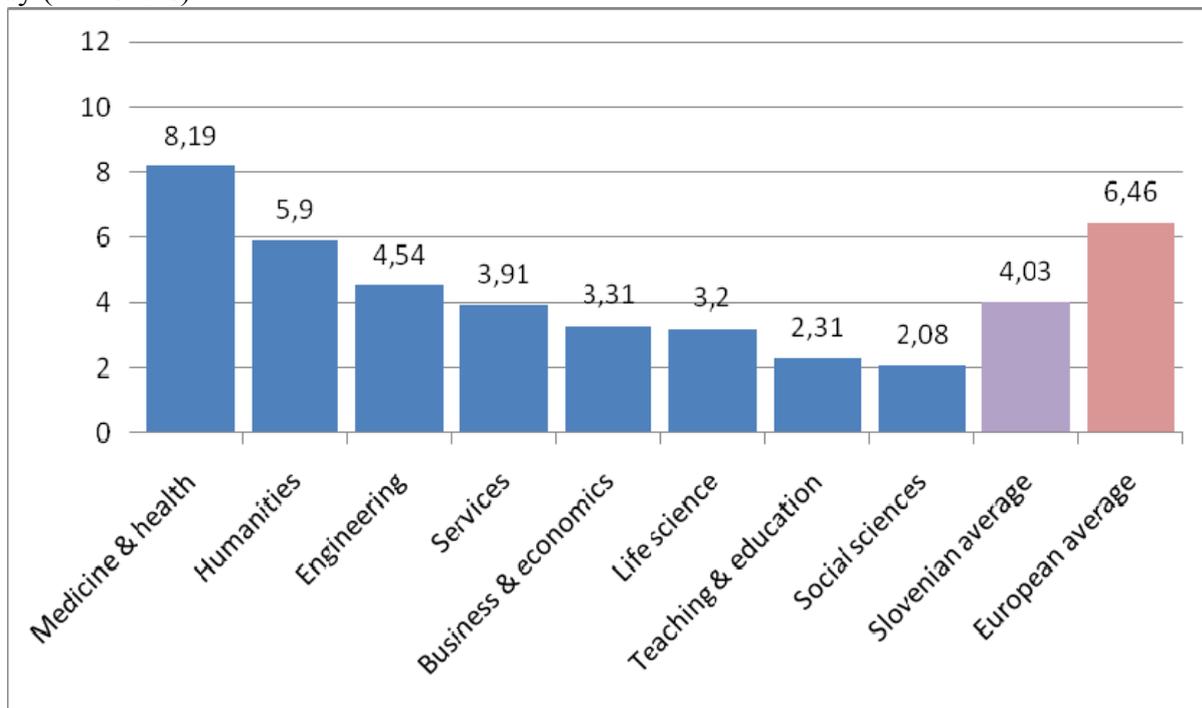
Question A5e (Hegesco), A6e (Reflex): To what extent the programme was vocationally oriented? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent".

**Figure 4:** Academic prestige of the study programme, by field of study (in per cent)



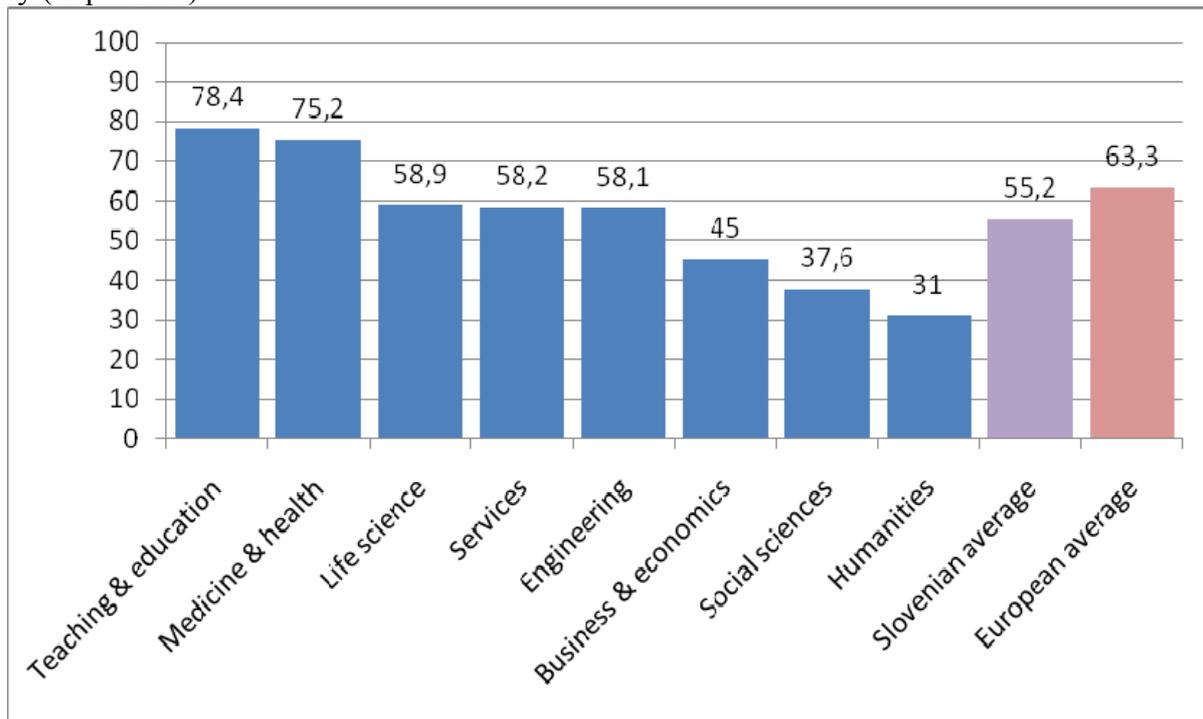
Question A5f (Hegesco), A6f (Reflex): To what extent the study programme was academically prestigious? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent".

**Figure 5:** Time spent at work placement or in internships as a part of study program, by field of study (in months)



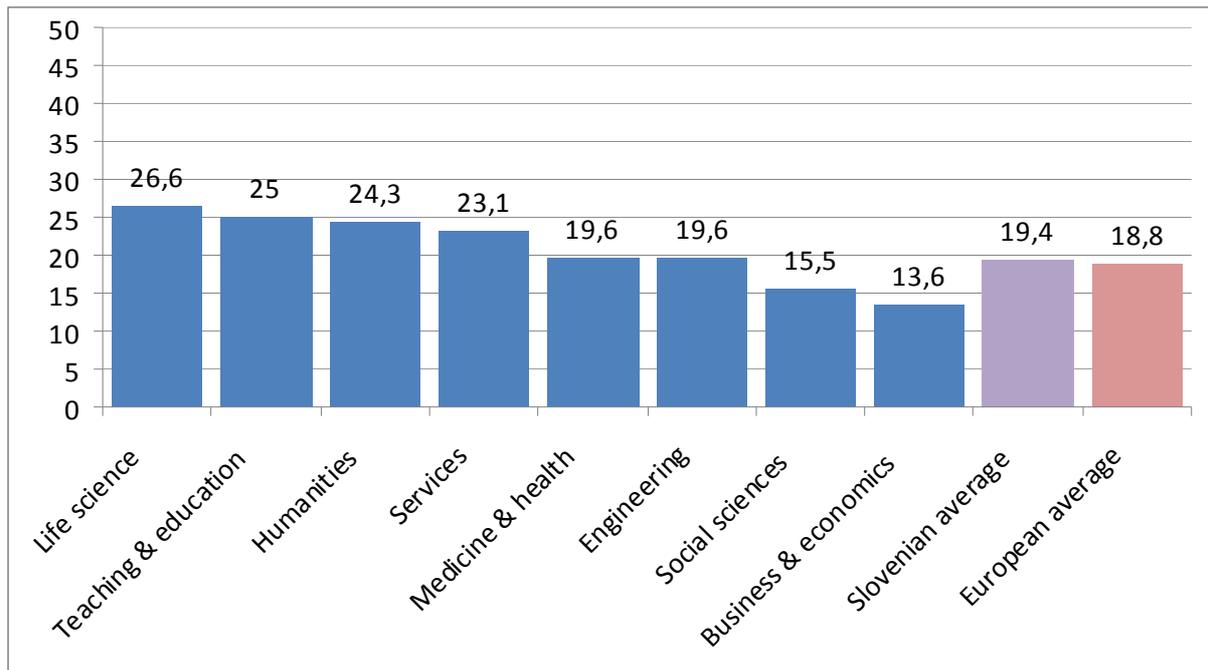
Question A7 (Hegesco), A8 (Reflex): Did you take part in one or more work placements/internships as part of your study programme? Responses »yes« and »no«. If there was a response »yes«, one had to fulfill the following part: »for approximately \_\_ months in total«.

**Figure 6:** Involvement in work placement or in internships as a part of study program, by field of study (in per cent)



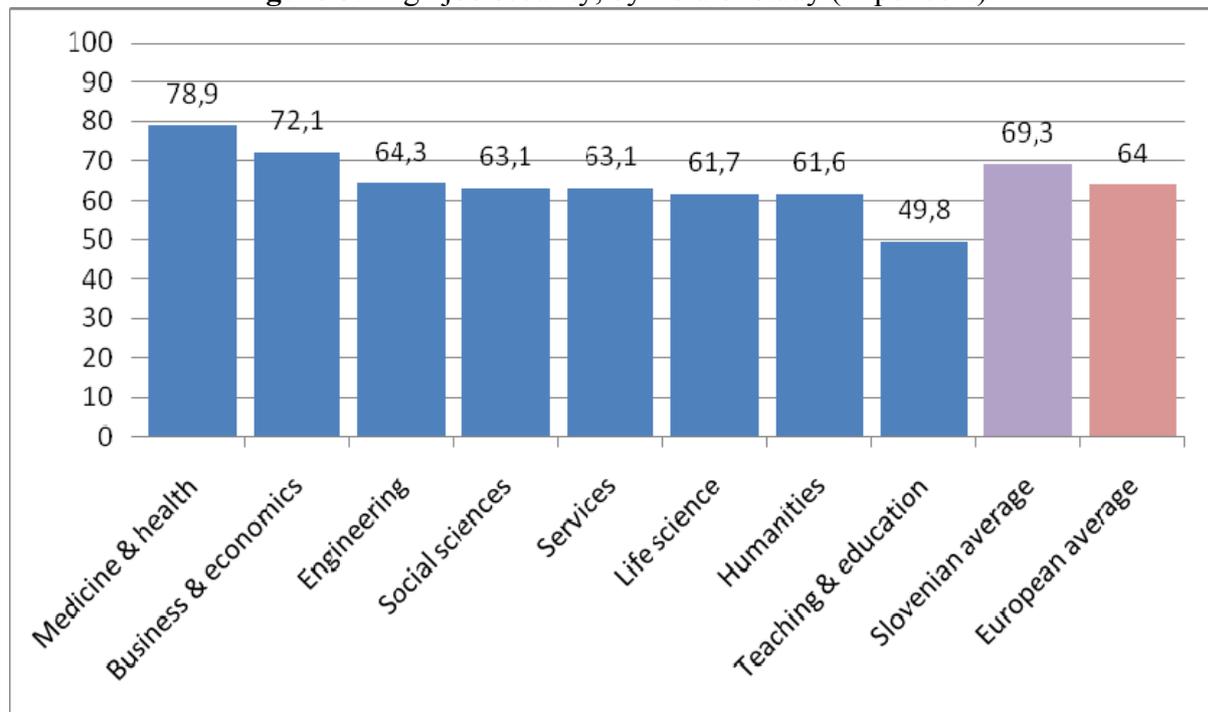
Question A7 (Hegesco), A8 (Reflex): Did you take part in one or more work placements/internships as part of your study programme? Responses »yes«.

**Figure 7:** Fixed-term contract, by field of study (in per cent)



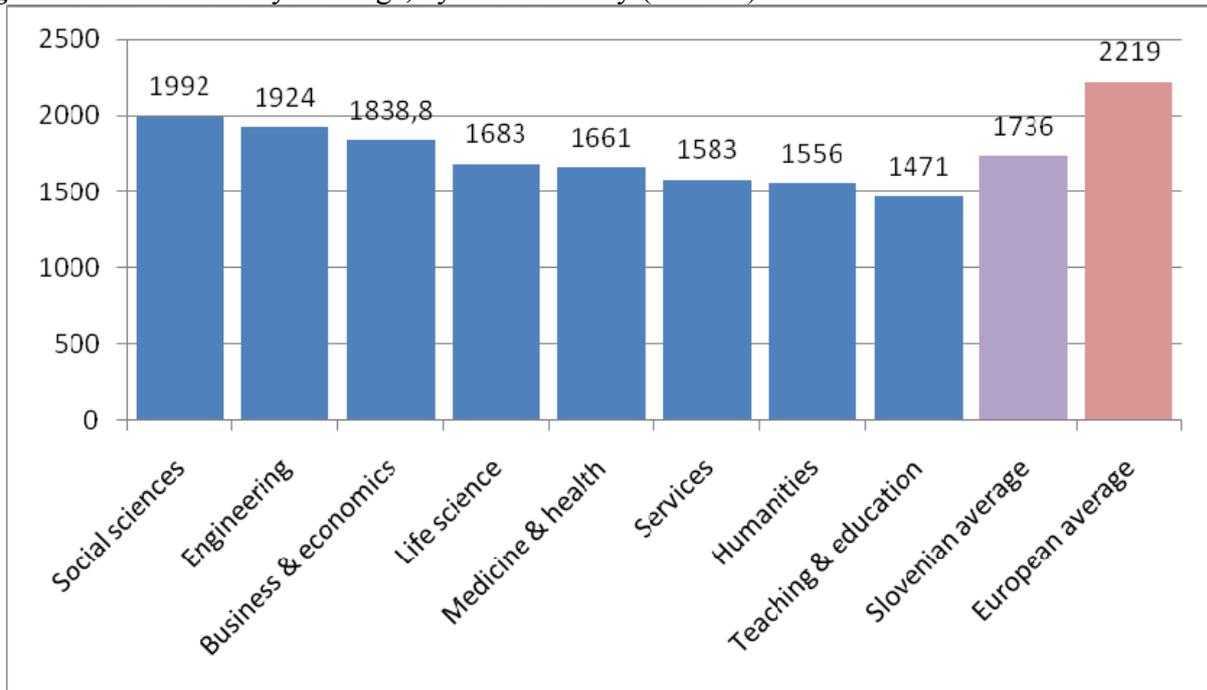
Question F5 (Hegesco), F5 (Reflex): What is your current type of contract? Responses "Fixed-term".

**Figure 8:** High job security, by field of study (in per cent)



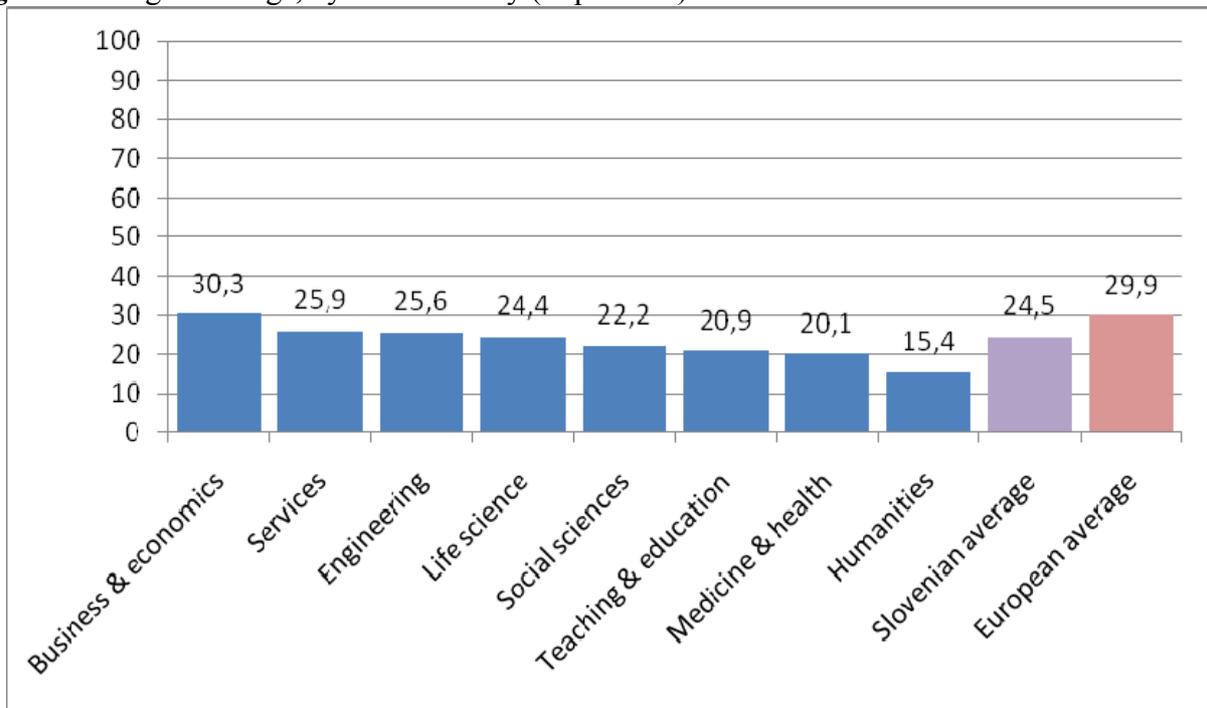
Question J1Bb (Hegesco), J1Bb (Reflex): Please indicate how important the following job characteristics are to you personally (high job security) and to what extent they actually apply to your current work situation? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent" (in section B – apply to current work)

**Figure 9:** Gross monthly earnings, by field of study (in Euro)



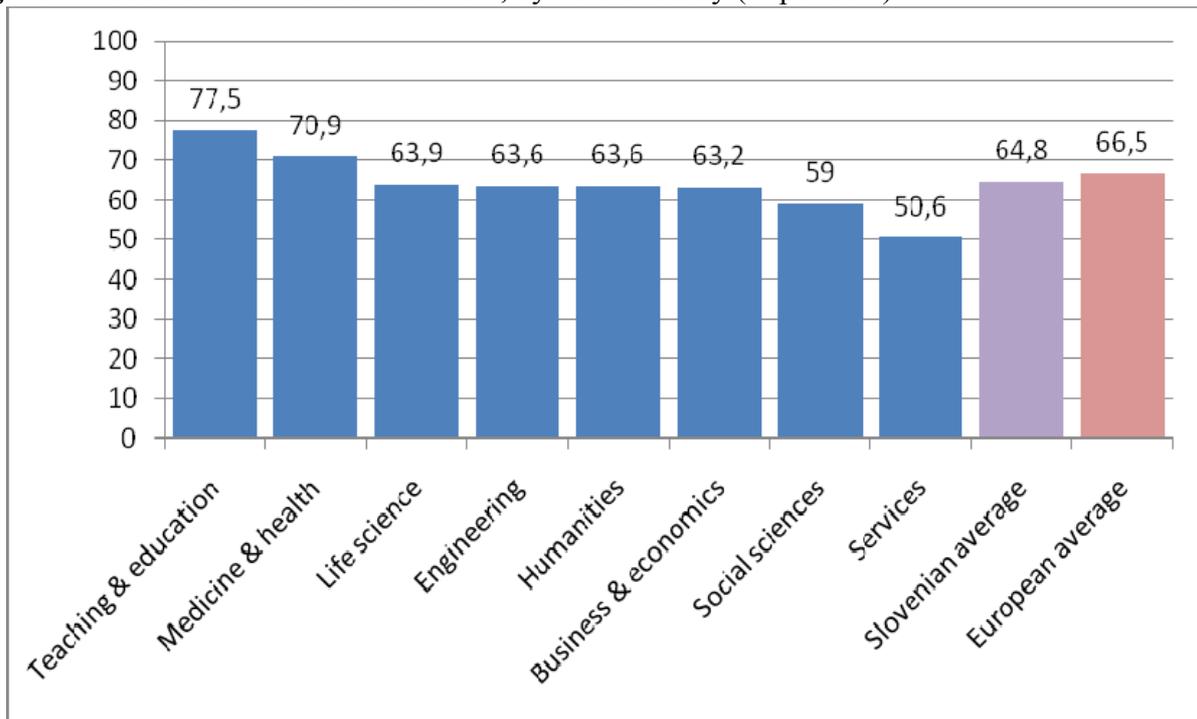
Question F7 (Hegesco and Reflex): What are your gross monthly earnings from contract hours in main employment, from overtime or extras in main employment, from other work? Responses: about \_\_\_ € per month.

**Figure 10:** High earnings, by field of study (in per cent)



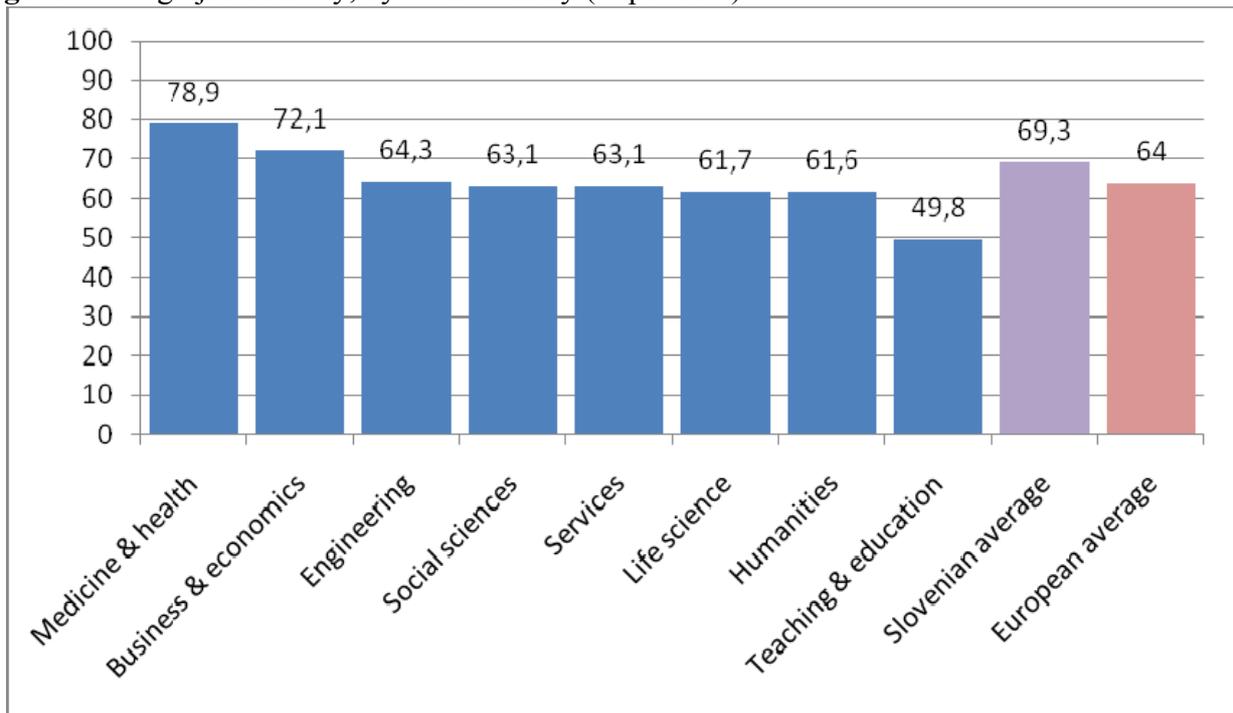
Question J1Bd (Hegesco), J1Bd (Reflex): Please indicate how important the following job characteristics are to you personally (opportunity to learn new things) and to what extent they actually apply to your current work situation? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent" (in section B – apply to current work)

**Figure 11:** Satisfaction with current work, by field of study (in per cent)



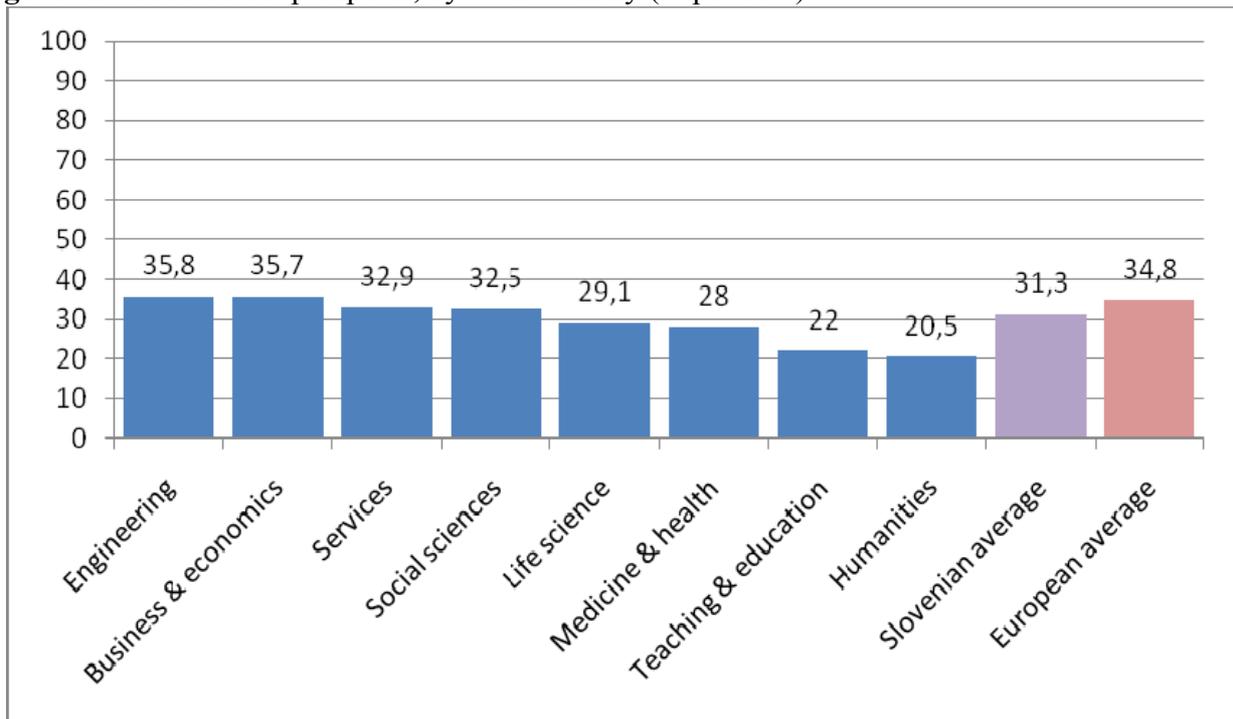
Question F13 (Hegesco), F13 (Reflex): How satisfied are you with your current work? Responses 4 and 5 on a scale of answers from 1 = "Very dissatisfied" to 5 = "Very satisfied".

**Figure 12: High job security, by field of study (in per cent)**



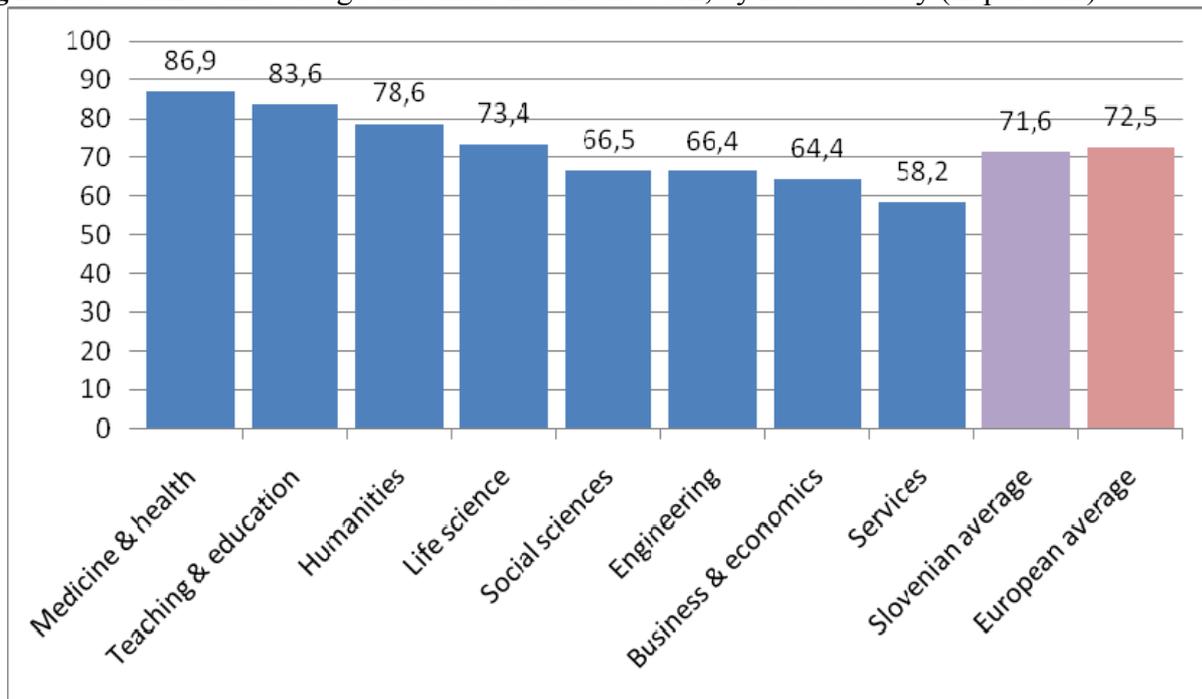
Question J1Bb (Hegesco, J1Bb (Reflex): Please indicate how important the following job characteristics are to you personally (high job security) and to what extent they actually apply to your current work situation? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent" (in section B – apply to current work)

**Figure 13: Good career prospects, by field of study (in per cent)**



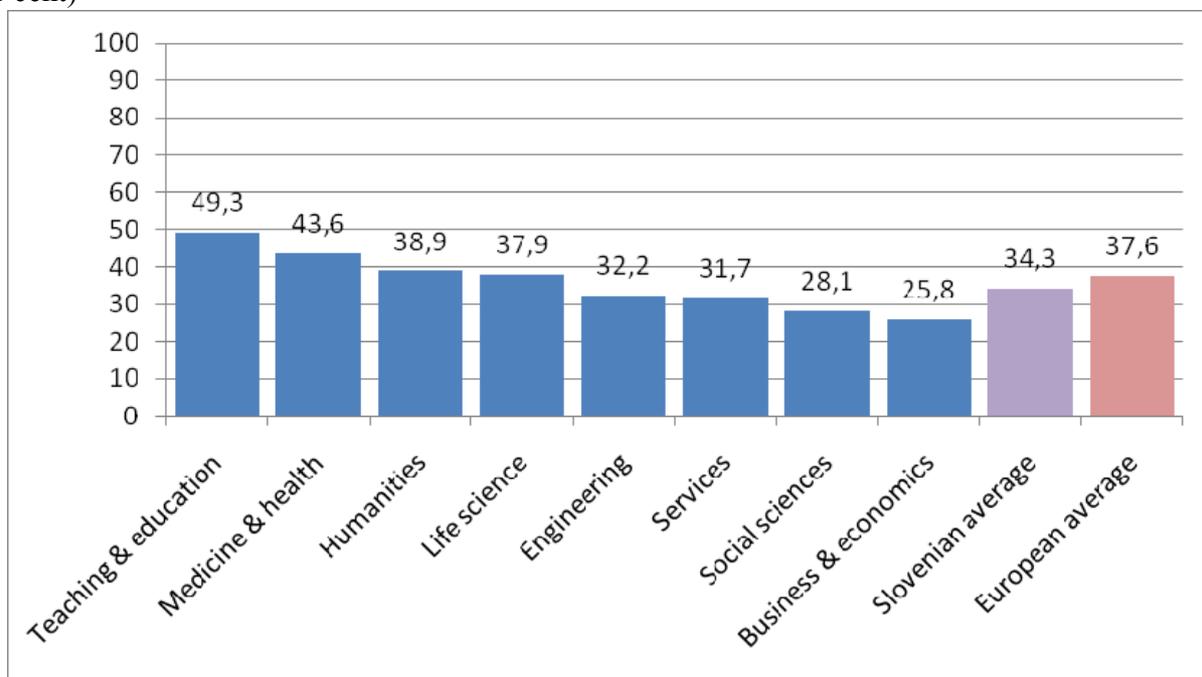
Question J1Bf (Hegesco), J1Bf (Reflex): Please indicate how important the following job characteristics are to you personally (good career prospects) and to what extent they actually apply to your current work situation? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent" (in section B – apply to current work)

**Figure 14:** Utilized knowledge and skills in current work, by field of study (in per cent)



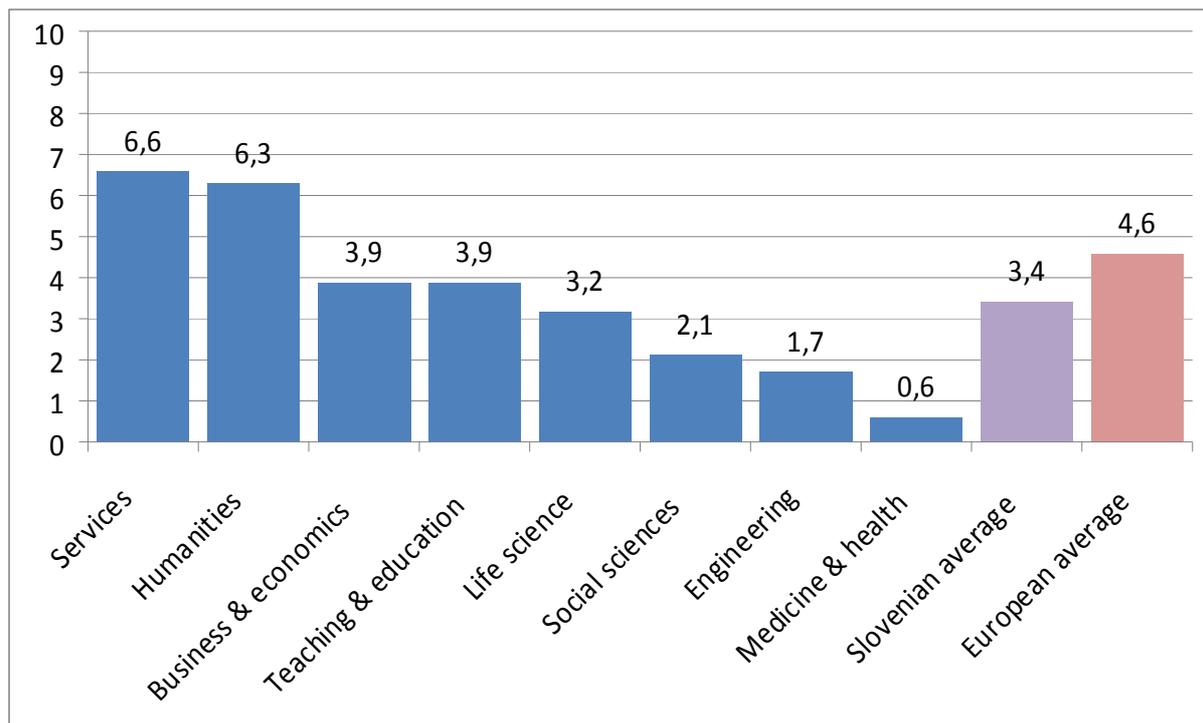
Question F11 (Hegesco), F11 (Reflex): To what extent are your knowledge and skills utilized in your current work? Responses "to a very high level".

**Figure 15:** Familiarity of employers with the content of the study programme, by field of study (in per cent)



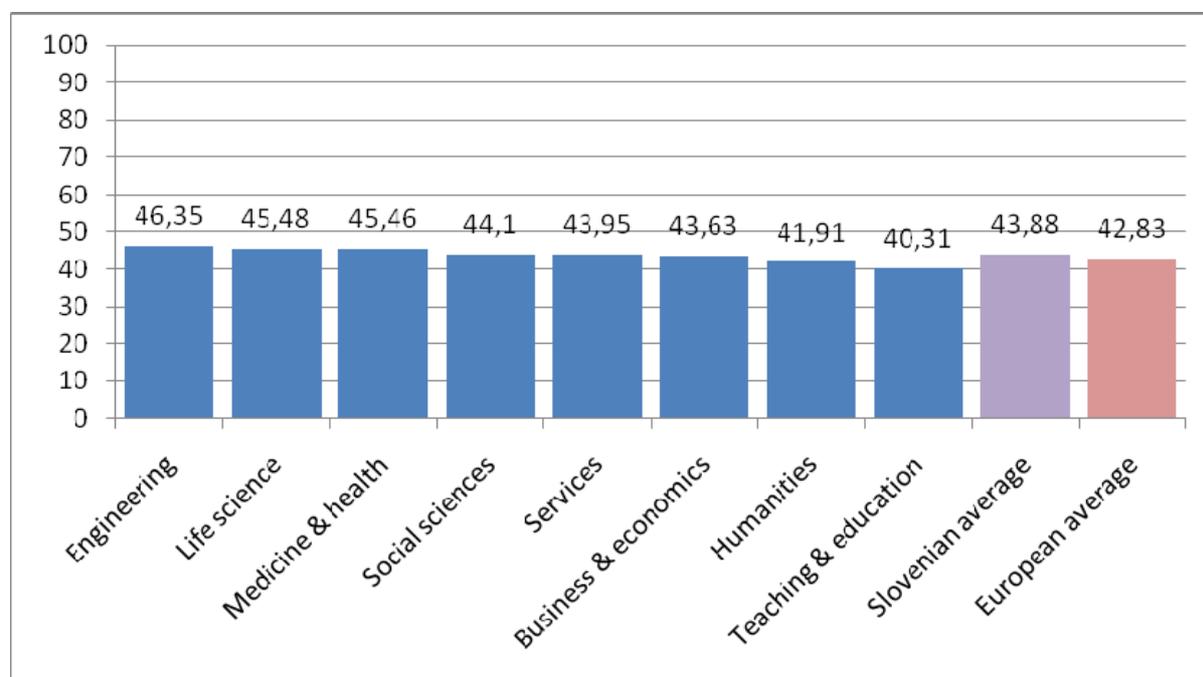
Question A5b (Hegesco), A6b (Reflex): To what extent employers are familiar with the content of the study programme? Responses 4 and 5 on a scale of answers from 1 = "Not at all" to 5 = "To a very high extent".

**Figure 16:** Unemployment, by field of study (in per cent)



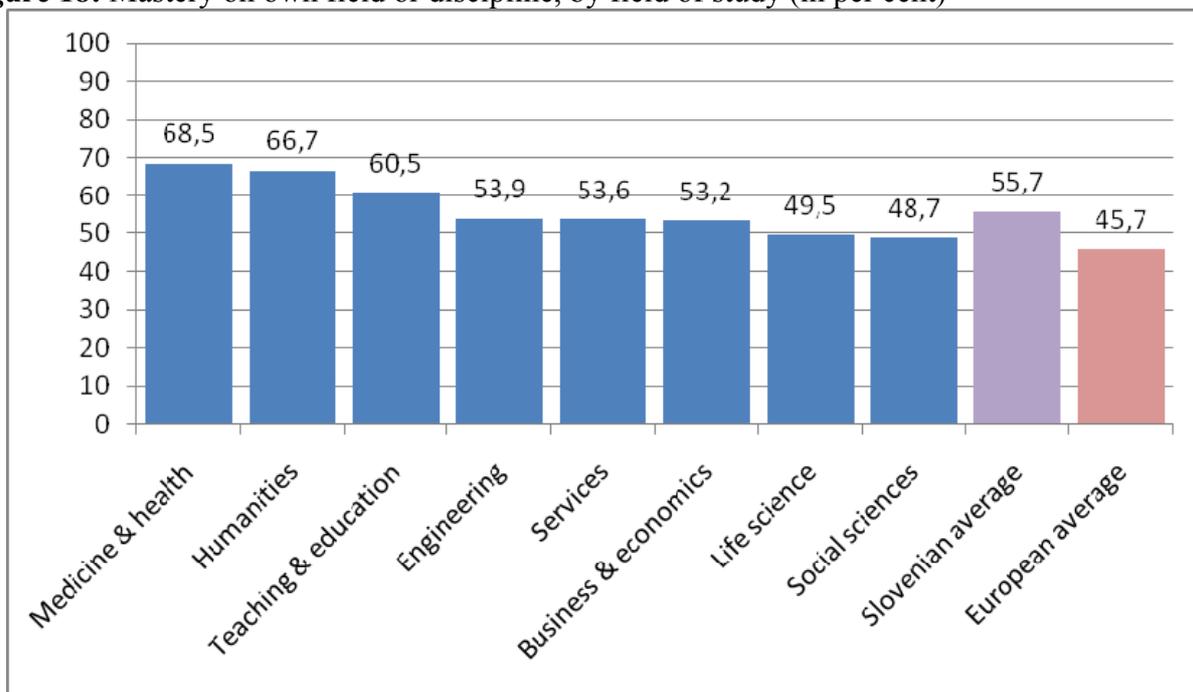
Question E7 (Hegesco), E7 (Reflex): Are you currently in paid employment? Responses "No".

**Figure 17:** Working hours per week performed by graduates in their current work, by field of study (in hours)



Question F6 (Hegesco), Fg(Reflex): What are your average working hours: Regular/contract hours in main employment; Paid or unpaid average overtime in main employment; Average hours in other paid work? Responses » \_\_ hours per week«.

**Figure 18: Mastery on own field or discipline, by field of study (in per cent)**



Question H1a (Hegesco), H1a (Reflex): How do you rate your own level of competence Mastery of your own field or discipline? Responses 6 and 7 on a scale of answers from 1 = "Very low" to 7 = "Very high".