

The Socio-economic Costs of Underemployment

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Abstract. The paper addresses the global challenge of the growing rate of underemployment and its socio-economic costs. The purpose of the paper is to stress the relevance of studying and measuring underemployment in order to reach better performance outcomes both on micro- and macroeconomic level. The research gives insight into the complex concept of underemployment, its causes and effects. The aim of the empirical part of the paper is to make an introductory analysis of the relation between the time-related underemployment and employee engagement data as an input for future more complex research of its correlation. The results of the research indicate that dealing with the hidden costs of underemployment is a path to higher performance on individual, organizational and national level.

Keywords: skill-related underemployment, time-related underemployment, inadequate employment situations, performance outcomes, socio-economic costs, labour underutilisation

1 Introduction

The purpose of the paper is to stress the relevance of studying and measuring underemployment in order to reach better performance outcomes both on micro- and macroeconomic level. The research gives insight into the complex concept of underemployment, its causes and effects. The aim of the empirical part of the paper is to make an introductory analysis of the relation between the time-related underemployment and employee engagement data as an input for future more complex research of its correlation.

The paper is organized in 6 sections. After the introduction part the paper elaborates the problem of underemployment in modern economy. The third section deals with the complexity of the concept of underemployment. Different types of underemployment are presented, and the special focus is given to the measurement challenges and sources of underemployment data. In the empirical part of the paper (section 4) the authors analyze the relation between underemployment and employee engagement. The socio-economic costs of underemployment are thoroughly discussed in section 5. The paper concludes with several policy recommendations and gives input for further research.

The authors' intention was to address two critical research questions: what are the socio-economic costs of underemployment, and how to prove the relation between underemployment and employee engagement as the key driver of growth and productivity.

This is a conceptual paper based on the comparative approach and interpretive analysis of relevant theoretical and empirical work on underemployment, but it also gives insight into the introductory

empirical findings of the relation between time-related underemployment and employee engagement for the EU countries.

The results of the research indicate that dealing with the hidden costs of underemployment is a path to higher performance on individual, organizational and national level.

Underemployment should be recognized as a critical labour and organisational problem and therefore changes are needed both in public labour policy (measures that encourage job creation), education policies (developing skills and programmes that are in line with labour market needs), and internal human resource policies (job design and analysis, recruitment and selection, training and development). There are significant hidden costs of skill- and time-related underemployment in every organization but also on the national level. The companies and governments who acknowledge that and take actions to minimize those costs can expect more engaged employees and higher performance outcomes that will result in higher general productivity level.

2 The Problem of Underemployment in Modern Economy

Underemployment is an indicator of labour underutilization, and it therefore represents an important measure of unused potential which results in productivity and profitability losses and other socio-economic costs on both micro- and macroeconomic level.

The broadly accepted definition of underemployment is the one from ILO: underemployment reflects underutilization of the productive capacity of the employed population in relation to an alternative employment situation in which persons are willing and able to engage (ILO, 1998).

We are witnessing a global challenge of the growing rate of underemployment in today's economy. The question that should be raised here is: how big is the problem of underemployment for modern economy, and how far reach its consequences? This paper is an attempt to give answers to those questions.

The relevance of measuring underemployment is critical for both developing countries as well as more developed countries. In many developing countries, because of high prevalence of self-employment, limited coverage of workers by unemployment insurance/benefits or social security systems and other reasons, the level of measured unemployment is consistently low. This has been explained by the fact that only few people can afford to be unemployed for some period of time, whereas the bulk of the population must engage themselves in some economic activity in order to survive, however little or inadequate that may be (Husmanns, 2007, 17, Sugiyarto et al., 2006, Pratomo, 2015). In such circumstances, the employment situation cannot be fully described by unemployment data alone and the statistics should be supplemented with data on underemployment. In more developed countries the problem of underemployment got in the focus because of the reductions and reorganisations in the demand for labour, such as lack of work opportunities, lack of adequate work opportunities and the rise of various forms of non-standard employment (Greenwood, 1999, Husmanns, 2007).

The trend toward increasing underemployment has many causes. Some of them are connected with demand constraints such as business cycle conditions, slow job growth, unemployment rate, technology and industrial relations (e.g. automation, the export of routine manufacturing jobs), institutional and employer preferences, job characteristics (Simic, 2002). The other are connected with supply constraints such as poor health or unavailability of child care services, changes in the skills composition of the workforce, an increase in the number of college graduates, and the increased expectations of college-educated workers (Pratomo, 2015, O'Toole, 2014, Wilkins and Wooden, 2011). The institutional factors also affect the rate of underemployment: minimum wages, welfare and

taxation systems, employment protection legislation and trade unions (Wilkins and Wooden, 2011, 18). Underemployment occurs also for various personal reasons, including spousal employment and income, family constraints (extended family relationships or responsibilities may limit workers' ability to find jobs that make full use of the value of their education, training, skills and experience), spatial restrictions (geographic immobility due to family constraints or personal preferences), or other personal preferences (van Ham et al., 2001). Another cause of underemployment that is not often considered is labour productivity growth: workers become underemployed because they learn to do their jobs better and faster (Bonnal et al., 2009, 3). In addition, underemployment can be unique to certain areas because certain features of the local labor market intensify selected personal characteristics to induce underemployment (Bonnal et al., 2009, 2). According to Domfe, Osei and Ackah (2013) all forms of underemployment are highly pervasive in the rural areas. Ruiz-Quintanilla and Claes (1994) have confirmed the relationships of underemployment to labour market outlook and socio-economic and socio-political situation of the country. Underemployment rate should be observed also with the income levels and structure of the economy. Higher income countries tend to have less underemployment, most likely because of increasing marginal utility of leisure, that is, individuals prefer to consume more leisure as their wealth increases (Wilkins and Wooden, 2011:23). Pratomo (2015) explains that higher underemployment rate can be expected in developing countries with a high proportion of agricultural workers and significant number of workers living in rural areas.

Family income and wage are important factors in determining the probability of being underemployed. In particular, wage is the most direct variable that is used to compare the costs and benefits of searching for a new job since, through consumption, it indirectly affects the utility of individuals (Bell and Blanchflower, 2013). Other personal and structural characteristics such as gender, educational attainment, or spatial restrictions are discussed in the theoretical and empirical human capital literature to explain costs and benefits of different work positions and underemployment (Bonnal et al., 2009). According to the 16th International Conference of Labour Statisticians (ICLS), underemployment reflects an underutilization of the productive capacity of the employed population, including underutilization which arises from a deficient economic system (Husmanns, 2007, 18).

Broadly speaking, the following three categories of variables emerge as potential determinants of underemployment covering both supply and demand sides (Li et al., 2015, 440):

- demographic and socioeconomic characteristics, such as age, education, family background and housing status (Wilkins, 2006; Jefferson & Preston, 2010; Watt & Hargis, 2010);
- economic environment (Feldman, 1996; Jefferson & Preston, 2010);
- job-related characteristics, such as job type, occupation, career history and job search strategies (Feldman, 1996; McKee-Ryan et al., 2009).

The above explained causes of underemployment indicate that some groups are at particular risks for underemployment. As empirical research results are showing those groups are: youth workers (especially young newly graduates with little or no experience), middle-aged workers with good education and work experience, the older-aged workers with low education and skills, women, ethnic minorities and immigrants, contingent workers.

The causes of underemployment among graduates are complex but can generally be attributed to the shortage of graduate vacancies following the recession. With an influx of graduates entering the jobs market each year, not everyone is able to land a career-related role straight away, or even six months after graduation (Grassby, 2014).

3 The Concept of Underemployment

The problem of how to define and measure underemployment has been discussed by the ICLS on seven occasions (the first time in 1925).¹

The complexity of the concept arises from different perspectives on the condition of underemployment. In a broader definition underemployment is a situation wherein a worker is employed but not in the desired capacity, i.e., in terms of compensation, hours, skill level, and experience. Hence, employment is inadequate in relation to a specified norm or alternative employment (Sugiyarto, 2007, 5).

Previous international standards on underemployment identified two principal forms of underemployment: one reflecting an insufficient volume of work, referred to as visible underemployment; and one reflecting an insufficient use of skills and experience or low productivity as a result of the misallocation of labour resources or a fundamental imbalance as between labour and other factors of production, termed invisible underemployment. Visible underemployment is closely related to time-related underemployment, while invisible underemployment, as it was previously defined, is now one component of inadequate employment situations – skill-related underemployment (ABS, 2013). Analytical studies of invisible underemployment should be directed to the examination and analysis of a wide variety of data, including income and skill levels (disguised underemployment) and productivity measures (potential underemployment).

From a slightly different view, underemployment can take four forms: working less than full time, having higher skills than needed by the job, overstaffing, and having raw labor with few complimentary inputs (ADB 2005). Along this line, Hauser (1974 and 1977) developed a labor utilization framework to better measure underemployment that includes six components: sub-unemployed (discouraged job seekers; in the new ILO definition this category is now included in the unemployed), unemployed, low-hour workers, low-income workers, mismatched workers (mismatch of occupation and education), adequately employed (Sugiyarto, 2007, 5).

Other authors include following types of underemployment (Feldman, 1996, as in Maynard, 2006, 511): more education than required by the job; more skills or experience than required by the job; involuntary employment in a field outside of area of education; involuntary employment in part-time, temporary, or intermittent work; low pay, relative to a previous job or to others with similar educational backgrounds.

The majority of empirical research studies are based on the time-related underemployment concept mostly because of the availability of data. Therefore the results of such studies should be taken as only one part of the problem described. The other, more demanding research studies deal with other types of underemployment such as skill-related underemployment which is far more difficult to measure (there is still no consensus about the most adequate indicators).

In the process of defining the concept one could reach for several sources. We start from the ILO definition which is based on the Resolution concerning the measurement of underemployment and inadequate employment situations, adopted by the 16th International Conference of Labour Statisticians in 1998 (ILO, 1998). The Resolution provides guidelines on two types of underemployment: time related underemployment, which is due to insufficient hours of work, and inadequate employment situations, which are due to other limitations in the labour market which limit

¹ The brief history of this discussions are presented in: <http://www.ilo.org/global/statistics-and-databases/statistics-overview-and-topics/underemployment/history/lang--en/index.htm>.

the capacities and well-being of workers. A person can be simultaneously in these two forms of underemployment.

The classification of the types of underemployment which is presented in the following subsections is based on the ILO conceptualization of underemployment but includes also other valuable insights on the subject.

3.1 Time-Related Underemployment

According to ILO (1998) persons in time-related underemployment are those who during the short reference period (usually 1 week), were willing to work additional hours, were available to work additional hours, and had worked less hours than what is considered as full-time work (a threshold relating to working time excludes those workers who are considered to have reached their full employment level).

The willingness to work additional hours is the main criterion and identifies persons who, independently of the number of hours already worked during the reference week in all their jobs, express a desire or preference to work more hours.

The availability to work additional hours identifies those persons who are ready to work additional hours within a subsequent period, if they had the opportunity to do so, from those that are not available.

The criterion of having worked less than a threshold relating to working time excludes those workers who want to work additional hours and are available to do so, but who already work a “sufficient” number of hours and therefore, for policy reasons, are considered to have reached their full employment level. This criterion is necessary when a country wants to link the time-related underemployed population with employment policies, to determine who are those who worked less hours than what is considered as full-time work.

3.2 Inadequate Employment Situations

Persons are in an inadequate employment situations when, during the reference period, they wanted to change their current work situation for reasons that limit their capacities and well-being and were available to do so. A worker may want to replace on their current paid or self-employment jobs for another, transform their activities and/or the way in which they are carried out; or the two options simultaneously (ILO, 1998).

The willingness to change their current work situation distinguishes persons whose full employment level from the point of view of productivity and work quality, as assessed by workers themselves, is above their current level of productivity, and who want to change their current work situation.

The most common reasons of inadequate employment situation, on the basis of the workers' assessment of their own work situation regarding the potential that they have to increase their productivity and quality of work, could be categorized as following: the inadequate or insufficient use of workers' occupational skills, the inadequate income in the current job(s), and excessive hours of work.

Other reasons identified by the international definition of inadequate employment situations include, for example: inadequate use and mismatch of occupational skills; inadequate income in current job(s); excessive hours of work; precarious job(s); inadequate tools, equipment or training for the assigned tasks; inadequate social services; travel to work difficulties; variable, arbitrary or inconvenient work schedules; recurring work stoppages because of delivery failures of raw material or energy; prolonged

non-payment of wages; long overdue payments from customers. It should be noted that these reasons will not be mutually exclusive nor exhaustive of inadequate employment situations (ILO, 1998).

3.2.1 Three Most Frequently Forms of Inadequate Employment Situations and Measurement Issues

The theoretical discussion and the workers' responses on the reasons of inadequate employment situations are the basis for identification of several different types of inadequate employment situation. Each of the particular type asks for specific indicators, some of which are still to be developed and debated.

The first three types named after the most common reasons of inadequate employment situations are following (Greenwood, 1999, 9):

(a) *skill-related inadequate employment*, characterized by inadequate utilization and mismatch of occupational skills, thus signifying poor utilization of human capital. Persons in this form of inadequate employment may be understood to include all persons in employment who during the reference period wanted or sought to change their current work situation in order to use their current occupational skills more fully, and were available to do so. This form of inadequate employment can be interpreted as a job with tasks that require greater complexity and diversity than the current job;

(b) *income-related inadequate employment*, resulting from low levels of organization of work or productivity, insufficient tools and equipment and training or deficient infrastructure. Persons in this form of inadequate employment may be understood to include all persons in employment who during the reference period wanted or sought to change their current work situation in order to increase income limited by factors such as those mentioned above, and were available to do so. Countries may wish to apply a threshold, chosen according to national circumstances, above which persons do not qualify for inclusion;

(c) *inadequate employment related to excessive hours („overemployment“)*, may be understood to refer to a situation where persons in employment wanted or sought to work less hours than they did during the reference period, either in the same job or in another job, with a corresponding reduction of income. Countries may wish to apply a threshold of hours below which persons do not qualify for inclusion.

For persons in the various inadequate employment situations separately identified according to national circumstances, countries may want to derive analytical indicators such as the following: (a) persons in each chosen type of inadequate employment situation, expressed as a percentage of the employed; (b) persons simultaneously in two or more inadequate employment situations, expressed as a percentage of the employed.

The analysis of the various inadequate employment situations data may include their classification by significant demographic, social and economic characteristics, as well as appropriate cross-classifications with due regard to the need for confidentiality and statistical significance.

Indicators of inadequate employment situations that affect the capacities and well-being of workers and which may differ according to national conditions, relate to aspects of the work situation such as use of occupational skills, degree and type of economic risks, schedule of and travel to work, occupational safety and health and general working conditions. To a large extent, the statistical concepts to describe such situations have not been sufficiently developed (ILO, 1998).

The problem of choosing the appropriate indicators is discussed in the following paragraphs on the example of the challenge of measuring skill-related underemployment.

Skill-related underemployment, as mentioned earlier, is most often the reflection of mismatch of occupational skills, but also even a highly skilled, well-paid employee can be underemployed if his abilities and knowledge aren't consistently put to good use. There are probably as many reasons why this might occur as there are organizations, but here are a few common ones (Spraggins, 2013): employees have gained education and skills faster than the organization can recognize it or capitalize on it; the organization's processes and procedures prevent progress that would necessitate employees using more advanced skills; managers are not providing opportunities for employees to use their abilities.

Skills mismatch is an encompassing term which refers to various types of imbalances between skills offered and skills needed in the world of work. Skills and competencies per se are not measured by the regular statistical programmes of most countries. That is why skill proxies are used, such as qualifications and years of education at the supply side, and occupations at the demand side. The use of proxies such as overeducation data has several disadvantages. Measures of overeducation ignore skills accumulated through training and on-the-job experience. These measures deal only with the levels of education and do not consider the type of qualification (obtained and required). Also, the employers often use educational qualifications as a mechanism for screening potential workers, meaning formal job entry requirements may greatly exceed that required to perform work successfully (Maynard and Feldman, ed., 2011, 26). Skills mismatches are also found to be better predictors of job satisfaction than are educational mismatches (Allen and van der Vellen, 2001, Whiteley, 2015, 8). These findings suggest that there is merit in separately examining skill and education-related underemployment.

Mismatch at the individual level can manifest itself as undereducation or overeducation. Although education is often used as a proxy for skills, the two terms have a different meaning. A person qualified as a university professor working as a receptionist is clearly overeducated, but may nevertheless lack the communication skills that are necessary in this job and may therefore also be underskilled. However, contrary to education data, cross-country datasets on skills are rare, and usually limited to numeracy and literacy. In the absence of skills data, discussions of skills mismatch are often informed by surveys of employers' perception on skills mismatch.

Frequently discussed types of skills mismatch are: skill shortage (surplus), skill gap, vertical mismatch, horizontal mismatch, overeducation (undereducation), overqualification (underqualification), and skills obsolescence (ILO, 2013).

Many researchers who studied the problem of skill-related underemployment have based their research on the measure that reflects the mismatch in qualification (not in skills). That is the direct consequence of nonavailability of national statistics data. Therefore when they talk and write about the skill-related underemployment they are actually depicting the problem of overeducation which is far more easier to capture but also not highly correlated with the skill-related underemployment as some authors have clearly articulated (McGuinness and Wooden, 2009, as in Maynard and Feldman, ed., 2011).

Four measures of skill-related underemployment are most common: (1) comparison of a worker's educational attainment to the educational requirements for the occupation (as specified by job analysts), (2) comparison of a worker's educational attainment with the education level that the worker believes to be necessary for either job entry or satisfactory job performance, (3) the respondent's perception of mismatch, and (4) deviation from the average level of educational attainment within a narrowly defined occupation.

There is considerable debate as to which measurement approach is preferable. Some equate external assessment of job requirements with objectivity and hence view them as superior. On the other hand,

so-called subjective measures relying on worker's perceptions may incorporate the most accurate information about the job situation as well as the worker's skills and credentials.²

Several authors have broadened the list of relevant types of underemployment connected with other reasons of inadequate employment situations. Those insights are presented in the following subsections.

3.2.2 Other Forms of Inadequate Employment Situations

Other types of inadequate employment situations that should also be considered are: status-related underemployment, labour hoarding and other forms of effort-related underemployment and subjective underemployment.

Status-related underemployment is based on the premise that many highly-skilled individuals are concerned about the loss of occupational status they suffer as a result of taking on jobs below their qualification level (Burris, 1983, Friedland and Price, 2003, as in Saunders, 2015, 20). It is the measure of mismatch between the occupational status provided by the job and the occupational status individuals would expect on the basis of their background. Status-related underemployment is often perceived among highly-skilled immigrants.

Labour hoarding occurs when a firm does not utilize all of the labour that it pays for, and has long been thought to help explain the tendency for the productivity of working hours to vary with the business cycle (e.g. Okun, 1963, Sollow, 1968; as in Maynard and Feldman, ed., 2011). Unlike other forms of underemployment, it is the employer that bears the cost rather than the employee. However, in many situations labour hoarding will be associated with a decline in skills utilization (as a result of an insufficiency in the quantity of challenging and interesting work) and in these instances there may be considerable overlap between measures of skill-related underemployment and labour hoarding. Labour hoarding is also distinctive from other forms of underemployment in that it is not necessarily inefficient. Given the presence of fixed and quasi-fixed labour costs, such as those associated with hiring and training, it may be efficient in the long run for firms to hoard workers during period when demand is temporarily at low levels (Maynard and Feldman, ed., 2011). The measurement challenges of this type of underemployment are explained in Maynard and Feldman, ed. (2011).

Labour hoarding represents the utilization or effort dimension of underemployment as some authors argue. The utilization or effort dimension refers not only to labour hoarding but to underutilization of labour in general, i.e. if workers do not have the incentive or motivation to put forth effort and they effectively shirk. This type of underemployment is clearly connected to the ratio of engaged to actively disengaged employees, which is discussed in the empirical part of the paper.

Underemployment with respect to the effort dimension may occur, for example, if the compensation system is poorly designed or if employee involvement and commitment is low. Organizational productivity may decline as a result.

The concept of subjective underemployment involves both a conscious perception that people's jobs do not allow significant use of their qualifications (Burris, 1983) and the development of revolutionary political consciousness as a consequence of objective underemployment (Derber, 1978, 1979; Burris, 1983, as in Livingstone, 2004, 53-54).

Some aspects of subjective underemployment which were used in Ontario Labour Force Survey could be found in Livingstone, 2004, 87.

² For more information about the multidimensional approach in the measurement of underemployment see in Brown and Pintaldi (2006).

3.3 The Sources of Data on Underemployment

The sources of data mostly used in the scientific research are: specialized labour force sample surveys, household surveys, administrative records, and national labour statistics. National statistical agencies mostly rely on the measurement frameworks adopted by ILO.

One way to identify persons in inadequate employment situations in labour force surveys is to include survey questions on the respondent's desire for changing his or her current work situation, and on the reason for such desire. The subjectivity of the resulting measures of inadequate employment should however be taken into account when interpreting the statistics (Hussmanns, 2007, 21).

Some examples of question formulations used in national household surveys in countries which apply similar criteria to those in international guidelines to measure underemployment could be found in Greenwood (1999), Oezell (2012), Bonnal et al. (2009).

In the recent period a several theories were developed/applied to study underemployment and therefore represent a research base of both theoretical and empirical studies on underemployment: person-job fit, relative deprivation, labour utilization framework, human capital theory.³

4 Underemployment and Employee engagement

The aim of the empirical part of the research was to analyze the relation between the underemployment rates and employee engagement. The empirical research results have shown that the employee engagement is the critical driver of productivity and growth (Gallup, Inc., 2010). They are also indicating that higher education levels do not always imply higher engagement. Therefore the problem of underemployment should be considered in order to explain this phenomenon.

The availability of data has led the authors to use the following indicators: time-related underemployment rates as a measure of underemployment and the ratio of engaged to actively disengaged employees⁴ as a measure of the level of employee engagement at work. (Gallup country-level data were used⁵). The scope of the analysis was to encompass EU countries for the period of 2008-2015.

The country-level data on time-related underemployment are compared with the ratio of engaged to actively disengaged workers in table 1.

³ The list of representative authors is to be found in: Maynard and Feldman, ed. (2011, 36).

⁴ The percentage of underemployed part-time workers is given for the population of age 15-74, and the ratio of engaged to actively disengaged workers is given for the population aged 15 and older.

⁵ The ratio is calculated by using the data from Gallup, Inc. (2010), and Gallup, Inc. (2013).

Table 1. Underemployed part-time workers (% of total employment) and ratio of engaged to actively disengaged employees in EU

GEO/TIME	2008	2009	2010	Ratio engaged/ actively disengaged 2009-2010	2011	2012	Ratio engaged/ actively disengaged 2011-2012	2013	2014	2015
European Union (28 countries)	3,5	3,8	4,0		4,1	4,3		4,8	4,7	4,6
European Union (27 countries)	3,5	3,8	4,0		4,1	4,4		4,8	4,7	4,6
European Union (15 countries)	4,0	4,4	4,6		4,6	4,9		5,5	5,4	5,2
Euro area (19 countries)	3,8	4,0	4,2		4,2	4,5		5,2	5,2	5,1
Euro area (18 countries)	3,8	4,1	4,3		4,2	4,5		5,2	5,2	5,1
Euro area (17 countries)	3,9	4,0	4,2		4,2	4,5		5,2	5,2	5,1
Belgium	0,8	0,8	0,8		0,8	3,5	0,55:1	3,6	3,4	3,7
Bulgaria	0,6	0,7	0,9	0,29:1	0,9	0,9	0,57:1	1,1	1,1	0,9
Czech Republic	0,3	0,5	0,6	0,08:1	0,5	0,5	0,27:1	0,7	0,7	0,6
Denmark	2,4	3,4	3,2	2,5:1	3,4	3,3	2,1:1	3,0	2,7	2,4
Germany	6,4	5,8	5,8	0,48:1	4,9	4,5	0,63:1	4,4	4,1	3,9
Estonia	0,7	2,1	2,2		2,1	1,7	0,8:1	1,3	1,1	1,3
Ireland	:	5,5	6,0		7,5	8,0	0,8:1	7,8	6,7	5,7
Greece	2,1	2,6	3,1		3,9	5,1		6,1	6,8	6,8
Spain	4,0	5,3	6,0	0,91:1	6,7	7,9	0,90:1	9,1	9,1	8,5
France	:	:	:		:	:		:	6,2	6,4
France (metropolitan)	4,8	5,1	5,5	0,39:1	5,2	5,2	0,35:1	6,0	6,1	6,3
Croatia	1,9	2,1	2,7	0,04:1	2,8	2,2	0,09:1	2,2	2,2	2,7
Italy	1,7	1,8	1,9		1,9	2,6	0,78:1	2,8	3,3	3,3
Cyprus	2,0	2,4	2,9		4,1	5,3		7,4	9,3	9,2
Latvia	2,2	5,1	6,3		5,1	5,0	0,87:1	3,6	3,0	3,0
Lithuania	1,2	2,5	2,8		3,0	2,9	0,36:1	2,7	2,4	1,7
Luxembourg	0,7	2,2	1,7		1,7	2,2	1,0:1	2,0	2,0	2,5
Hungary	0,2	1,4	1,6		1,8	2,2	0,33:1	2,4	2,0	1,6
Malta	1,9	2,1	2,7		2,6	2,4	0,95:1	2,9	2,5	2,3
Netherlands	1,1	1,3	1,3		1,5	1,8	0,82:1	7,1	7,3	6,8
Austria	3,4	3,7	3,1	1,53:1	3,3	3,6	1,17:1	4,1	4,1	4,4
Poland	1,6	1,8	1,9	0,44:1	2,0	2,2	1,13:1	2,3	2,4	2,0
Portugal	1,9	1,9	2,0		4,6	5,6	1,19:1	5,9	5,5	5,3
Romania	2,3	2,2	2,6	0,87:1	2,5	2,5		2,6	2,8	3,1
Slovenia	1,4	1,9	2,0		2,1	2,0	0,94:1	2,5	2,8	3,4
Slovakia	0,8	1,0	1,5		1,6	1,6	0,55:1	1,9	2,0	2,4
Finland	2,9	3,2	3,3		3,1	3,0	0,79:1	3,2	3,7	4,1
Sweden	4,7	5,2	5,1	1,43:1	4,9	5,1	1,33:1	5,3	5,0	4,4

United Kingdom	4,3	5,4	5,8	0,91:1	6,1	6,5	0,65:1	6,5	5,9	5,6
Iceland	:	:	:		:	:	1,6:1	:	5,3	5,2
Norway	3,0	3,0	3,1		3,2	3,1	2,29:1	2,9	2,7	2,9
Switzerland	:	:	5,7	2,56:1	5,6	6,0	2,0:1	6,0	6,2	6,6
FYR of Macedonia	1,8	1,8	2,1		2,2	2,2	0,38:1	1,9	2,9	2,1
Turkey	1,3	1,9	2,0	0,36:1	1,6	1,4	0,21:1	1,4	1,5	1,2

Source: Eurostat, 2016.

The analysis was severely limited by the availability of data. The two indicators use slightly different age group of population (underemployment data are for the population of age 15-74, and the engagement ratio is given for the population aged 15 and older). This is also an obstacle to comparison purposes.

This introductory analysis' purpose was to detect trends and relation between two selected indicators.

In the most of EU countries there is an evident trend of growing underemployment. Germany is the exception – it shows a constant trend of decreasing underemployment in the analyzed period of time. However, from 2013 or later (depending on specific country) the percentage of underemployed part-time workers has started to decrease in most of the EU countries. This pattern seems to relate to the course of the business cycle (coming out from the recent global financial crisis). Significant path dependency is to be seen for the period of 2008 to 2010, whereby previous periods of underemployment in the global financial crisis increase the propensity towards further underemployment in the following year.

The comparison of the results for a chosen set of countries does not show a consistent relation between time-related underemployment and employee engagement levels. The relation is evidently country-specific and demands the inclusion of new variables in the future empirical research. In order to better explain the nexus between underemployment and workers' engagement level a broader set of indicators should be introduced. The authors suggest the inclusion of skill-related underemployment data⁶ which are expected to be stronger related to employee engagement. Indicators of other inadequate employment situations and the labour market characteristics for a specific country should be also considered.

5 The Socio-economic Costs of Underemployment

The costs of different types of underemployment are usually not calculated. The methodology of measuring both economic as well as social costs on the micro- and macroeconomic level is still to be developed. Gathering the data needed to determine what the full costs of underemployment actually are is the first step. The purpose of this section is to stress the urgent need for measuring hidden costs of underemployment on both organisational as well as national level.

The list of socio-economic effects of underemployment is long. They could be determined and measured on different levels: individuals, families, communities, organizations and nations.

⁶ Overqualification statistics or similar data could be used. A good source is Cedefop European Skills and Jobs (ESJ) survey, Cedefop (2015) or ILO statistics (2014).

Nonvoluntary underemployment situations affect financial, emotional and social well-being of the individual. There are more negative job and work attitudes among underemployed. They report lower job satisfaction⁷, lower life satisfaction (Feldman and Turnley, 1995, Burke, 1998, Friedland and Price, 2003, Brown et al, 2007, Wilkins, 2007; as in Li et al., 2015, 439) greater intentions to leave their jobs, and they experience poorer psychological⁸ and physical health, as well as wage penalty (this penalty can continue to depress an individual's earnings for years afterward). Persistently lower income is the reason for lower access to credits and lower savings (Li et al., 2015). In economic terms, there is already data that show that the effects of being underemployed directly after graduating from college can linger for more than 10 years (Alberti, 2011). Although underemployment is not as potentially detrimental to workers as unemployment, it can nevertheless have long-term consequences for career progression, earnings potential and the accumulation of retirement income (Li et al., 2015, 439).

As mentioned earlier a person can be simultaneously in different types (forms) of underemployment. Very often one form of underemployment leads to another type of underemployment. The empirical data are showing a positive relationship between time-related and skill-related underemployment. Overeducation is found to impose costs on individuals, reducing earnings by between 10 and 20 per cent and lowering job satisfaction (Linsley, 2005).

Underemployment is commonly associated with depression, loss of self-esteem, anger, sadness, worry, suicidal ideation, and stress-related illnesses, increased alcohol abuse, lower birthweight, but is less consistently associated with major diseases and other physical health problems (Dooley and Prause, 2004, Raykov, 2009, Gallup 2010, Maynard and Feldman, ed., 2011, 8).

While, underemployment may be associated with lower citizenship behaviour and greater withdrawal behaviours (e.g. absence), there is little evidence that it is associated with more destructive forms of counterproductive behaviour. However, underemployed workers are less likely to go above and beyond the call of duty at work, because doing so would only further increase their sense of inequity⁹. Underemployment is related to higher turnover within the following year and better career advancement internally than externally (Maynard and Feldman, ed., 2011, 8). Long-term underemployment leads also to erosion or atrophy of skills which negatively affects prospects for future jobs. In longer term, if underemployment continues, workers lose the ability to update their skills with on-the-job training, retain for different fields or downscale their lifestyle and accept long-term underemployment (Amadeo, 2016).

Underemployment can lead to negative outcomes for individuals because of poor person-job fit, breaches of psychological contracts, lack of need fulfilment, and loss of attachment to meaningful work and relationships (Maynard and Feldman, ed., 2011, 7), which are all the reasons of inadequate employment situations.

The strain of underemployment appears also to hurt family and friendship networks, with relationships between spouses and partners, between parents and children, and between underemployed workers and their friends all suffering to some extent (Maynard and Feldman, ed., 2011, 2).

⁷ In his research, Maynard has found that workers who perceive themselves to be overqualified for their jobs report less job satisfaction even than workers who are involuntarily employed part-time (Alberti, 2011).

⁸ Persistent underemployment can further contribute to adverse mental health outcomes of workers (Beiser et al., 1993, Johnson and Johnson, 1996; as in Li, 2015, 439).

⁹ Several studies have recently pointed out that the effects of underemployment on performance may, in some conditions, be positive, i.e., that underemployed individuals can be high performers as well (Edwards and Shipp, 2007, Fine and Nevo, 2008, Holtom, Lee and Tidd, 2002, Erdogan and Bauer, 2009, Erdogan, Bauer, Peiro and Truxillo, 2011; as in Bashshur et al., 2011, 2).

For the family, these negative consequences include a lower standard of living, lower social status, greater marital discord, greater strain in relationships with children, decreased interaction with extended family members, and isolation in friendship networks (Maynard and Feldman, ed., 2011, 8).

At the aggregate level within communities, higher levels of underemployment are associated with higher levels of property crime, lower participation in voting, loss of corporate philanthropic support, and loss of social services (Maynard and Feldman, ed., 2011, 8).

On the organizational level various types of underemployment significantly affect the level of employee engagement and with it associated performance outcomes (productivity, profitability, customer ratings, turnover, absenteeism, safety incidents, shrinkage (theft), quality/defects). Underemployment may ultimately hinder organizational effectiveness (Maynard et. al., 2006, 510).

The costs of underemployment on the macroeconomic level are to be found in labour underutilization, inefficiency and social welfare loss; disparities in income and access to productive jobs; lost output; slowing economic growth and competitiveness; higher poverty levels and reduced consumer demand (Li et al., 2015, Amadeo, 2016). Simic (2002) describes that the volume of underemployment and overemployment may provide accurate measurement of the impact that employment mismatches can have on the economy in terms of lost output.

In the last few years, the influence of underemployment following the crisis can be seen in reducing the growth potential and wasting resources as it is explained in OECD (2011).

Skills mismatch and shortages can contribute to structural underemployment, reduce the growth potential of the economy and also puts the question of the ability of the society to use the human capital (OECD, 2011). The benefits of investments in skills in terms of productivity growth, higher wages and innovation potential will be reduced when the individuals have more skills than required. According to Spraggins (2013) it's a poor investment to pay employees for skills they aren't using and that could benefit the organization. Under-skilled workforce can leave low-skilled workers in low-paid jobs. OECD (2011) also warns that in situations where investments in education are not accompanied by job growth, the results will be high rates of graduate unemployment and qualification mismatch.

6 Concluding Remarks and Policy implications

The results of the research have stressed the relevance of measuring different types of underemployment in order to prevent and address its hidden costs.

The underemployment data has become a relevant input for the design, implementation and evaluation of employment, income and social policies and programmes. It should direct the decision makers towards policies that will help underemployed workers and prevent underemployment from becoming structural.

Measures will depend on each country's specific institutions and characteristics, regarding reforms in product markets, social protection systems and activation policies, public employment services, wage-setting institutions, employment protection legislation, skills and training. Dealing with these challenges will require a mutually reinforcing approach that seeks to strengthen growth and encourage greater job creation and tackle structural barriers in the labour market that are preventing individuals from finding productive and rewarding jobs that correspond well with their skills and capacities (OECD, 2011, 2). Technological changes, changes in skill needs and demographic changes can influence underemployment, require anticipation and adequate response in policy implementation. Policies that moderate unemployment are also expected to moderate underemployment.

The interventions can range from preventing involuntary underemployment situations (investments in education, fiscal and monetary policies), preventing symptoms resulting from underemployment

(workshops and counselling), early intervention for symptoms of underemployment (crisis intervention, advisories to healthcare providers), to managing disease (clinical treatment, assuring continuing health insurance).

The creators of education policies should concentrate on developing skills and programmes that are in line with labour market changes and labour characteristics. Pratomo (2015) confirms that it is possible that workers with higher education tend to be underemployed which shows the inability of the labour market to absorb educated workers optimally. The reason for this can be the mismatch between the education system and the labour market.

The results of the research are relevant for internal human resource policy makers who should address the problem of underemployment when considering job design and analysis, recruitment and selection, training and development.

It should become a critical priority task for decision makers on both microeconomic (organizational) and macroeconomic (national) level to measure and address the hidden costs of underemployment in order to reach higher performance outcomes.

The limitations of the research were mostly related to the nonavailability of comparable data sets. The results of the research have not shown a consistent relation between time-related underemployment and employee engagement. In order to better explain the nexus between underemployment and workers' engagement level a broader set of indicators should be introduced, including skill-related underemployment data or indicators of other inadequate employment situations. The country-specific labour market characteristics should also be considered.

As some other authors have already stated, research on underemployment would be enriched by examining how employees change in a job, how jobs change, how employees recall and anticipate their underemployment, and how employees change their jobs (Bashshur et al., 2011, 19).

The research results represent a valuable input into future empirical research on the topic, and it could be of use for both practitioners and academics.

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