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The potential / opportunities for leveraging competences: the intangible assets dimension

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ABSTRACT

A lot of discussions on the variety and identification of individual abilities and / or general competences arise. There is a lack of unanimous approach among scholars. Relevance of the research is proved by numerous publications on human, intellectual, knowledge capital, the impact of intangible assets on economic growth of the country and competitiveness. Some intangible assets could be easily identified, it is easy to determine their value because they are manifested in material forms, e.g. software, and patents; however, there is a increasing demand to identify and evaluate those intangible assets, which are complicated in terms of determining their value; those are e.g. knowledge, experience, abilities, and competences. The aim of this paper is to determine the potential of leveraging abilities to increase income of Lithuanian population by distinguishing abilities in the context of intangible assets definition and evaluation. The methods of research include the following: analysis of scientific literature, comparative analysis, questionnaire survey, summarizing method, statistical data analysis methods. Empirical research allowed determining statistically significant relations between general abilities, population income and expenditure, and education. The majority of surveyed Lithuanian inhabitants think that their income will not change, if they improve their abilities in any of identified domains.

INTRODUCTION

Lately aspects of development and leveraging abilities in the context of intangible assets attracted a lot of researcher attention (Tiana (2004); Potelienė & Tamašauskienė (2014); Jakubė & Juozaitis (2012); Ragab & Arisha (2014); Bolisani & Oltramari (2012); Castello-Climent & Domenech (2014), etc.). Relevance of the research is proved by numerous publications on human, intellectual, knowledge capital, the impact of intangible assets on company efficiency or economic

growth of the country. Webster and Jensen (2006) argued that since the amount of tangible matter is fixed, the growth and deployment of intangible capital in the production process must be the sole source of productivity growth and thus the only way we can enhance the (material) quality of life. Ferreira and Hamilton, (2010) found the striking result that the only statistically significant factor of production is intangible capital, with a 50% share. This finding supports the conjecture in Ferreira and Vincent (2005) that intangible factors, rather than produced or natural capital, are the principal sources of consumption growth in high-income countries.

Intangible assets are non-physical, renewable resources that transform during their use, with economic value that has a potential to grow during the use (Diefenbach, 2006). The latter also includes abilities and / or general competences of different levels. According to Gimzauskiene, Staliuniene (2010), because capabilities are intangible assets, the uses of tangible assets and other kinds of intangible assets, are determined by that capabilities being considered to be an important special category of assets. Capabilities arise from the coordinated activities of groups of people who pool their individual skills in using assets to generate an organisational action.

According to forecasts (COM (2012) 669), by 2020 the share of jobs where high-level abilities are required will grow by 20 %. The staff will be expected not only to constantly update professional skills, but also to possess a wide range of general competences because staff knowledge, skills, and continuous development are crucial for innovation, growth of efficiency and competitiveness. In general, potential covers opportunities of a person, a society, a country in a specific domain. According to Jakubė ir Juozaitis (2012), due to constantly changing environment factors knowledge and abilities become a vital framework for any competitive economy because an individual with high-level abilities is can get oriented and act in the complex and changeable world, meet expectations by combining achievements from different fields.

A wide range of interpretations of competences and abilities should be related to their leveraging potential, i. e. an intention to increase / develop and use / apply them with a goal to benefit from them in future. *The aim of this paper* is to determine the potential of leveraging abilities to increase the income of Lithuanian population by distinguishing abilities in the context of intangible assets definition and evaluation. The *methods of research* include the following: analysis of scientific literature, comparative analysis, questionnaire survey, summarizing method, statistical data analysis methods.

1. IDENTIFICATION OF ABILITIES IN THE CONTEXT OF DEFINITION AND EVALUATION OF INTANGIBLE ASSETS

In general, intangible assets can be defined as assets of non-material substance / manifestation that are expected to bring benefits in future; however, such interpretation is too broad and the concept and structure of assets is still intensively discussed by research community.

According to Kramer et al. (2011) intangible assets could be identified at micro, macro and regional levels by distinguishing organisational capacity and the ability to networking. Ragab and Arisha (2014) argue that intangible assets should cover an individual dimension, i. e. micro level, because an individual is a starting point for their development. The authors of MinK (an acronym for Measuring Individual Knowledge) methodology argue that, first of all, intangible assets are measures of individual knowledge possessed by state, company or organisation. According to Ragab and Arisha (2014), individual knowledge should be evaluated similarly as intellectual capital, i. e. by dividing it into separate components, in other words, dimensions, and using selected measure units. Notably, in their MinK methodology of intangible assets the authors included only those features / indicators of individual knowledge that are related to work.

The system for classification of intangible assets suggested by Diefenbach (2006), where intangible assets belonging to an individual are assigned to the *first* category, helps to understand

the complex nature of intangible asset concept and structure. According to the author, these are: implicit individual knowledge, experiences, abilities, qualification, values, beliefs and objectives, personal health, quality of life, personal abilities to make decisions, interaction with environment, ability to search / process / use information, formal qualification achievements and awards. In the economic context those assets are often defined as human capital. Assets, which belong more than to one person, are assigned to the *second* category. These are personal / informal relations, social norms, formal relations that are not proven by a contract, trust etc. These assets are also referred to as social capital. Assets of the *third* category are common to a group of individuals, but they are not pre-determined by individuals: language, cultural traditions, and heritage. Those assets could be comprehended as cultural capital. The *fourth* group is statutory capital. The *fifth* group covers assets that could be transferred, sold, and rented. These assets include databases, information flows, explicit knowledge, intellectual property, and contracts. They are also referred to as knowledge or information capital. Assets that belong to the *sixth* category are called embedded capital and include intangible infrastructure (hierarchical systems, management, planning, communication, process control, organisational knowledge and ability to integrate technologies, models etc.).

Some intangible assets could be easily identified, it is easy to determine their value because they are manifested in material forms, e.g. software, and patents; however, there is a increasing demand to identify and evaluate those intangible assets, which are complicated in terms of determining their value; those are e.g. knowledge, experience, abilities, and competences.

On 23-24 March 2000 in Lisbon the decision of the European Council to define the key competences was a basis for further European Union "Life-long learning" communications. When an individual is considered the most important European asset, the demand for educating general competences and abilities is emphasised to ensure the capability of individuals to adapt to dynamic environment in a quick and effective manner. Recommendation by the European Parliament and the Council on general life-long learning competences (2006/962/EB) emphasises eight dimensions of competences that are equally important in order to ensure a successful adaptation of a person in the knowledge society, i. e.: a) communication in the mother tongue; b) communication in foreign languages; c) mathematical competence and general competences in science and technology; c) digital literacy; e) learning to learn; f) social and civic competences; g) sense of initiative and entreneurship; h) cultural awareness and expression.

The competence of communication in the mother *tongue* is understood as knowledge, abilities and attitudes that enable a person to adequately understand and effectively express by means of language different content – information, thoughts, and ideas, emotional and esthetic experience. In opinion of Garrido ir A´ Ivarez (2006), an intercultural dimension in foreign languages highlights a communicational aspect that relies on acquisition of specific competences. It is noted that a poor knowledge of language can become a barrier for functioning of a single market. Absent or poor knowledge of languages is a barrier that stops the development of business (c.f. Conceptions and models for educating general skills and competences, 2014). According to Gedvilienė et al. (2015) *mathematical* skills in science and technology are abilities to develop and apply mathematical thinking to solve everyday life problems. *Digital literacy* is an ability to act in various information and communication technology environments, abilities to access, process, analyse, reflect on, critically evaluate, understand, design and create content in these environments. In other words, computer and digital literacy is a specific part of general information literacy. The concept of information literacy covers ability to recognise, acquire, evaluate, select, ethically and responsibly use needed information from various sources (Media and information literacy in Lithuania, 2014). According Kazlauskienė and Žitkienė (2014), the development of *entrepreneurship* would contribute to the change of residents' value attitudes, the culture of entrepreneurship, the increase of their self-perception level, creativity, pro-activeness, support of personal initiative, seeking to increase the potential of the national entrepreneurship. On the other hand, relevantly applied the potential of entrepreneurship may foster the recovery of economies and business expansion, the

development of the new knowledge related to the establishment of smart ventures, the increase of employment. The above-mentioned recommendation of the European Parliament and the Council defines social and civic competences as personal, interpersonal and intercultural abilities as well as norms of behaviour that equip people to participate in an effective and constructive manner in social and working life, in particular, in an increasingly diverse society, and, if necessary, to resolve conflicts. A civic competence enables people to fully participate in civic life by relying on knowledge of social and political concepts and structures and commitment to active and democratic participation. On the one hand, awareness is related to stimulation of personal effectiveness (in other words – self-creation) and self-management (in other words – self-regulation, self-control), i. e. an ability to adapt in society by responsible behaviour (to reach own goals without infringing the rights of other people) (Kolbergytė, Indrašienė 2012). On the other hand, the key *competence of cultural awareness and expression* has an important lifelong learning dimension and, as an important transversal competence, is crucial to acquisition of other key competences for lifelong learning. Cultural and creative competences are a basis for creativity and innovation, which in turn boosts smart, sustainable and inclusive growth. This is due to the fact that these competences can contribute to building intellectual capital which is increasingly recognised as a new source of growth and competitiveness in Europe, (Council conclusions on cultural and creative competences and their role in building the intellectual capital, 2011).

Discussed abilities / general competences are heterogenous and combined, inter-related and complementary. Research literature highlights not only the diversity of abilities and / or general competences, but also the significance of leveraging / using abilities. In the research by Bolisani and Oltramari (2012) a direct positive relation between *knowledge and end-result innovation* was proven. Estimation of market value of knowledge is based on the methodology for evaluating salary and remuneration. Potelienė ir Tamašauskienė (2014) highlight that *the potential of human capital becomes relevant when analysing income differentiation*. Castello-Climent ir Domenech (2014) who researched the relation between human capital and income revealed that *education, which is often evaluated as human capital of a country, is positively related to individual income*. Higher level of education results in growth of income and vice versa. Education and leveraging / use of abilities are particularly important in the context of intangible assets. In order to reach higher level of general competences, first of all, population should understand that constant learning and educating personal competences can help to occupy higher positions at work, improve qualifications that would allow earning more income.

2. RESEARCH METHODOLOGY

One may agree that the most effective method to evaluate general competences / abilities of a country population is to give the respondents various tasks in order to assess their level. However, researches of such extent are very expensive and fragmented. These are, for instance, TIMMS (Trends in International Mathematics and Sciences Study) – international research of skills in mathematics and science and PIRLS (Progress in International Reading Literacy Study) – international research in reading skills. Usually research of this kind does not evaluate the ability of country population to leverage / use skills, does not assess intentions to develop and train certain competences, i. e. does not evaluate their potential and possible impact on the growth of population income.

In line with this approach a representative national survey of Lithuanian population was performed to reach the following objectives: (1) to determine social-demographic features of the respondents (location, education, income, expenditure); (2) to determine opinions of Lithuanian poplation on changes of their personal income in case of improving competences in particular fields; (3) to identify the perspectives for investments / expenditures on personal abilities and increase of income and their inter-relations.

During the survey representatives of Lithuanian population were asked to evaluate the potential for income growth in case of improving the competences / abilities in the following fields:

1. Ability to generate new ideas, apply new methods for action that would allow improving work / operation effectiveness.
2. Ability to use new and uncommon means for work / tools / equipment / technology.
3. Strategic thinking (having a long-term vision, permanent analysis of situation, ability to determine priorities / objectives and commit to them).
4. Improved knowledge of spoken and written Lithuanian (official) language.
5. Improved knowledge of written and spoken foreign language (or several languages).
6. Digital literacy (use of Microsoft Office, Internet, social networking sites, internet banking etc.).
7. Improved mathematical competences (calculating, applying mathematics to personal finance and at work).
8. Permanent / continuous learning (attending courses, workshops, conferences, and trainings).
9. Social / communication (communicating with managers, colleagues, friends, ability to establish necesary relations).
10. Ability to work and collaborate in teams effectively, to generate / share ideas together, to colaboratively perform tasks assigned by others.
11. Civic (participation in activities of communities, municipalities, associations, community work days and public events etc.).
12. Entrepreneurship (absence of a fear to risk, reach defined objectives, self-confidence, making independent and responsible solutions, sense of initiative).
13. Leadership abilities (to show an example, to educate and encourage people to act, to observe their activities and provide feedback).
14. Cultural awareness (knowledge of other cultures, art, music, theatre, ability to discuss cultural topics).
15. Self-control in stressful situation (ability to control emotions, accept criticism, work under conditions of overload).

In this research respondents of eighteen years old and older were surveyed; they were selected by using multilevel probabilistic selection method. Research period: 21 January – 5 February 2016. The number of respondents is N = 1001. The survey was carried out in 19 cities and 24 villages in Lithuania. Research error is 3,1 %. Research data were processed by statistical analysis software SPSS 23. A Likert scale was applied.

3. RESEARCH FINDINGS

Analysis of social-demographic characteristics of respondents. Many respondents lived in cities; they comprised 30 % of all participants of the survey, while village population comprised 25.7 % and population of towns with 5000-8000 inhabitants – 24.6 %. (see Table 1). When analysing *geographic* characteristics of respondents, Vilnius was studied separately because this city should be distinguished from other locations due to urbanistic development, population, and positive dynamics of births, and salaries that are higher than a country average. 17.8 % of respondents living in the capital of Lithuania took place in the survey. The least number of respondents lived in small towns with population of 3000-5000 persons – 2 %.

Education is an essential criterion when evaluating the potential of intangible assets. Most survey respondents had secondary education (24.4 %) and the least number of respondents had a PhD. (0.9 %) (see Table 1). Evaluation of education indicators according to geographical distribution has shown that the worst situation is in villages. 38 % of survey participants have only primary

education. The largest number of persons with graduate degree lives in the capital (44 %) and other large Lithuanian cities – 33 %.

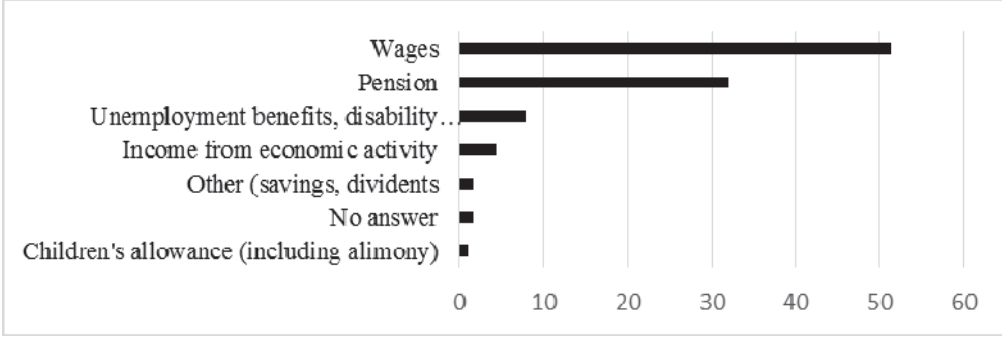
Table 1. Distribution of respondents according to education and geographical location

		Percent	*Jūsų gyvenamoji vietovė:*					
			Village (less then 3 000 inhabitants)	*Small city (3 000 – 5 000 inhabitants)*	*City (5 000 – 80 000 inhabitants)*	*Bigger cities (Kaunas, Klaipėda, Panevėžys, Šiauliai)*	*Capital (Vilnius)*	*Total, perc.*
What is your education level?	Primary	2,4	38%	4%	17%	25%	17%	100%
	Basic education	7,7	34%	5%	19%	30%	12%	100%
	Secondary	24,2	23%	2%	26%	33%	16%	100%
	Vocational training	17,7	28%	2%	30%	28%	12%	100%
	Collage	18,7	31%	2%	32%	22%	13%	100%
	Higer education (non degree)	5,3	19%	4%	21%	38%	19%	100%
	Higher education bachelors	13,7	27%	0%	21%	31%	20%	100%
	Higer education masters	8,9	15%	0%	9%	33%	44%	100%
	Doctoral or equivalent level	0,9	0%	0%	11%	56%	33%	100%
	No response	0,6	0%	0%	33%	67%	0%	100%
Total		100%	26%	2%	25%	30%	18%	100%

Source: own work

All survey participants (N = 1001) indicated the main *source of income*. More than a half of respondents indicated that the main source of income was a salary (see Figure 1).

Figure 1. The main source of respondents'income, %



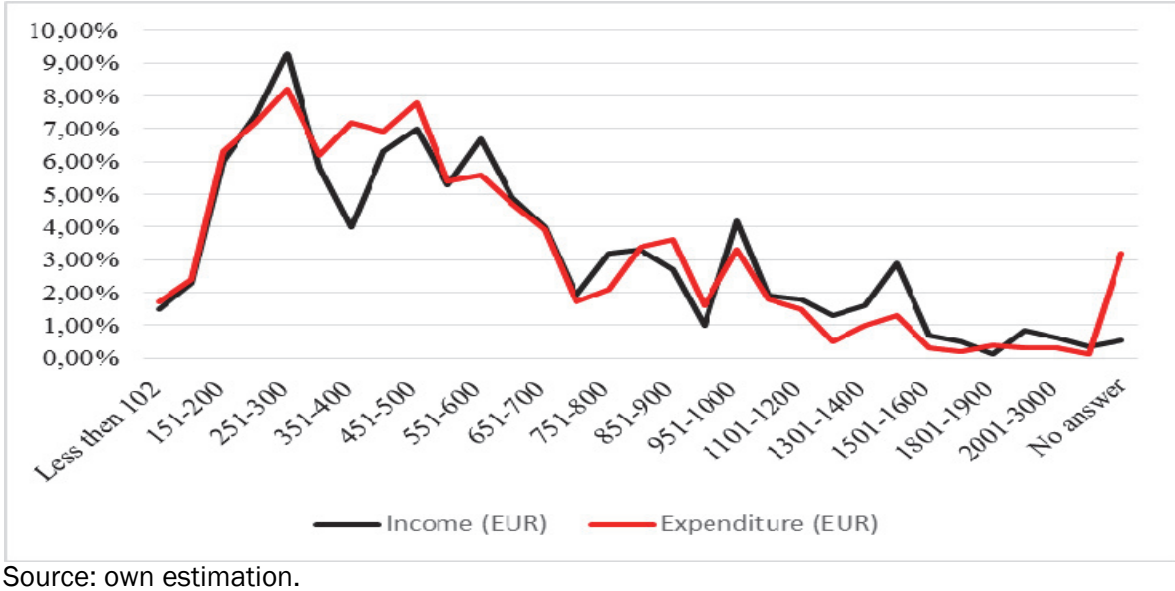
Source: own work.

Monthly income and expenditure of population were analysed. 32 participants of the survey haven't answered the question about their monthly income, while 12 persons haven't provided information about monthly expenditure. Findings revealed that the income of most population (70.3 %) does not reach 700 EUR.

Attention should be drawn to the fact that expenditure of respondents with less income exceeds their income, but this trend disappears with income growth. *Uneven distribution of income and expenditure can reveal the scale of unaccounted and / or borrowed income*.

Spearman and Kendalls correlation analysis has shown a statistically significant small positive relation between *education and income of Lithuanian population* (r =.209**, p < 0.01). According to survey results, majority of persons with higher (or any appropriate) education earn 401-700 EUR. Only 13 % of all respondents (N = 1001) earn more than 1000 EUR.

Figure 2. Monthly respondent income and expenditure, %



Source: own estimation.

However, the level of education does not guarantee higher income or stable growth of state economy. Evaluation of income growth and population abilities'potential is much more important.

Evaluation of competence potential and income growth of Lithuanian population. Spearman correlation analysis has shown *strong correlation between abilities of all fields*. It could be argued with 95 % certainty that, in people's opinion, with an improvement of competences in one field income growth potential will increase in improvement of other competences and vice versa. Research has shown that in all cases difference of obtained values from zero is statistically significant (p = 0.000<0.01).

Table 1. Correlation Coefficient (Spearman's rho)

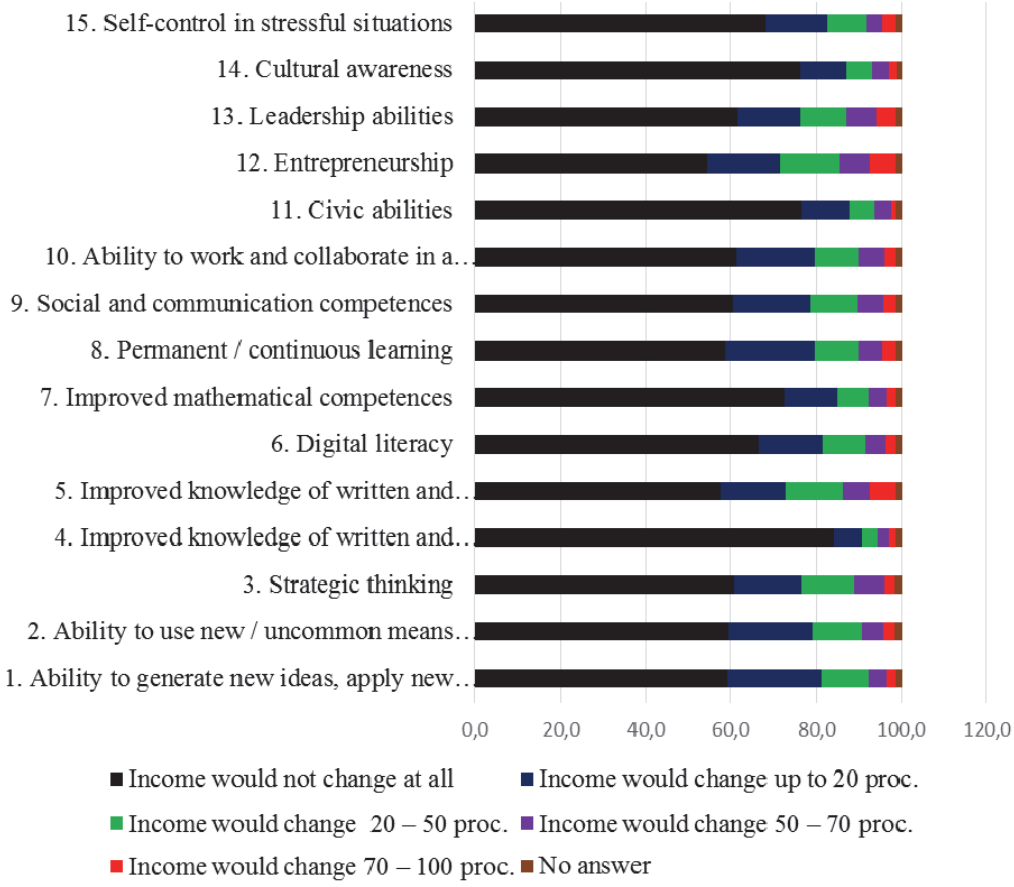
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	,824**	1,000												
3	,801**	,793**	1,000											
4	,505**	,521**	,506**	1,000										

5	,639**	,687**	,683**	,516**	1,000									
6	,629**	,670**	,630**	,595**	,751**	1,000								
7	,662**	,677**	,641**	,620**	,663**	,803**	1,000							
8	,736**	,706**	,736**	,539**	,694**	,686**	,697**	1,000						
9	,721**	,716**	,746**	,548**	,709**	,679**	,683**	,801**	1,000					
10	,734**	,722**	,711**	,557**	,680**	,723**	,700**	,763**	,803**	1,000				
11	,632**	,595**	,637**	,624**	,563**	,591**	,638**	,662**	,675**	,676**	1,000			
12	,742**	,732**	,756**	,517**	,729**	,663**	,653**	,777**	,761**	,736**	,645**	1,000		
13	,734**	,699**	,762**	,534**	,688**	,651**	,669**	,748**	,777**	,764**	,671**	,819**	1,000	
14	,643**	,601**	,667**	,637**	,614**	,634**	,666**	,685**	,712**	,717**	,772**	,682**	,741**	1,000
15	,674**	,680**	,703**	,573**	,647**	,667**	,697**	,723**	,732**	,770**	,699**	,724**	,773**	,731**

Where: 1. Ability to generate new ideas, apply new methods for action; 2. Ability to use new / uncommon means for work / tools / equipment / technologies; 3. Strategic thinking; 4. Improved knowledge of written and spoken Lithuanian (official) language; 5. Improved knowledge of written and spoken foreign language (or several foreign languages); 6. Digital literacy; 7. Improved mathematical competences; 8. Permanent / continuous learning; 9. Social and communication competences; 10. Ability to work and collaborate in a team effectively; 11. Civic abilities; 12. Entrepreneurship; 13. Leadership abilities; 14. Cultural awareness.

The results were not delightful when *each field of abilities has been evaluated individually*. Majority of population thinks that improving their competences will not change their financial condition.

Figure 3. Evaluation of personal income growth due to improving of abilities



According to research findings, the population is least interested in improving their mother tongue skills; even 84.3 % of respondents believe that improvement of this skill will not contribute to their income growth; 76.3 % of respondents think that cultural awareness is not important for their income growth; 76.5% evaluate the potential of civic skills negatively.

65 % of all surveyed population believe that their income would not change if they improve skills in any of listed fields. Such results speak for themselves because the development of human capital mostly depends on the number of educated people, birth indicators; however, the level of knowledge is pre-conditioned by informal skills that are particularly significant at the contemporary market.

Lithuanian population who believes that the income can grow by 20 % mostly values abilities to generate new ideas (22.1 %), continuous learning (21.0 %), ability to work in a team (18.1 %) and only 6.4 % believe that improved knowledge of mother tongue will increase their income by 20 %. Evaluation of income growth by 20-50 % has shown that improvement of knowledge of mother tongue, civic and cultural skills was the least valued. Even 5.9 % of population thinks that a better knowledge of foreign languages will increase their income by 50 %, 6.1 % of respondents similarly judge about entrepreneurship.

Basing on the answers of the respondents averages were calculated. They show that 65 % of all survey participants are not inclined to think that their income is likely to increase by acquiring additional competences. Notably, most respondents who believe that their income is not likely to change live in village, least of them – in the capital.

Figure 4. Summary of Lithuanian population answers: How, in your opinion, your income would change in case of improving general competences?

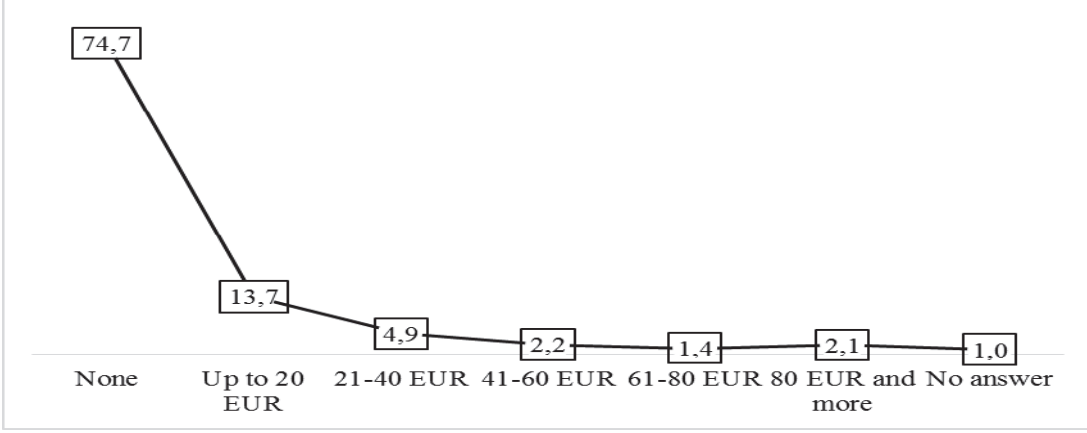
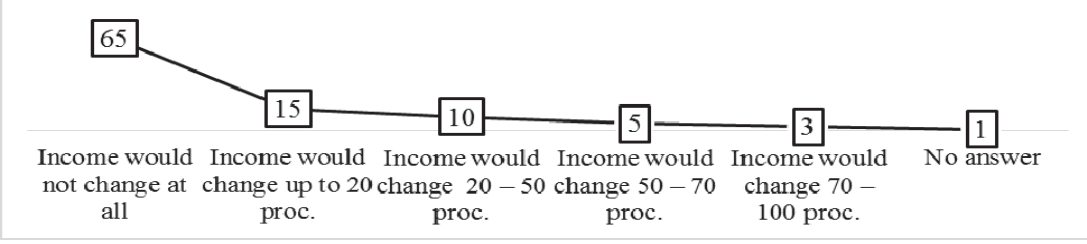


Figure 5. Summary of Lithuanian population answers: Monthly expenditure of Lithuanian population to develop competences



Analysis of correlation between population expenditure, income (value) and the potential of analysed competences. Findings have shown that most respondents do not invest in improving their competences at all; although Spearman correlation coefficient reveals statistically significant positive relations between *monthly expenditure to improving competences* and:

- ability to generate new ideas ($r = .332^{**}$, $p < 0.01$),
- act by using new uncommon means for work ($r = .326^{**}$, $p < 0.01$),
- strategic thinking ($r = .300^{**}$, $p < 0.01$),
- knowledge of foreign language ($r = .309^{**}$, $p < 0.01$),
- continuous learning ($r = .325^{**}$, $p < 0.01$), social and communication competences ($r = .312^{**}$, $p < 0.01$).

Mother tongue skills that were less valued by respondents had a weak, but statistically significant correlation with montly expenses on improving personal competences ($r = .201^{**}$, $p < 0.01$). Expenditures on improving competences positively relate to indicators of monthly income of respondents ($r = .277^{**}$, $p < 0.01$) and consumption expenditures ($r = .241^{**}$, $p < 0.01$).

Weak, but statistically significant correlation was found between *population income* and:

- ability to generate new ideas ($r = .140^{**}$, $p < 0.01$),
- to act by using new uncommon means ($r = .127^{**}$, $p < 0.01$),
- strategic thinking ($r = .132^{**}$, $p < 0.01$),
- foreign language ($r = .103^{**}$, $p < 0.01$),
- social, communication competences ($r = .118^{**}$, $p < 0.01$),
- entrepreneurship ($r = .133^{**}$, $p < 0.01$),
- leadership ($r = .143^{**}$, $p < 0.01$) indicators.

Similar correlation tendencies have been revealed between *monthly expenditure* of respondents and:

- ability to generate new ideas ($r = .109^{**}$, $p < 0.01$),
- to act by using new uncommon means ($r = .127^{**}$, $p < 0.01$),
- strategic thinking ($r = .114^{**}$, $p < 0.01$),
- entrepreneurship ($r = .109^{**}$, $p < 0.01$),
- leadership ($r = .104^{**}$, $p < 0.01$) indicators.

CONCLUSION

Intangible assets are non-physical, renewable resources that can transform during their use and with economic value that has a potential to grow during the use. Abilities of different levels and / or general competences are assigned to the latter.

A broad spectrum competences and abilities interpretations are related to their leveraging potential, i. e. an intention to improve / develop and use / apply competences in order to benefit from them in future. In order to reach higher level of general competences, the population should understand that continuous learning, improvement of personal competences can help seeking for higher positions at work, develop qualifications that will allow earning higher income.

Evaluation of general competences potential in terms of personal income of population in Lithuania has proved that this field has a lot of shortcomings in Lithuania. Such situation is preconditioned by the population's belief that improvement of their competences will not change their income; however, statistically significant relations between general competences, population income and expenditure, and education revealed by the research prove the opposite.

A large part of Lithuanian population is not inclined to think that improvement of their competences can change their status, their awareness is low, and they live in closed communities and

simply do not see any sense. Therefore, this research highlights the strong need for state contribution to developing an effective knowledge-based strategy for economic growth, raising awareness of the society about the necessity of developing and leveraging learning and competences.

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