ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume LVIII 48 Number 6, 2010

EDUCATION AS AN INCOME SITUATION DETERMINANT OF A CONSUMER

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Received: June 29, 2010

Abstract

STEJSKAL, L., STÁVKOVÁ, J.: *Education as an income situation determinant of a consumer.* Acta univ. agric. et silvic. Mendel. Brun., 2010, LVIII, No. 6, pp. 483–490

The article is focused on an analysis of educational attainment of an individual and income situation of their household. At the beginning, a compendious summary of secondary sources is introduced. It resumes data supporting and contradicting the hypothesis about education as a determinant of an income situation. The preliminary theses analysis is performed by results quantification of a project called European Union – Statistics on Income and Living Conditions (EU-SILC). Aim of the paper is to verify the input thesis assumed from secondary resources. The thesis concerns the direct proportion between a level of education achieved and level of financial income. An introduction of a methodology and research summarized data forms a basis for particular analyses which are based on a conjunction of obtained information on household average monthly income and the educational attainment of their leading member. Analyses are sustained by contingency which characterizes social groups, i.e. spheres in which leading members are mostly involved with regard to income. Research results proved the validity of the preliminary thesis about correlation, respectively direct proportionality of educational attainment and monthly income amount. Education is consequently identified as one of income situation determinants. The authors anticipate specificity of the selected point of view. Results are therefore presented only as a partial argument and a possible base for further enquiries.

educational attainment, EU-SILC, household income, income determination, social groups

Educational attainment is conventionally perceived as one of the fundamental income level determinants of an individual. Educational system quality is then understood as a determining factor of socioeconomic environment level and living standard of a society. According to Sak (2007), "the importance of education and schooling keeps growing and it will be intelligence and a scientific level of a population which will make a decision about future of each country in their competition". Sak adds that "at the same time, educational system complexity increases and its infrastructure improves". Besides several other publications, expert or laic forums and theoretical debates among academics and professionals, this problem has also gained attention of some political institutions and groups. In the European context, probably the most important recent event was the Council meeting about education, youth and culture held on 15th February 2010 based on the Strategic framework for European cooperation in education and training adopted in 2009. Participant ministers of education declared "the considerable role of education and training in Europe's efforts to promote growth and jobs"[1] (Seve-

1 Press release from the meeting is available on: http://europa.eu/rapid/pressReleasesAction.do?reference=PRES/10/21&format=HTML&aged=0&language=CS&guiLanguage=en; cit. 8. 6. 2010.

ral delegations expressed their interest in seeing the importance of education reflected in the forthcoming reform of the EU budget).

On the other hand, especially in our country in the 1990's, there was strong belief that the importance of education to gain competitive advantage at the labour market and assert oneself in the new market environment declines. The authors speculate that the origin of that belief might be found in experience with the contemporary law-regulated economical system which enabled many pseudo-businessmen to profit from legislative deficiencies. The real role of education in the society therefore stayed steady even in the transformation period. A theory of "declining profits in science" (Houser, 2010) presented in context of reactions on debate about the Academy of Sciences funding and insufficient research profitability in 2nd half of 2009 also brings an interesting contribution into consideration.

The authors performed a preliminary theses analysis of particular, specific point of view – by results quantification of a project called European Union – Statistics on Income and Living Conditions (EU-SILC). Article results are therefore based on a primary data analysis. The year 2007 was chosen as an enquired period with regard to used data accessibility. The national module of the all-European research was realized by the Czech Statistical Office (ČSÚ) within the scope of obligations resulting from a revision of Regulation (EC) 1177/2003. The main aim is to "longitudinally gather comparable data about inhabitants' social situation in all the European Union countries " and "simultaneously data which will provide information necessary to regulate state's social policy"[2]. It was primarily a demand for international harmonization of data collecting and processing together with higher qualitative requirements on provided information which led to replacement of Statistics of family accounts, which had been used before. As regards the above mentioned orientation, EU-SILC is considered to be the most appropriate source to verify preliminary theses of the article.

METHODOLOGY

Households' income and living conditions survey performed in 2007 was realized, as well as in previous years, in all of the regions of the Czech Republic. The applied questionnaire consisted of several parts and questions were related to both individuals and whole households. Primarily, information about working activity and individual household member's income was queried, other questions enquired data about housing conditions, transfers among households, social benefits, financial situation or household facilities and equipment.

The project was conceived as so-called rotation – to obtain objective information about social households, each of them remains in the study for four years and then it is excluded and replaced by a new reporting unit. The sample is partially changed and slightly enlarged[3].

An examined sample covered a total of 11 924 households, 9 675 of which were successfully interviewed and which provided all required data.

Demographic and sociological characteristics of households including the relationship between educational attainment and income situations are assigned according to "a leading member of household". According to the methodology published by ČSÚ1, there is always a man in nuclear family (wife - husband, unmarried partners) regardless to his economic activity. In a single-parent family (one parent with children) and non-family households (persons not connected by marriage, partnership nor parent-children relationship), the first clue to determine a leading member was the economic activity and the second one was income of household members. The same principle was used for more complicated types of households (i.e. housekeeping of more nuclear families).

By using the same methodology an educational attainment was divided into 4 levels: primary, secondary, full secondary and academic education. The full secondary education includes skilled workers with graduation, post-secondary educated and professional schools graduates. An academic education in-

I: *Number of households in the EU-SILC 2007 enquiry*

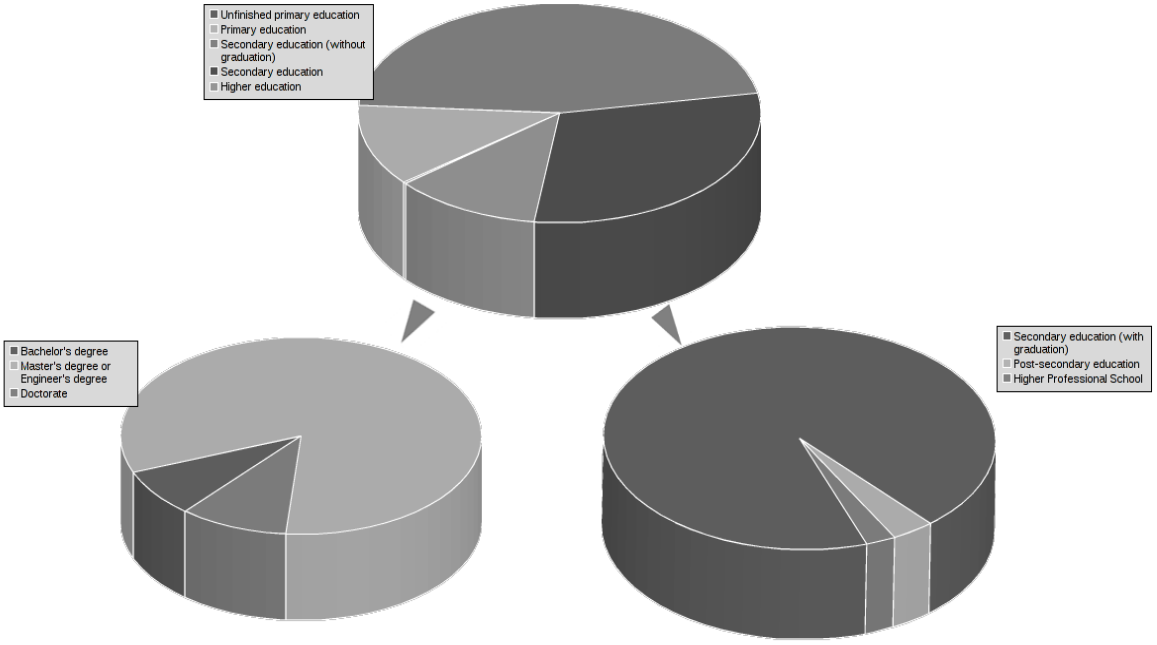
	Total sum	Enquiry coverage (percentage)
Interviewed (in total)	9675	83.3
Not interviewed (in total)	1936	
Including: enquiry refused (or income unreported)	1515	78.3
household unattended	363	18.8
household unable to participate	47	2.4
Other reasons (language barrier etc.)	11	0.6

Source: ČSÚ, modified

2 See the ČSÚ web, available in http://www.czso.cz/xt/redakce.nsf/i/vyberove_setreni_prijmu_a_zivotnich _podminek_domacnosti_eu_silc; cit 5. 6. 2010.

3 The research methodology has been already presented in Stejskal, Pustinová, Stávková (2010) & Stejskal, Stávková (2010); described in detail by Kabát (2007).

1: *Educational attainment of respondents*



volves bachelor's degree, master's degree, engineer's degree and doctoral studies. A ratio of respondents in these levels can be seen in graph 1.

The most numerous households have a skilled worker or a secondary educated person without graduation as a leading member. On the other side, the least numerous were the households of members without primary education. The bottom part of the graph displays breakdown of secondary and university graduates.

RESULTS

A question of income and education must be applied in the context of a type of an activity performed by the respondent. An ideal solution seems to be a cross-coupling between educational attainment and social group of the person. According to the authors' opinion, this study used separately would be to flat and would not have any real predictive value. Table II displays this analysis in relative frequency.

The households with a pensioner as a leading member were divided into two groups by other members' economic activity as a criterion. A household was considered as an employee's household if the leading member was employed or nominated to a function; according to the highest educational attainment of the leading member, the households were divided into *lower employee households,* if the leading member of the household had not reached secondary education, and *higher employee households,* if the leading household member had reached secondary education with graduation or any higher level. The other types of households included those with economically inactive or not receiving a retirement pension leading member; i.e. persons receiving parental benefit, students or persons living on property.

A data segmentation according to the economic activity of the household leading member and consecutive aggregation of economically active households (merging the groups of lower employee, gainfully employed, higher employee and the pensioner in household with an economically active member) created the most numerous segment of "the working population", which exceeded 60.9 % of all enquired households (for more detail see Stejskal, Stávková, 2010). Before the segmentation was performed, the most numerous group had been the pensioners' households without economically active members counting as many as 3 423 households representing 35.4 % of all enquired households.

The results of the analysis support the preliminary thesis – all the persons employed at higher positions (and probably better evaluated) reached at least secondary education with graduation. In addition, 189 out of 258, i.e. 73.2 % of all unemployed leading member of the households were not graduated, while subsequent analysis illustrates the fact that the group of households with unemployed leading member was the group with the lower income among all.

Analysis of income situation follows. All the data about households were gathered as a whole; including namely social benefits and benefits contingent on social usefulness; for their approval income of whole household is taken into account. Income earned by potential renting of realties or movable assets was also considered. As a part of individual questioning, income from main and subsidiary employment was enquired as well as other

II: *Household leading person's social group and education level, relative frequencies*

	Social group of a leading household member			
Household leading member's education	**Lower employee**	**Gainfully employed**	**Higher employee**	**Pensioner in household with EA* members**
Unfinished primary school	0.01%	–	–	–
Primary school	2.68%	0.21%	–	0.38%
Secondary school (without graduation)	21.96%	3.88%	–	2.70%
Secondary school (with graduation)	–	2.73%	15.21%	0.81%
Post-secondary school	–	0.08%	0.47%	0.02%
Professional school	–	0.08%	0.43%	0.01%
Bachelor's degree	–	0.10%	0.66%	0.01%
Master's or Engineer's degree	–	1.06%	6.21%	0.32%
Doctoral studies	–	0.14%	0.57%	0.07%
Total sum	24.65%	8.29%	23.56%	4.32%

	Social group of a leading household member			
Household leading member's education	**Pensioner in household without EA* members**	**Unemployed**	**Others**	**Total**
Unfinished primary education	0.19%	–	0.01%	0.21%
Primary education	7.92%	0.66%	0.18%	12.02%
Secondary education (without graduation)	15.65%	1.29%	0.49%	45.96%
Secondary education	8.48%	0.54%	0.36%	28.12%
Post-secondary education	0.45%	0.02%	0.03%	1.07%
Professional schools	0.19%	0.01%	0.02%	0.74%
Bachelor's degree	0.12%	0.02%	0.01%	0.93%
Master's degree or Engineer's degree	2.03%	0.12%	0.03%	9.78%
Doctoral studies	0.36%	–	0.01%	1.16%
Total	35.38%	2.67%	1.14%	100.00%

* economically active
Source: EU-SILC 2007, own calculation

related types of income (rewards, share in profit, extras), settlement income, enterprise income and other types of self-employment, health and retirement insurance benefits, unemployment benefits, social benefits pertaining to certain persons (parental or disability benefits) and other types of income including income of capital property, selling or different kinds of insurance[4].

The authors worked with values of an average monthly income including social transfers. A total review is presented in table III.

By transferring values from table III into the graph, a direct proportion between educational attainment and monthly income can be seen.

By connecting the income situation data and the contingency from table II, a determination summary of income and both educational attainment and the field which is the leading member involved in was obtained. The crossed analysis application enabled to obtain a wider context. The results are portrayed in table IV.

The highest average income values were reached by households of gainfully employed and higher employees' households; the graduates of doctoral studies from both groups reached the absolutely highest income level in the whole domain. There is a generally apparent direct proportion between the income level and education attainment of representatives' social groups. The only visible disturbance of this trend concerns a group of unemployed people and a group "others", since both of them are deformed regarding income activity. According to the authors' opinion, this measurement does not provide any grounds for negating this trend. As it was stated before, the lowest average income was reached by the group of unemployed respondents; the income of the university graduates was the highest.

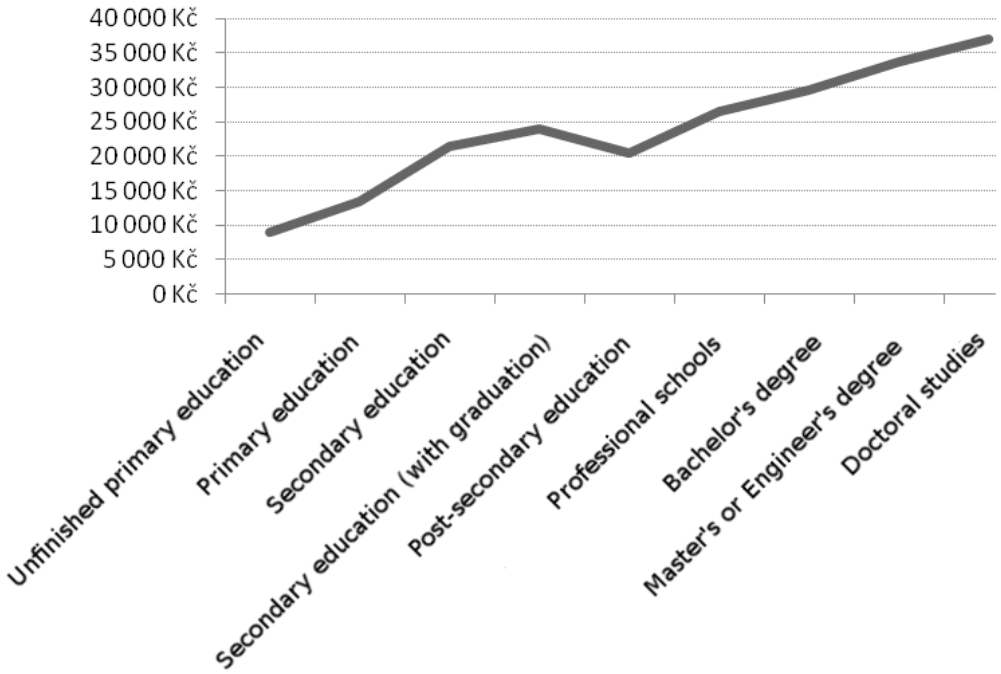
4 http://www.czso.cz/csu/2008edicniplan.nsf/p/3012-08, page. 11, cit. 6. 6. 2010.

III: *Household monthly income and its relation to a leading household member's education*

Household leading member's education	Average monthly income of households
Unfinished primary education	9 014 CZK
Primary education	13 436 CZK
Secondary education (without graduation)	21 406 CZK
Secondary education (with graduation)	23 990 CZK
Post-secondary education	20 497 CZK
Professional School	26 459 CZK
Bachelor's degree	29 603 CZK
Master's degree or Engineer's degree	33 732 CZK
Doctoral studies	37 004 CZK
Average	**22 639 CZK**

Source: EU-SILC 2007, own calculation

2: *Average monthly household income and leading household member's educational attainment*



Source: EU-SILC 2007, own calculation

DISCUSSION AND RESUME

The analyses of the article confirm validity of the preliminary thesis about determination of income situation by educational attainment. Clearly, it is not possible to present any final conclusions and this contribution is conceived by the authors as fractional arguments. A larger verification would require comparison with secondary sources and performing of more detailed analyses.

The thoughts of direct proportion between educational attainment and the amount of income based on the EU-SILC data analysis are confirmed by other sources as well. For instance according to a decile analysis performed by analysts of Regional Office Karlovy Vary of Czech Statistical Office "among 10 % of households with the highest income per person, there were 40% households with graduated leading member and 38% of households with full secondary education. In contrast, the tenth of the poorest households there were 56 % households without full secondary education (without graduation) and 19 % households had the leading member with primary education"[5]. The authors even speak about increasing impact of education for income level determination.

5 See news release ČSÚ Karlovy Vary published 31. 10. 2008, available at: http://www.kvary.czso.cz/csu/tz.nsf/i/zivotni_podminky_2007_20081031, cit. 5. 6. 2010.

IV: *Relation of household leading member's education, social group and achieved income*

	Social group of leading household member			
Household leading member's education	**Lower employee**	**Gainfully employed**	**Higher employee**	**Pensioner in household with EA* members**
Unfinished primary education	7 672 CZK	–	–	–
Primary education	20 395 CZK	26 553 CZK	–	24 467 CZK
Secondary education (without graduation)	25 574 CZK	30 264 CZK	–	26 638 CZK
Secondary education	–	37 003 CZK	27 537 CZK	30 848 CZK
Post-secondary education	–	28 256 CZK	26 563 CZK	31 199 CZK
Professional school	–	39 263 CZK	29 933 CZK	44 692 CZK
Bachelor's degree	–	37 345 CZK	31 352 CZK	39 785 CZK
Master's degree or Engineer's degree	–	43 420 CZK	38 086 CZK	31 380 CZK
Doctoral studies	–	45 120 CZK	47 668 CZK	40 067 CZK
Average	**25 004 CZK**	**34 497 CZK**	**30 937 CZK**	**27 904 CZK**

	Social group of household leading member			
Household leading member's education	**Pensioner in household without EA members**	**Unemployed**	**Others**	**Average**
Unfinished primary education	9 257 CZK	–	5 980 CZK	9 014 CZK
Primary education	10 434 CZK	10 650 CZK	13 704 CZK	13 436 CZK
Secondary education (without graduation)	13 265 CZK	13 667 CZK	16 084 CZK	21 406 CZK
Secondary education	14 019 CZK	13 131 CZK	11 077 CZK	23 990 CZK
Post-secondary education	13 258 CZK	8 140 CZK	16 090 CZK	20 497 CZK
Professional school	15 133 CZK	3 939 CZK	6 352 CZK	26 459 CZK
Bachelor's degree	17 129 CZK	15 443 CZK	8 073 CZK	29 603 CZK
Master's degree or Engineer's degree	16 731 CZK	17 917 CZK	27 346 CZK	33 732 CZK
Doctoral studies	17 351 CZK	–	3 286 CZK	37 004 CZK
Average	**13 054 CZK**	**12 941 CZK**	**13 972 CZK**	**22 639 CZK**

*economically active
– unattended
Source: EU-SILC 2007, own calculation

SOUHRN

Vzdělání jako determinanta příjmové situace spotřebitele

Článek je věnován rozboru závislosti dosaženého vzdělání jednotlivce a příjmové situace jeho domácnosti. Úvodem je předloženo stručné shrnutí sekundárních zdrojů argumentujích pro i proti tvrzení o determinaci příjmové situace vzděláním. Rozbor vstupních tezí je proveden kvantifikací výsledků projektu European Union – Statistics on Income and Living Conditions (EU-SILC). Představení metodiky a souhrnných údajů o šetření je východiskem pro samotné analýzy, které jsou postaveny na propojení zjištěných údajů o průměrných měsíčních příjmech domácností s identifikačním znakem dosaženého vzdělání vůdčího člena. Rozbory jsou dále rozšířeny kontingencí s charakteristikou sociální skupiny, tedy oblastí, v níž je vůdčí osoba nejvíce příjmově angažována.

Výsledky šetření potvrdily platnost vstupní teze závislosti, resp. přímé úměry stupně dosaženého vzdělání a výše měsíčních příjmů. Vzdělání je tedy identifikováno jako jedna z determinant příjmové situace. Autoři předjímají specifičnost zvoleného úhlu pohledu, výsledky jsou prezentovány výhradně jako dílčí argument a možný vstup do dalších šetření. Úvahy o přímé úměře mezi vzděláním a výší příjmu na základě rozborů dat EU-SILC potvrzují i další zdroje. Například dle výsledků decilové analýzy Českého statistického úřadu „mezi 10% domácností s nejvyšším čistým příjmem na osobu bylo 40 % domácností s vysokoškolsky vzdělanou osobou v čele a dalších 38 % domácností

mělo v čele osobu s úplným středoškolským vzděláním. Mezi desetinou nejchudších domácností se naopak nejčastěji (56 %) vyskytovala v čele osoba s nízkým vzděláním (bez maturity) a 19 % osob v čele mělo jen základní vzdělání“.

dosažený stupeň vzdělání, příjmy domácností, EU-SILC, determinace příjmu, sociální skupiny

Acknowledgements

This article arose as a part of research number MSM 3215648904/03/02 “The Czech Economy in the Process of Integration and Globalisation, and the Development of Agricultural Sector and the Sector of Services under the New Conditions of the Integrated European Market”, field 03 - “Development of relationships in the business sphere as connected with changes in the life style of purchasing behaviour of the Czech population and in the business environment in the course of processes of integration and globalization.”

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