Multidimensional Impacts of the Change in the Head of Household Methodology in Living Conditions Survey in Czechia

Táňa Dvornáková[1] | *Czech Statistical Office, Prague, Czechia*
Barbora Linhartová Jiřičková[2] | *Czech Statistical Office, Prague, Czechia*

Abstract

From 2023 onwards, the head of household in the Living Conditions Survey is the person with the highest income. The article analyzes the impact of this methodological change in determining the head of household in the Czech Republic's version of the EU-SILC survey. The shift from traditional criteria, such as gender or age, to identifying the head of household based on the highest income earner, has led to certain changes in the structure of households in terms of gender, age, education or economic activity. The change has resulted in an increase in female heads of households and in heads of households with higher education. This has also led to shifts in household income categorization, particularly affecting non-working and pensioner households. While income variability decreased for employee and pensioner households, it increased for the self-employed. Overall, the new methodology aims to better reflect contemporary household dynamics and aligns with broader efforts to harmonize household survey methodologies.

INTRODUCTION

The Living Conditions Survey has been conducted in Czechia as a national module of the EU-SILC (European Union – Statistics on Income and Living Conditions) survey since its admission to the

[1] Household Surveys Department, Czech Statistical Office, Na padesátém 3268/81, 100 82, Prague 10, Czechia. E-mail: tana.dvornakova@csu.gov.cz.
[2] Household Surveys Department, Czech Statistical Office, Na padesátém 3268/81, 100 82, Prague 10, Czechia. E-mail: barborajirickova@seznam.cz.

European Union (for more information about the survey see for instance Linhartová Jiřičková, Dvornáková and Vopravil, 2024). Before that, the Czech Statistical Office (CZSO) organised a similar survey called the Microcensus. The aim of the survey is to obtain data on the level and structure of income and the basic socio-demographic characteristics of households and their members, which are necessary for the analysis of income indicators. The data are obtained directly from the households' members.

The survey results relate to households. The definition of a household is based on the declaration by the persons living together that they live together permanently and jointly pay for the household's main expenses. A household is usually a family, but can also consist of several families; an individual can also form a single household (European Commission, 2023). The results of the Living Conditions Survey are weighted towards the entire population of persons living in households in Czechia. The total number of households in 2023 was 4 545.5 thousand.

Households can be classified by their social group, which is derived from the economic status of the person who is considered the head of the household. Based on the social group, the income distribution and social characteristics of the household can be observed in household surveys. The social group is determined by the economic activity of the household's head. For example, if the head of household is employed in the state or private sector, the household is classified as a household of an employee; if the head is a non-working pensioner, the household "falls" into the category of pensioner households.

This article discusses the methodology of the determination of the head of household in the Living Conditions (EU-SILC) survey and its implications. The methodology also applies to the Household Budget Survey ('Statistika rodinných účtů' in Czech) and Household Finance and Consumption Survey ('Finanční situace domácností' in Czech), due to the interconnection of the three household surveys in the Czech context. This ensures a better harmonization of the methodologies of these surveys.

1 LEGAL BASIS OF THE EU-SILC SURVEY

The Living Conditions survey is conducted in Czechia since the country's admission to the European Union. The national module of the EU-SILC survey is conducted so as to comply with EU legislation, i.e. the 1177/2003 framework Regulation and implementing regulations of the Commission. The Czech Statistical Office carries out the survey in accordance with Act No. 89/1995 concerning the state statistics service, as well as with Act No. 101/2000 regarding individual data protection (CZSO, 2023).

In 2019, a new Regulation (EU) No. 2019/1700 was adopted, as well as the implementing acts (Commission Implemeting Regulations (EU) No. 2019/2180, No. 2019/2181 and No. 2019/2242). Since 2021, this new legislation resulted in several changes in the EU-SILC methodology and data collection. National statistical institutes, including the Czech Statistical Office, are now required to implement changes together with other surveys under IESS (Integrated European Social Statistics) (European Commission, 2023: 16).

In household surveys, the definitions regarding the form and types of households, as well as the head of household, are important. According to the European Commission (i.e. Eurostat), a private household stands for a person or a group of people who live together (who are usually resident in the given dwelling) and who provide themselves with the essentials for living together (i.e. the members share the household expenses) (European Commission, 2023: 23, 37).

2 APPROACHES TO DETERMINATION OF THE HEAD OF HOUSEHOLD

Up to now, the definition used in the Living Conditions Survey outputs has been the following: the head of household is always the man (husband, partner) in a complete family, in other cases (incomplete families, non-family households) the first consideration is the existence of a parent-child relationship, where the head of household is always the parent. If there is no parent-child relationship in the household,

the next consideration for determining the person at the head is her or his economic activity, and then the amount of income of each adult. Similarly, these rules apply when determining the head of household in multi-family households.

However, it is up for debate whether this former definition is suitable or not. There are number of household typologies for dividing households into groups from different perspectives. For example, in the system of National Accounts, which focuses on sub-sectoral classification of households, the highest income of the household as a whole is taken into account. Furthermore, there are other possible approaches to the determination of the head of household in the household surveys.

This raises the question of whether to give up the traditional family model of the male breadwinner when determining the head of household in household surveys, because it is no longer self-evident. It has been pointed out that this approach based on gender and age is rooted in the traditional model of family and society and therefore has been since questioned (e.g. Kandiyoti, 1988), mainly because it may reinforce biases in survey data (Buvinić and Gupta, 1997; Chant, 2007) and can lead to inaccurate reflection of household dynamics (Kabeer, 1994). According to some, the self-identification of the head of household, although subjective, could indicate the headship (UNECE, 2011), and thus the head of household could be determined by establishing which member has more "bargaining power" in the household (Posel, 2001). Finally, a more objective criterion could be used to identify the head of the household by the so-called economic contribution approach (e.g. Katz and Stark, 1986) which determines the head of household as the member of the household who is the main contributor to the total household income. Accordingly, from 2023, household groups in the Living Conditions survey are determined by the person (aged 16 and over) with the highest income compared to the other members of their household.

3 METHODOLOGY

The highest income of a person was calculated by combining the income from main and secondary employment including other related income (such as remuneration, shares or additional allowances), income from agreements (contracts), income from business and other self-employment, sickness and pension insurance benefits, unemployment benefits, social benefits intended for specific persons (e.g. parental allowance, care allowance or one-off and recurrent benefits for the disabled) and other income from capital assets, sale of surpluses from own self-production, life insurance and pension fund. In addition, the share of income attributable to the household was added to the above income. These were mainly received cash transfers, state social assistance benefits and rental income.

4 CHARACTERISTICS OF HOUSEHOLD HEADS

The introduction of a new methodology to determine the head of household has brought some changes compared to the former definition, and can be observed in more detail in terms of classifying households according to various demographic or socio-economic characteristics of the head of household.

4.1 Demographic characteristics

Firstly, we can compare the frequency of the head of household by sex. Naturally, with the new definition, the number of women in the head of household role should increase. Table 1 shows that the situation where a woman replaced a man in this role occurred in 518 166 households. These were mostly households where according to the former definition a woman could not be the head of household, i.e. "pure" or "mixed" complete families. In pure complete families, either a childless couple or a couple with children live together. A mixed complete family is made up of a couple living with another member of the household (e.g. mother-in-law, grandfather or grandchild) or a couple with children where one of the children is economically active. The opposite case, where the female head of the household was

replaced by a male, occurred in only 25 302 households, and these were mainly households of mixed single-parent families with children. The situation where there was no change in the sex of the head of household occurred in 88.0% of households.

Table 1 Comparison of head of household frequencies by sex (2023)

		New head of hh		
		Male	**Female**	**Total**
Former head of hh	Male	2 842 754	518 166	3 360 920
	Female	25 302	1 159 267	1 184 569
	Total	2 868 057	1 677 432	4 545 489

Note: hh = household.
Source: CZSO, SILC 2023, own calculation

With the new definition of head of household, a certain rejuvenation took place in terms of the distribution of households according to the head of household's age. The highest number of households has decreased in the category where the head of household is over 70 years old. On the contrary, there has been an increase in younger heads of households. This has mainly occurred in households where older parents live with an already working offspring whose income is higher than theirs. However, unchanging age category of head of household was recorded in 92.1% of households.

Table 2 Comparison of head of household frequencies by age (2023)

		New head of hh					
		Up to 39	**40–49**	**50–59**	**60–69**	**70 or more**	**Total**
Former head of hh	Up to 39	916 435	12 838	1 678	5 650	1 426	926 079
	40–49	34 638	925 764	9 703	2 020	1 512	973 637
	50–59	54 916	37 308	729 781	5 901	5 578	833 485
	60–69	23 685	15 252	43 054	685 935	6 002	773 927
	70 or more	9 317	18 340	15 889	33 985	960 831	1 038 362
	Total	1 027 042	1 009 502	800 105	733 492	975 348	4 545 489

Source: CZSO, SILC 2023, own calculation

4.2 Socio-economic characteristics

There is a slight shift towards higher level of education in the distribution of households according to the education of the head of household. This is related to the close correlation between income and education, i.e. higher education is associated with higher wages. In absolute numbers, there are now almost 100 000 more households with a person with a university degree as their head. In 92.4% of households, the head of household had the same education as before the methodological change took place.

Elementary education stands for a successfully completed primary school or lower secondary education. *Secondary* education includes upper secondary education, as well as other follow-up types of education, e.g. post-secondary vocational school. *University* education refers to a successfully completed undergraduate (bachelor's) or postgraduate (master's or doctoral) degrees.

Table 3 Comparison of head of household frequencies by education (2023)

		New head of hh			
		Elementary	Secondary	University	Total
Former head of hh	Elementary	1 804 822	137 127	58 630	2 000 578
	Secondary	40 534	1 488 925	73 611	1 603 070
	University	7 416	27 501	906 924	941 841
	Total	1 852 771	1 653 553	1 039 165	4 545 489

Source: CZSO, SILC 2023, own calculation

Another interesting characteristic of persons when comparing the new and the old methodology regarding the head of household is their economic status. When broken down by those who are employed or in business and those who are not working (students, retired, homemakers and other inactive persons), there was no change in 95.7% of cases. However, in the cases when there was a change, there was a shift in status from non-working to working. This occurred in about 170 000 households where the original economically inactive person at the head - most often a pensioner – was replaced by an economically active person with a higher income.

Table 4 Comparison of head of household frequencies by economic activity (2023)

		New head of hh		
		Employed	Not employed	Total
Former head of hh	Employed	2 836 560	27 111	2 863 671
	Not employed	169 814	1 512 004	1 681 818
	Total	3 006 374	1 539 115	4 545 489

Source: CZSO, SILC 2023, own calculation

Following the change in the definition of the head of household in the Living Conditions Survey, it is necessary to analyse the impact of this change on the classification of households according to the economic activity of the head of household. A significant change has occurred in households where a pensioner is the head. Previously, pensioner households were broken down into two categories: a pensioner household with active (working) members and a pensioner household without active (working) members. This was because income and other outcomes for pensioner households in total were influenced by younger economically active members. Pensioner households with no working members were not influenced by other economically active members and usually contained one or two older persons. The average age of persons in these households was higher than that of a retired household with working members.

Table 5 shows the number of households according to the head of household's economic status. The number of pensioner households with economically active members has declined by almost 120 thousand households in absolute terms, leaving only 63 thousand households in this type of household, where some other persons can still be economically active, but their personal income is lower than that of a non-working pensioner. Most of these households have newly moved into the "employed" category. Thus, if we now assess the income situation according to the position of the head of household, there

is no need to further divide pensioner households. The merging of these two categories in the breakdown according to the status of the head of household occurs from 2023 onwards. Other shifts between these groups were rare, with an unchanging situation in 95.6% cases.

Table 5 Comparison of head of household frequencies by status (2023)

		New head of hh				
		Employed	**Pensioner with AM**	**Pensioner without AM**	**Other**	**Total**
Former head of hh	Employed	2 836 560	25 705	0	1 406	2 863 671
	Pensioner with AM	142 730	36 955	0	0	179 686
	Pensioner without AM	0	0	1 354 373	2 435	1 356 807
	Other	27 083	0	2 139	116 103	145 325
	Total	3 006 374	62 660	1 356 512	119 944	4 545 489

Note: AM = active members, other = unemployed or inactive persons.
Source: CZSO, SILC 2023, own calculation

Table 6 focuses on employed persons break down. Firstly, there are households of the employed where the head of the household is in employment or holds a position to which she or he was elected or appointed. This group is further subdivided into households of workers with lower education (where the head of household has elementary level of education) and higher education (where the head had completed full (upper) secondary education or higher). Secondly, there are households of the self-employed. Following the change in the head of household methodology according to his or her highest income, the number of households in the group of employees with higher education has increased, corresponding to the rise in the number of university-educated heads of household.

Table 6 Comparison of head of household frequencies by status – employed households (2023)

		New head of hh				
		Employees with lower education	**Employees with higher education**	**Self-employed**	**Other**	**Total**
Former head of hh	Employees with lower education	723 003	12 346	83 009	12 787	831 146
	Employees with higher education	10 475	491 102	75 073	6 846	583 496
	Self-employed	17 007	5 285	1 419 259	7 478	1 449 029
	Other	68 125	14 854	86 835	1 512 004	1 681 818
	Total	818 610	523 587	1 664 177	1 539 115	4 545 489

Note: Other = pensioner, unemployed or inactive persons.
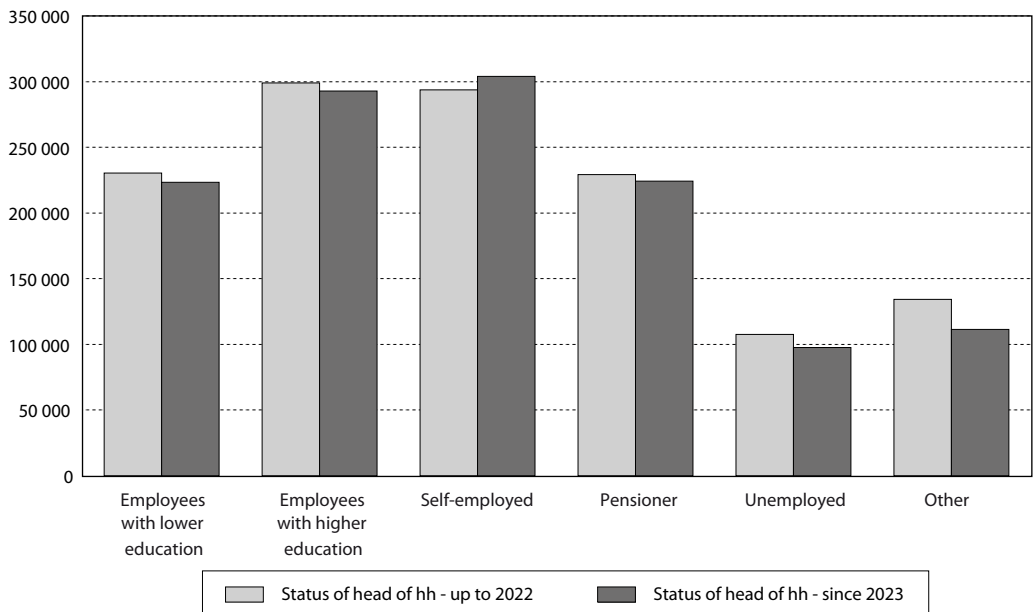**Source:** CZSO, SILC 2023, own calculation

5 INCOME DISTRIBUTION

Figure 1 shows the impact of the change in the head of household on the average net income of the household, broken down by head of household's status. The most significant changes were observed for the groups of unemployed and households of other inactive persons. Average net income showed

the largest decline here, with a 9.3% decrease for unemployed households and a 17.0% decrease for other households which means households with inactive persons caring for household members in need of care, persons living on property income and others. This is due to the fact that persons with this economic activity were not exceeded by another person in terms of personal income.

For unemployed and other non-working households, which had higher average incomes because another person in the household might have been working, total average net incomes have decreased. For instance, this concerned households consisting of a couple where the man was unemployed and his partner (a woman) was employed; this household was originally in the unemployed group and has now moved into the employed group. However, this change has resulted in an outflow of (relatively lower) incomes from the unemployed household group to the employed household group and, thus, contributed to the reduction in the average income of the employed household group. The only group whose income has not diminished as a result of the methodological change were the households of the self-employed.

Figure 1 Average annual net household income per person by the status of the head of household (2023)

Source: CZSO, SILC 2023, own calculation

This is illustrated by Figure 2, which shows the structure of gross income by the status of the head of household. The significantly represented group of employee households showed a slight increase in income from other sources than employment. The share of social income increased for the group of households of employees with lower education, resulting in a decrease in the overall average income for this group. In contrast, households whose head was a self-employed person saw an increase in the share of income from their business. Pensioner households had the highest share of social income in gross household income, increasing from 81.8% to 90.4% at the expense of income from employment. The decline in the share of income from employment is also significant in the groups where the head of household is unemployed and in other inactive households. This, once again, explains the decline in average incomes for these groups of households.

Figure 2 Structure of gross income by the status of the head of household (2023)
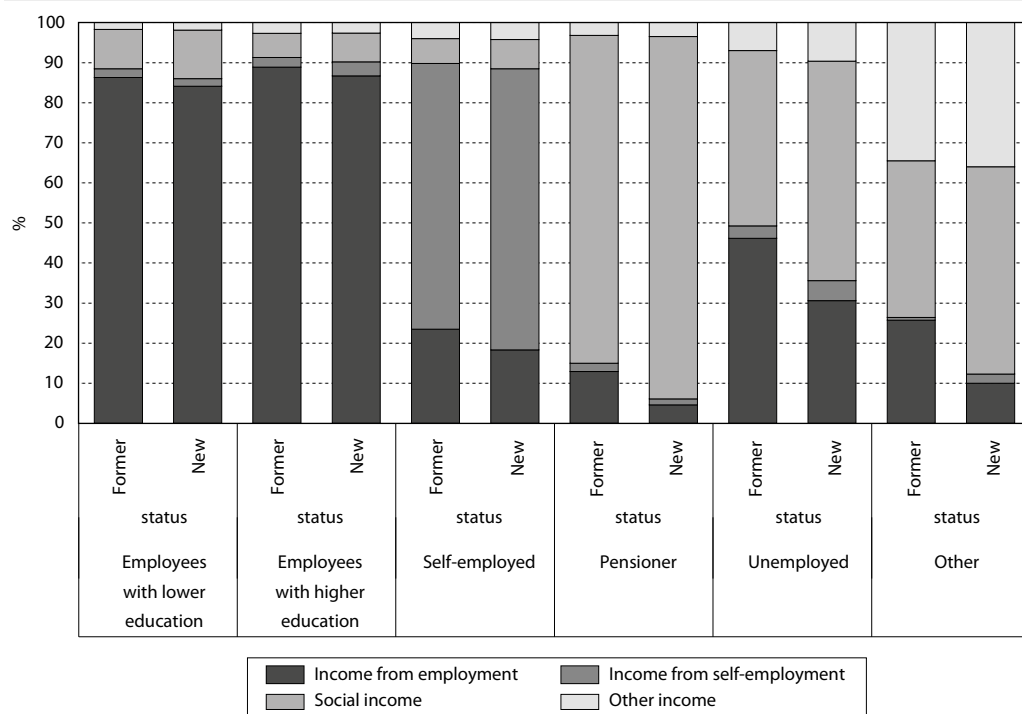
Source: CZSO, SILC 2023, own calculation

5.1 Income variability

The conclusions stated above can be confirmed when income variability, i.e. the difference between the lowest and highest incomes, is taken into account. It is particularly useful to analyse how the income differentiation across household groups has changed according to the head of household status after the adjustment of its definition. Within the different household groups – according to the new definition of head of household – the income differentiation of the household groups of employees and pensioners has decreased. Contrarily, there was an increase in income differentiation among self-employed households, mainly due to a rise in the number of households in the higher income brackets.

Table 7 shows the comparison of income variability rates before and after the methodological change in the head of household, using various indicators. Coefficient of variation, which indicates the relative importance of the average deviation from the average net income per person, has decreased for all observed household groups (except for the households of self-employed), most notably for pensioners. The median net income, which indicates the value which is exactly in the middle of the ranked income levels per person, has increased in households of self-employed, while it has decreased in other observed groups.

The Gini coefficient is calculated from the entire population, where persons are put in ascending order according to the per capita income. It expresses the relationship between the cumulative share of the number of persons and the cumulative share of their income. It ranges from 0 to 1, with the higher the value the greater the income inequality (in the table it is shown in percentages). Due to the change in the definition of the head of household, the value of the indicator has dropped most notably for the households of pensioners, followed by the households of employees with higher education. For the self-employed, the value has slightly increased.

The income inequality coefficient shows the quintile share ratio (S80/S20) which is defined as the ratio of the income per capita of the highest 20% of income earners (i.e. the 5th quintile) to the income per capita of the lowest 20% of income earners (1st quintile). A higher value of the coefficient indicates a higher income differentiation.

Table 7 Comparison of income variability rates according to the former and new definition of the head of household (2023)

Household groups according to the former definition of the head of household	Coefficient of variation	Median income per capita	GINI	S80/S20
Employees with lower education	40.22	246 050	21.94	3.03
Employees with higher education	53.90	303 879	26.32	3.77
Self-employed	64.20	282 344	30.18	4.62
Pensioners	33.69	221 956	15.79	2.18
Household groups according to the new definition of the head of household	Coefficient of variation	Median income per capita	GINI	S80/S20
Employees with lower education	40.09	239 385	21.84	3.02
Employees with higher education	52.56	298 964	25.75	3.69
Self-employed	64.74	293 414	30.65	4.78
Pensioners	32.80	218 596	14.92	2.12

Source: CZSO, SILC 2023, own calculation

The impact on the income distribution of the average net monthly household income per person regarding the change in the head of household definition was not significant. Figure 3 shows the distribution of average net income for households of lower and higher educated employees, the self-employed households and the households of pensioners. For the employed households, the most common income reached between 20 and 30 thousand CZK per month. Pensioner households were most concentrated in the 15 to 20 thousand CZK per month income group.
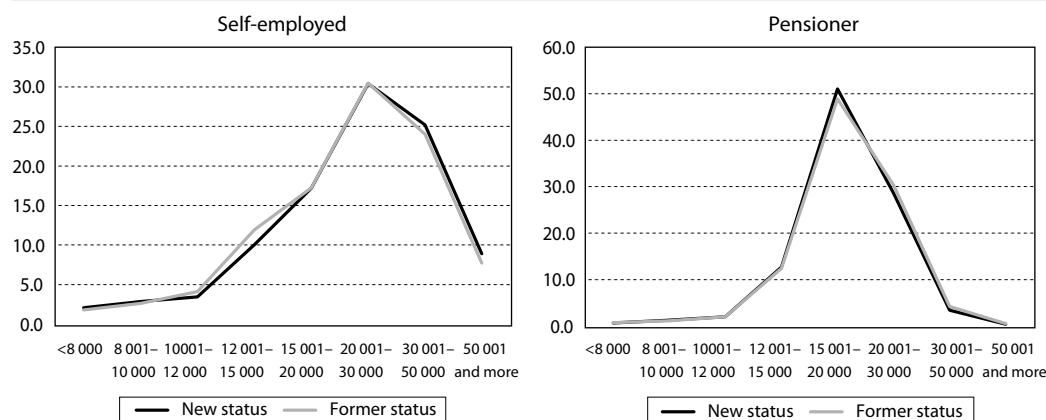
Figure 3 Average net income per month by the status of the head of household (2023)
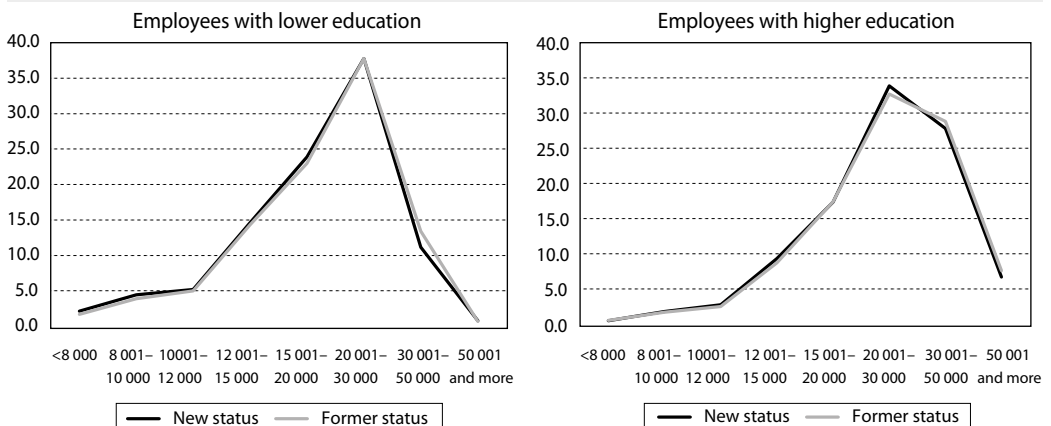
Source: CZSO, SILC 2023, own calculation

Figure 3 (continuation)

Source: CZSO, SILC 2023, own calculation

CONCLUSION

The article presents a detailed analysis of the methodological changes in determining the head of household in the Czech Republic's 2023 Living Conditions Survey, which is the national module of the EU-SILC survey. Furthermore, the changes concern the related Household Budget Survey and the Household Finance and Consumption Survey, from the same year onwards, too. Therefore, when the data are available, the effects of the methodological change can be assessed in relation to consumption and assests surveys, too. The key change involves defining the head of household based on the highest income earner, rather than traditional criteria like gender or age. Previously, the head of household was typically the male partner in families or the parent in single-parent households. The new methodology shifts to a more objective criterion, identifying the head based on the highest income among household members aged 16 and over.

The new methodology resulted in more women being identified as the head of household in 518 166 households. Conversely, only 25 000 households saw a male replacing a female head. There has been an increase in heads of households with higher education, correlating with the higher income levels typically associated with advanced education. The change resulted in a shift from non-working (often pensioner) heads of households to economically active heads, affecting approximately 170 000 households. Furthermore, the new methodology led to shifts in income categorization, particularly affecting the average net incomes of households with unemployed (non-working) heads, which generally saw a decline. The change reduced income variability within employee and pensioner households but increased it among self-employed households, reflecting the broader income range within this group. Overall, the distribution of average net monthly income per person was not significantly altered by the change, though specific household groups experienced noticeable shifts.

It can be argued that the new methodology for determining the head of household in the Living Conditions Survey in the Czech Republic represents a significant shift which aims to better reflect contemporary household income dynamics. It also corresponds with the broader goal of harmonizing methodologies across similar surveys in the country and in the European Union.

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