

## Enduring inequality: long-term trends and factors in participation in adult education and learning among older adults

Jan Kalenda & Ilona Kočvarová

To cite this article: Jan Kalenda & Ilona Kočvarová (2022): Enduring inequality: long-term trends and factors in participation in adult education and learning among older adults, *Gerontology & Geriatrics Education*, DOI: [10.1080/02701960.2022.2156866](https://doi.org/10.1080/02701960.2022.2156866)

To link to this article: <https://doi.org/10.1080/02701960.2022.2156866>



© 2023 The Author(s). Published with license by Taylor & Francis Group, LLC.



Published online: 13 Dec 2022.



Submit your article to this journal [↗](#)



Article views: 8



View related articles [↗](#)



View Crossmark data [↗](#)

# Enduring inequality: long-term trends and factors in participation in adult education and learning among older adults

Jan Kalenda and Ilona Kočvarová 

Faculty of Humanities, Research Centre of FHS, Tomas Bata University, Zlín, Czech Republic

## ABSTRACT

Non-formal adult education and learning (NAE) is widely recognized as enhancing the quality of life and promoting active aging. Despite the empirically demonstrated benefits, older adults rank among one of the populations participating the least in NAE. Although several studies have highlighted the negative effect of aging on involvement in NAE, factors causing long-term changes in participation have not been explored directly. As a result, the significance of microsocial characteristics and their transformation over time has been overlooked. This article explores key microsocial factors leading to non/participation in NAE among adults aged 50 to 69 years along with changes in these factors for the 14-year period of 2006 to 2019. The research was conducted using the Czech Republic's Labor Force Survey dataset (N = 114,345). The results show that all microsocial factors play an essential role in determining participation in NAE, thus a strong relationship between the social origins (cumulative disadvantage) of older adults and their participation was confirmed. In addition, the impact of most factors has proved consistent over time, not strengthening since 2009. One exception was level of education, which showed a rapid increase in participation in NAE in the respondents who identified themselves as low-educated.



## KEYWORDS

Non-formal adult education and learning; older adults; participation in organized learning; educational inequality

## Introduction

For the past few decades non-formal adult education and learning (NAE) for older adults has been attracting greater degree of attention. NAE has been shown to profoundly influence the adaptability of the aging workforce to the changes in the labor market as well as otherwise enhance the quality of life of older adults. The role of NAE has become even more critical recently, as the elderly face rising demands accompanying the higher complexity of everyday experiences (Findesen et al., 2018) as well as new challenges using online services (Rochas, 2021). Compounding the issue are the health measures and societal restrictions brought by life in the “COVID-19 era” (Heid, Cartwright, Wilson-Genderson, Pruchno, & Meeks, 2021; Radwan, Radwan, & Radwan, 2021).

In this article, NAE will be defined according to ISCED 2011 as an organized type of adult education and training outside the formal educational system that usually does not result in official certification. This type of adult learning includes all planned and

**CONTACT** Jan Kalenda  kalenda@utb.cz  Faculty of Humanities, Research Centre of FHS, Tomas Bata University, nám. T. G. Masaryka, Zlín 5555, 760 01, Czech Republic

© 2023 The Author(s). Published with license by Taylor & Francis Group, LLC.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

intentional development activities such as workshops, private tuitions, courses as well as guided on-the-job training. In keeping with this definition, NAE includes both job-related (vocational) and non-job-related learning (UNESCO, 2020).

Decades of research results have shown many benefits from this type of lifelong learning. NAE helps promote higher social engagement among older adults (Jamieson, 2007; Yamashita, López, Keene, & Kinney, 2015; Yamashita, López, Soligo, & Keene, 2017). It fosters well-being (Green, Iparraguirre, Davidson, Rossall, & Zaidi, 2017) as well as job retention and employability (Desjardins, Olsen, & Midtsundstad, 2019; Midtsundstad & Nielsen, 2019). NAE improves the older population's cognitive skills (Davey, 2002), even mitigating cognitive decline (Desjardins & Warnke, 2011), and it has been shown to enhance overall health (Istance, 2015). For all of these reasons, participation in NAE has come to take a crucial position in the implementation of policies supporting the ICAA's Nine Principles of Active Aging (Cedefop, 2012; Desjardins, 2019; Schuller, 2019).

Although NAE has been emphasized as a beneficial activity in scholarly literature and many policy documents (Cedefop, 2012; OECD, 2017; UNESCO, 2020), participation rates among older learners have remained one of the lowest of any demographic. According to data from the European Labor Force Survey (LFS) from 2019 (Eurostat, 2021), only 6.2% of adults over 55 years of age and 2.9% over 65 participated in any form of organized learning in the four-week period before the survey was completed. Moreover, according to other international comparative surveys conducted in OECD countries in the last two decades (AES – Adult Education Survey; PIAAC – Programme for the International Assessment of Adult Competencies), participation levels among older adults remained at one-fourth to one-fifth of the participation rates of people aged 25 to 44 years (Desjardins, 2020; Desjardins, Rubenson, & Milana, 2006). Table 1 below shows a general long-term overview of the development of the participation in NAE among different groups of adults in EU countries in the fifteen years before the onset of governmental measures instituted at the beginning of 2020 in relation to COVID-19 pandemic. In summary, older adults have a higher inequality in accessing adult education opportunities and have more difficulties enjoying the benefits of NAE.”

Reasons for the low participation of older adults in NAE are complex, with deep connections to the general structural inequality of educational opportunities (Cabus, Ilieva-Trichkova, & Štefánik, 2020; Cincinnato, De Wever, Van Keer, & Valcke, 2016). On the one hand, the low involvement is related to structural conditions which typically affect various types of institutions within which it is difficult to access educational opportunities (Cross, 1981; Rubenson et al., 2018). On the other, the older population's involvement in continuous learning could be negatively affected by the attitudes and motivation of these adults to

**Table 1.** Development of participation in adult education in EU countries: 2006 to 2019.

	2006	2010	2015	2019	Change 2006 to 2019*
18 to 64 years	16.0	14.3	16.2	16.8	+0.8
25 to 64 years	7.6	7.8	10.1	10.8	+3.2
55 to 64 years	3.0	3.4	5.4	6.2	+3.2
65 to 74 years	1.6	2.0	2.8	2.9	+1.3

Data in percent; participation measured as involvement in all adult education activities in 4 weeks prior to survey. Participation calculated together in both formal and non-formal education. Average for 27 EU countries. \*Change in percentage points. Source: Labor Force Survey (Eurostat, 2021).

engage in further organized learning. These factors have been labeled by previous literature as “dispositional” (Cross, 1981) or “psychosocial” (Darkenwald & Merriam, 1982) barriers to participation. While the concept of dispositional barriers is understood as perceived constraints that adults internalize within themselves and therefore dispose of them to a particular behavior, the definition of psychosocial barriers adds to such a concept a dimension of social origins. These barriers are always formed within particular social settings and are transmitted through socialization.

Institutional factors are usually situated at the macro-social level (Sztompka, 1993) and are primarily connected with the supply of learning opportunities and external support for learners such as the provision of information, financial subsidies and other social services (Boeren, 2016; Cabus, Ilieva-Trichkova, & Štefánik, 2020; Desjardins & Ioannidou, 2020). In this context, senior OECD analyst David Istance (2019) has recently affirmed that older adults do not receive enough institutional assistance and support, despite the fact that the importance of NAE in contemporary societies has been broadly recognized.

More than forty years ago, Cross (1981) outlined a number of factors that even today often become barriers that hinder participation in NAE. To begin with, the lack of encouragement and promotion of NAE is typical in both (1) the private sector, where the central part of organized learning for adults is realized through job-related training, and (2) the public sector, which has traditionally been responsible for regulating the supply of NAE and implementing tools for its availability and openness (Desjardin, 2017; Desjardins & Ioannidou, 2020). In addition, the motivation of individuals and the cultural meaning of learning may play an important role. If the attitudes of adults toward NAE are negative or if they doubt the rationality of these programmes, they tend not to participate, while they do partake in NAE when their attitudes are positive and when clear benefits are anticipated (Darkenwald & Merriam, 1982; Kyndt, Govaerts, Keunen, & Dochy, 2013).

Institutional and individual factors represent two sides of the same coin, since they closely interact with various microsocial characteristics such as gender, age, economic status as well as level of education (Rubenson & Desjardins, 2009). Interactions among these factors can increase or decrease the chances that institutional or psychosocial factors will lead adults to participate in NAE (Boeren, 2016). In this regard, they can strengthen (dis)advantage of some social groups to adult education access.

Despite these findings, however, we still do not have detailed, comprehensive data describing the effect of individual microsocial characteristics and their long-term changes in older adults, not to mention findings regarding the interconnection of these factors. Though many researchers (Boeren, 2016; Cabus, Ilieva-Trichkova, & Štefánik, 2020; Desjardins, Rubenson, & Milana, 2006; Lee & Desjardins, 2019; Rubenson et al., 2018) have highlighted the negative effect of a number of microsocial characteristics on participation in NAE, the significance of these characteristics in older age cohorts has not been investigated directly. For example, only few researchers addressed them in the context of typical participants of educational programmes for older adults (Hansen & Brady, 2016; Yamashita, López, Keene, & Kinney, 2015). Further, the transformation of these patterns over a longer timeframe has also not been studied. As a result, as has been proposed by Istance (2019), not enough findings have been compiled with regard to factors influencing participation among older adults aged 50 to 69 years, nor whether these factors have endured or weakened during recent decades and so increased disadvantage of older adults.

## Study aim

Based on the precepts put forth in the previous discussion, our research set out to determine microsocial factors of participation among older adults in NAE as well as measure long-term changes in these factors during the 14-year period of 2006 to 2019. To this end, two interrelated research questions were formulated and investigated:

- (1) What is the impact of gender, age, education level and economic status on participation in the NAE among older adults?
- (2) How does the significance of these factors change over time (in our case, from 2006 to 2019)? Is participation inequality based on these factors enduring or disappearing?

Regarding the microsocial factors, we explored variables that have shown the highest predictability of participation among the younger to middle-aged population (25 to 44 years) according to the current body of knowledge (e.g., Boeren, 2016; Desjardin, 2017, 2020; Lee & Desjardins, 2019; Rubenson et al., 2018). Further, long-term changes were explored through the lens of social change theory (Chen, 2015; Sztompka, 1993), through which the impact of the institutional settings and how they can transform everyday life attitudes and behaviors can be investigated. For this purpose, we chose to analyze the significance of microsocial factors within three different periods in which macrosocial conditions in the Czech Republic changed over the last two decades:

- (1) the pre-economic crisis period (2006 to 2010)
- (2) the economic crisis period (2011 to 2014)
- (3) the post-economic crisis or “recovery” period (2015 to 2019)

With this approach, we sought to more readily identify whether the impact of microsocial variables changes over time as well as how the level of educational inequality transformed among older adults.

As used in this article, the term *older adults* refers to age cohorts of adults over 50 years of age. Unlike many previous studies (e.g., Barrett & Riddell, 2016; Chisholm, Larson, & Mosseux, 2004; Desjardins & Warnke, 2011; Desjardins, 2019; Midtsundstad & Nielsen, 2019), we did not limit our research sample to those under the age of 65 (a traditional marker of retirement in the EU), but older individuals were also examined. More precisely, in line with an argument of Schuller and Watson (2009), we did not distinguish respondents merely according to their retirement status, but used broader categories (50 plus), and we also focused on adults up to 69 years. The goal of this operationalization was to help us cover varied learning opportunities that older adults may have in the labor market in terms of NAE both as job-related as well as later, post-retirement, during which non-job-related learning generally prevails.

## Conceptual approach, theoretical perspective and hypothesis

Most research on participation in NAE has focused on identifying critical microsocial variables which influence the involvement of adults aged 25 to 64 years in adult education. Within the past few years, based on numerous studies (e.g., Boeren, 2016, 2019; Cabus,

Ilieva-Trichkova, & Štefánik, 2020; Desjardin, 2017, 2020; Lee & Desjardins, 2019; Rubenson et al., 2018) a broad consensus has been reached on the most important primary factors: education level, socioeconomic status, age and gender.

### **Education**

Attained level of education is probably the most corroborated variable determining participation in NAE (e.g., Cincinnato, De Wever, Van Keer, & Valcke, 2016; Desjardins, 2020; Van Nieuwenhove & De Wever, 2021). The higher level of education a person has, the more probable it is that he/she will participate in NAE. This is an example of what has been called the “Matthew effect” (Desjardins & Ioannidou, 2020) and can also be considered as an example of the cumulative advantage principle (DiPrete & Eirich, 2006).

In addition, for older adults who already have a higher level of education, it is easier to find new learning opportunities, since these individuals are better oriented in the educational environment as well as more conscious about the possible benefits of learning (Rubenson et al., 2018). Furthermore, this population is also superiorly prepared for learning, as their self-efficacy is usually higher (Boeren, 2016). Moreover, according to Hansen and Brady (2016) report, university graduates contain more than 80% of participants in many USA NFA study programmes for older adults. Finally, they are more motivated to further learning because their attitudes toward NAE are generally more positive, and they can more easily use newly acquired skills and knowledge in their lives (Kyndt, Govaerts, Keunen, & Dochy, 2013; Yamashita, López, Keene, & Kinney, 2015; Yamashita, López, Soligo, & Keene, 2017). Based on these findings, we formulated the first hypotheses (H1) concerning older adults:

**H1: The participation of older adults in NAE increases with increasing levels of education.**

### **Economic status**

Another key factor found to profoundly affect the inclusion of adults into NAE is economic status, in many cases affected by the so-called “long arm of work” (Rubenson et al., 2018, p. 348). Adults integrated into the labor market receive more educational opportunities than those outside the world of work, thus this population has a higher chance to participate in NAE. The strength of this mechanism lies in the predominant orientation of contemporary lifelong learning, which mainly focuses on job-related training and the direct use of the acquired skills and knowledge in the work environment (Desjardins & Ioannidou, 2020; Desjardins, 2020).

In this case, the situation of older adults is more complicated than that of younger populations. Many empirical studies (e.g., Albert, García-Serrano, & Hernanz, 2010; Desjardins, Olsen, & Midsundstad, 2019) have revealed that the older employees are, the less willing the employer is to develop their skills and invest in their education and training. For example, Hämäläinen et al. (2015) found that employers are more likely to adopt new digital technologies with younger workers than with older employees. In addition, older adults also tend to invest less time and money in work-related learning (Boeren, 2019).

Consequently, job-related education and training tend to be less available for employees over 50 years who are closer to retirement, as investment in the development of their skills is seen as less profitable by both companies and the individuals themselves. This perspective led to the formulation of the following hypothesis (H2):

**H2: Older adults, employed or self-employed, have a higher participation rate in NAE than do older adults who are retired.**

### **Age**

Older adults indicate more barriers to participation regarding their health status and mobility (Boeren, 2016). However, it is not merely the emergence of these limitations that decreases the number of participants, but also a shift in value orientation, social role and expectations about the future, all of which intensively intervene in this population's decision-making about participation in NAE. According to Findsen and Formosa (2011; see also Golding & Kimberley, 2016), the perception of having the status of an older adult redirects focus from a goal-oriented materialistic orientation, work-related roles and active involvement in civic society. Instead, a value shift is made toward post-materialistic, leisure-time, and more family-oriented roles which decrease opportunities to be involved in NAE. Nevertheless, Schmidt-Hertha and Rees (2017) has argued that this outcome is more common for absolute participation in NAE and learning activities connected with job-related education, not for non-job-related NAE. According to research by Tippelt et al. (2009), there are no significant differences in terms of the age of older adults with regard to participation in NAE based on non-job-related reasons.

These age-related mechanisms led us to the formulation of the next hypothesis (H3):

**H3: A lower participation in NAE occurs as the age of older adults increases.**

### **Gender**

The position of gender with regard to participation in NAE is the primary factor least empirically established, with studies reporting contradictory findings. While some researchers (Blais, Duqueite, & Painchaud, 1989; Desjardins, Rubenson, & Milana, 2006; Hansen & Brady, 2016) have found significant differences between men and women favoring man's participation, other authors (Boeren, 2011; Dämmrich, Kosyakova, & Blossfeld, 2015) have not identified such differences.

Inconsistencies with regard to these results can be explained in terms of the varying foci of the studies. Differing combinations of variables have been investigated, i.e. various types or subtypes of NAE such as formal versus non-formal educational activities, and job-related versus non-job-related activities, etc. Still, at least two trends can be tracked: women seem to have a higher chance of participating in formal education and non-job-related training (Boeren, 2011; DiPrete & Buchmann, 2006), while men predominate in non-formal education and job-related training (Dämmrich, Kosyakova, & Blossfeld, 2015; Vaculíková, Kalenda, & Kočvarová, 2020). Thus we can expect women to participate more than men

after retirement, a period when non-job-related and non-formal education usually prevails (Cedefop, 2012; Findesen et al., 2018). Based on this assumption, the following hypothesis (H4) was formulated:

**H4: In older adults, women participate more in NAE than do men.**

### ***The impact of social change on microsocial factors***

The impact of long-term social change on the participation pattern in NAE is understood in this article as the effects of different periods on the significance of microsocial factors (Chen, 2015; Sztompka, 1993). In this regard, we distinguish three periods, each characterized by a unique combination of (1) socioeconomic dynamics and (2) interventions by public administration. Both of these critical factors can mitigate the effects of microsocial determinants on participation in NAE (Desjardin, 2017; Desjardins & Ioannidou, 2020). The first is related to private sector investment into NAE, which can enhance overall participation, especially in job-related education and training (Albert, García-Serrano, & Hernanz, 2010; Boeren, 2019; Rubenson et al., 2018). In this regard, the private sector can positively affect the number of adults in pre-retirement age in NAE. The second is based on the state's welfare policy measures to support potential learners before their retirement (e.g., through programs for the aging workforce), especially those who require more economic aid or informational support. Furthermore, state interventions can also positively influence the number of older adults who participate in NAE after retirement through specific welfare tools related to elderly care (e.g., the level of pension, supply of educational opportunities via universities of the third age, information services).

Given these points and in line with the current body of literature (Kalenda, Kočvarová, & Vaculíková, 2020; Kopecký & Šerák, 2015) on NAE development and policy in the Czech Republic, we have defined three periods, each with a unique pattern of structural features:

- (1) the pre-economic crisis period (2006 to 2010) characterized by medium private investment into NAE, low state support of job-oriented adult education and conservative welfare social policy
- (2) the economic crisis period (2011 to 2014) accompanied by decreased private investment into NAE, intensive state intervention via active labor market policy and the continuation of conservative welfare policy
- (3) the post-economic crisis or “recovery” period (2015 to 2019) typified by the rise of private incentives, liberalization of state welfare policy and high growth of spending on pensions

Based on all these features, we formulated the following three hypotheses (H5 to H7) concerning the significance of microsocial variables in these past periods:

**H5: During the economic crisis period, the participation in NAE increased among those with a low level of education (ISCED 3c or lower).**



**H6: During the economic crisis period, the participation in NAE increased among those active in the labor market.**

**H7: After the economic crisis, the participation in NAE increased in the older age cohort (60 to 69 years) of adults.**

## Research methodology

Secondary data analysis based on information from the European Labor Force Survey 2006 – 2019 was used in this study. Two levels of analysis were employed – (1) microsocial variables influencing the involvement in NAE, and (2) the effect of the three different time periods on the significance of these variables. In the first step we determined essential descriptive characteristics of the research sample along with participation parameters that helped us determine the main trends. In the second step our hypotheses were tested using statistical modeling. Due to the binomial nature of the dependent variable, a binary logistic regression was applied in the testing. Subsequently, this procedure was used to investigate each period's effect on the significance of variables, applying the interaction effects into the regression model.

## Data and variables

The European Labor Force Survey (LFS) data set for the Czech Republic from 2006 to 2019 was used in the analysis. The default dataset consists of a representative random sample of the adult population aged over 18 years. In the LFS, data collection is performed every year in regular quarter intervals. In the Czech Republic the data is collected by the Czech Office for National Statistics, which also provided information for the years we analyzed. As changes were made in the LFS questionnaire in 2006, we did not work with datasets collected before that year.

Although the data reflect respondents with an unlimited age range (up to 104 years), the complete variables necessary for testing all the hypotheses were available only for the participants aged up to 69 years. Thus since data from most of the older respondents were missing many values, we limited our analysis to individuals of 50 to 69 years of age.

Our main dependent variable is represented by participation in NAE in the four-week period before the survey was completed, while the crucial independent variables are: gender (women/men), age (50 to 59 years/60 to 69 years), level of education (ISCED 3c and lower/ISCED 3ab/ISCED 6–8), and socioeconomic status where we distinguish two subcategories: working adults (employed or self-employed) and individuals in retirement. Other categories (unemployed, on maternity leave, in the household or other) are not included in our analysis due to their low occurrence in the data for this age cohort.

We worked with data from individual respondents (not households) as the primary research unit in all the analyses. In this regard, it must be noted that each respondent could have been included up to five times consecutively in the quarterly waves of the survey, which can impact the representativeness of the data and usage of regression analysis. Since identifying such respondents is possible only after the collection year 2011, we decided to include respondents for every odd year and in the second quarter of data collection. This

**Table 2.** Characteristics of the research sample.

	Year (total n)													
	2007 (17 272)		2009 (16 687)		2011 (16 185)		2013 (16 164)		2015 (15 475)		2017 (15 292)		2019 (14 299)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Gender														
Male	8142	47.1	7865	47.1	7573	46.8	7542	46.7	7255	46.9	7170	46.9	6838	47.8
Female	9130	52.9	8822	52.9	8612	53.2	8622	53.3	8220	53.1	8122	53.1	7461	52.2
Age														
50 - 59	9430	54.6	8266	49.5	7679	47.4	7201	44.5	6744	43.6	6719	43.9	6516	45.6
60 - 69	7842	45.4	8421	50.5	8506	52.6	8963	55.5	8731	56.4	8573	56.1	7783	54.4
Educational attainment														
ISCED 3c or lower	10432	60.4	9883	59.2	9395	58.0	9099	56.3	8607	55.6	8178	53.5	7505	52.5
ISCED 3ab	5123	29.7	4967	29.8	4895	30.2	4943	30.6	4715	30.5	4882	31.9	4622	32.3
ISCED 6-8	1717	9.9	1837	11.0	1895	11.7	2122	13.1	2153	13.9	2232	14.6	2172	15.2
Socioeconomic status														
Employed/ Self-employed	7796	45.1	7094	42.5	7290	45.0	7416	45.9	7453	48.2	7875	51.5	7874	55.1
Retired	9476	54.9	9593	57.5	8895	55.0	8748	54.1	8022	51.8	7417	48.5	6425	44.9
Participation in NAE														
No	16931	98.0	16282	97.6	15387	95.1	15384	95.2	14778	95.5	14462	94.6	13580	95.0
Yes	341	2.0	405	2.4	798	4.9	780	4.8	697	4.5	830	5.4	719	5.0

N= 111 374. Source: LFS (own calculation).

procedure eliminated all recurring respondents (see also [Table 2](#)). These sample restrictions left us with a sample of 111,374 respondents, the essential descriptive characteristics of whom are provided in [Table 2](#) below.

The gradual aging of the population is evident in [Table 2](#). The number of adults aged 60 to 69 increased as compared to the younger observed category, a trend accompanied by the growing number of respondents with the highest level of education. We can also easily recognize the growth in the number of employed and self-employed older adults after 2011.

## Results

Firstly, here we present the main descriptive characteristics of participants within the three mapped periods. As can be seen in [Table 3](#) below, the overall participation considerably increased during the period of economic crisis (2011 to 2014) across all the monitored categories. In this context, the data show the highest relative growth among respondents with the lowest level of education (ISCED3c or lower). The participation of this population increased almost four times as compared to pre-economic crisis period (2006 to 2010).

The results also reveal a less dynamic change during the “recovery” period after the economic crisis (2015 to 2019). The last column of the table shows a clear trend of stagnation in most of the subgroups of respondents with the exception of a slight decrease among working respondents and those with the highest level of education.

[Table 3](#) shows only descriptive results. In order to be able to assess the state and development over time more accurately, it was necessary to monitor all variables in their mutual interactions. Therefore, we present the remainder of our findings through a binary logistic regression model (see [Table 4](#) below). As the dataset has no missing values, the following model operates with all respondents (n = 111 374). The model ( $\chi^2 = 5795.784$ , df

**Table 3.** Development of participation in NAE among older adults in the Czech Republic from 2006 to 2019.

Categories and subcategories		Pre-economic crisis period: 2006 to 2010		Economic crisis period: 2011 to 2014		Post-economic crisis period: 2015 to 2019	
		n	%	n	%	n	%
<i>Gender</i>	Male	349	2.2	756	5.0	978	4.6
	Female	397	2.2	822	4.8	1268	5.3
<i>Age</i>	50 - 59	605	3.4	1204	8.1	1612	8.1
	60 - 69	141	0.9	374	2.1	634	2.5
<i>Educational attainment</i>	ISCED 3c or lower	122	0.6	425	2.3	526	2.2
	ISCED 3ab	321	3.2	641	6.5	959	6.7
	ISCED 6-8	303	8.5	512	12.7	761	11.6
<i>Position on labour market</i>	Retired	97	0.5	192	1.1	259	1.2
	Employed/Self-employed	649	4.4	1386	9.4	1987	8.6
<i>Total</i>		746	2.2	1578	4.9	2246	5.0

Participation in the four-week period before the survey was completed. Source: LFS (own calculation).

**Table 4.** Model of binary logistic regression.

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for Exp(B)	
							Lower	Upper
Gender (female vs. male)	0.288	0.079	13.370	1	0.000	1.334	1.143	1.556
Age (60–69 vs. 50–59)	–0.268	0.120	5.030	1	0.025	0.765	0.605	0.967
Education								
ISCED3ab (vs. ISCED3c or lower)	1.549	0.108	204.712	1	0.000	4.708	3.808	5.821
ISCED6-8 (vs. ISCED 3c or lower)	2.464	0.111	495.346	1	0.000	11.752	9.460	14.600
Employed/Self-employed (vs. Retired)	1.798	0.138	168.860	1	0.000	6.036	4.602	7.916
Period 2 (vs. Period 1)	1.321	0.198	44.455	1	0.000	3.746	2.541	5.522
Period 3 (vs. Period 1)	1.274	0.190	44.754	1	0.000	3.574	2.461	5.190
Interactions of categories in Period 2 and Period 3								
Gender								
Period 2 (vs. Period 1)	–0.128	0.096	1.772	1	0.183	0.880	0.729	1.062
Period 3 (vs. Period 1)	–0.012	0.091	0.016	1	0.898	0.988	0.827	1.181
Age 60-69								
Period 2 (vs. Period 1)	0.003	0.141	0.000	1	0.985	1.003	0.761	1.321
Period 3 (vs. Period 1)	0.085	0.133	0.407	1	0.524	1.088	0.839	1.412
Education ISCED3ab								
Period 2 (vs. Period 1)	–0.575	0.127	20.616	1	0.000	0.563	0.439	0.721
Period 3 (vs. Period 1)	–0.563	0.122	21.288	1	0.000	0.569	0.448	0.723
Education ISCED6-8								
Period 2 (vs. Period 1)	–0.949	0.131	52.475	1	0.000	0.387	0.299	0.500
Period 3 (vs. Period 1)	–1.016	0.126	65.149	1	0.000	0.362	0.283	0.463
Employed/Self-employed								
Period 2 (vs. Period 1)	0.132	0.167	0.625	1	0.429	1.142	0.822	1.585
Period 3 (vs. Period 1)	–0.039	0.159	0.060	1	0.806	0.962	0.703	1.314
Constant	–6.273	0.166	1428.882	1	0.000	0.002		

N= 114 345. Period 1 = Pre-economic crisis period: 2006 to 2010. Period 2 = Economic crisis period: 2011 to 2014. Period 3 = Post-economic crisis period: 2015 to 2019. Source: LFS (own calculation).

= 17, sig.  $\leq .0005$ ), calculated by the Enter method, is characterized by following values: Cox & Snell  $R^2 = .051$  and Nagelkerke  $R^2 = .175$ . The final version of the model correctly classified 95.9% of the cases.

The model was constructed to test all of the research hypotheses together. We began by focusing on hypotheses H1 to H4 related to our first research question. Based on the value of statistical (Sig.) and substantial (Exp(B)) significance, women were shown to participate in NAE significantly more than men, with women participating at a rate of about 1.3 times higher. In addition, the model also reveals that the older group of respondents (aged 60 to 69 years) was involved in NAE activities significantly less than the younger (aged 50 to 59 years), with the odds ratio .765 indicating a 1.3 times lower chance. Further, Table 4 indicates that older adults with a medium level of education (ISCED 3ab) participated significantly more often than those with the lowest level (ISCED 3c or lower). Consequently, the chances for participation of older adults with a medium education were about 4.7 times higher. Similarly, the same logic can be applied to older adults with the highest level of education (ISCED level 6–8), whose chances of participation were even higher than that of the low-educated respondents (11.8 times higher). Moreover, older adults who were employed participated in NAE significantly more than the retired. In the case of the employed, the chances for involvement in organized forms of lifelong learning were about 6.0 times higher. Overall, these results indicate at the 5% level of statistical significance that we can accept all four proposed hypotheses (H1 to H4) concerning the effect of microsocial factors regardless of developments over time.

After this initial testing, we turned our attention to changes in the significance of these factors over time. In our model, the pre-economic crisis period is applied as a reference category for the corroboration of all the subsequent hypotheses (H5 to H7). Our results generally show that the chances of participating in the NAE increased significantly during both the economic crisis (3.7 times higher) and post-economic crisis periods (3.6 times higher).

Using the interactions implemented in the model, we can further elaborate the changes across the monitored categories. The analysis revealed that the probability of participation according to gender and age did not change significantly after 2010. In the case of education, the probability of participation for both higher education level groups statistically as well as substantially significantly declined from the pre-economic crisis to the economic crisis period as well as during the transition to the post-economic crisis period. This would seem to indicate that the chances of participation in NAE increased rapidly among those from the lowest educational group, whose chances almost doubled in comparison to the category of ISCED 3ab (odds ratio .563; .569) and almost tripled in comparison to the category ISCED 6–8 (odds ratio .387; .362). Nevertheless, we should add that this did not lead to a fall in overall participation, as is evident from the previously mentioned results. Interestingly, the results also suggest that social change did not affect the chances of participation based on the respondents' socioeconomic status.

In summary, taking into consideration all of the above information, we can confirm hypothesis H5 (increasing chances of the low-educated in NAE), but we must reject hypotheses H6 and H7 focused on the effect of different periods on the microsocial factors of age and socioeconomic status. Though the data in the model weakly indicate the substantial validity of the rejected hypotheses, these results are not statistically significant.

## Discussion

The first aim of this empirical research was to identify the effect of four microsocial variables (gender, age, level of education and socioeconomic status) on participation in NAE among older adults aged 50 to 69 years. Group of these factors is responsible for a vast majority of inequality in participation in NAE. The results corroborate other current empirical evidence regarding the crucial impact of these factors on participation in NAE (Cincinnati, De Wever, Van Keer, & Valcke, 2016; Desjardins, 2020; Hansen & Brady, 2016; Van Nieuwenhove & De Wever, 2021; Yamashita, López, Keene, & Kinney, 2015).

The data also provide support for the cumulative advantage principle in the form of the “Matthew effect” (Bask & Bask, 2015; Desjardins & Ioannidou, 2020), according to which older adults with a higher level of education are more greatly predisposed to involvement in NAE than are older adults with a lower level of education. On the other hand, the participation among respondents with lower levels of education showed a rapid increase both during and after the economic crisis.

A similar conclusion can be drawn with regard to the importance in NAE of the “long arm of work” (Rubenson et al., 2018, p. 348). Remaining in or re-joining the work force showed an effect not only in the category of 50 to 59 year old adults, but also among older respondents. Although older employees have fewer learning opportunities than younger ones (Boeren, 2019; Desjardins, Olsen, & Midtsundstad, 2019) regardless of age, older workers are still involved more frequently in NAE than older adults who have retired or are otherwise out of the labor market. Therefore, being integrated into the labor market is one of the key preconditions to maintaining access to learning opportunities at an older age.

Arguably the most important finding from the data was that the strength of the microsocial factors was higher in the case of our target population of 50 to 69 years than among younger adults (18 to 49 or 25 to 49 years). Previous studies (e.g., Kalenda, Kočvarová, & Vaculíková, 2020; Vaculíková, Kalenda, & Kočvarová, 2020) based on the data from AES reported adjusted chances for participation in NAE at a rate of three to four times higher according to the highest education level and employment status for the younger population cohorts, while our findings show rates of five to ten times higher for the elderly. In other words, we found that the level of inequality based on attained education and economic activity is twice as great for the older adults. Therefore, if we wish to mitigate this inequality and increase involvement, it is necessary to address this population with more direct social services measures.

The second aim of our empirical endeavor was to determine the effect of three consecutive periods from 2006 to 2018 on the microsocial factors of participation in NAE. We aimed to investigate whether cumulative disadvantage of older adults is weakening or enduring over time. Surprisingly, the results reveal that investigated periods showed no substantial or statistical significance with regard to most of the microsocial factors we analyzed. This shows that the effect of these factors was independent of social circumstances in the form of government welfare and retirement policy as well as in terms of overall economic dynamics. From this reason, we can see that inequality in participation of older adults is persisting over time. These results are not in line with previous works (Desjardins & Ioannidou, 2020; Desjardins, Rubenson, & Milana, 2006; Rubenson & Desjardins, 2009) which have found a tight interconnection between socioeconomic conditions and the significance of microsocial variables on the participation in NAE.

These contradictory findings may result from a profoundly imprinted inequality in the participation of older adults in NAE which is much deeper than is the case with younger adults, and therefore, it is more enduring. Furthermore, in another study the institutional conditions and changes were shown to not affect older adults as greatly as compared to the rest of the adult population. This disparity of effect was projected to be the fact that the implemented measures have focused on reactive support for unemployment and not on active labor policy tools such as education and training (Kalenda, Kočvarová, & Vaculíková, 2020).

One exception to the static quality of the microsocial factors was our findings with regard to level of education, the strength of which increased during the transition from the economic crisis to post-economic crisis era. Our findings show the consistent weakening of the influence of the highest attained education category on involvement in organized learning for older adults. This democratic trend may be caused by the transformation of the NAE supply for older adults, which has targeted not only the highly educated but also individuals with more diverse educational backgrounds. The reason for this lies in two self-strengthening mechanisms. On the one hand, it is a closed national job market with a very high demand for workers of all categories, including older adults, whose skills need to be trained and developed in older age. Therefore, employers have invested more in the training of lower-educated older adults. On the other hand, it is a product of the increased supply of NAE institutions, like Universities of the Third Age, that have expanded after 2015 and have offered more diverse and cheap learning programmes not only in big cities but also in smaller ones.

The findings presented here have clear implications for both educational policy and future scholarly literature on the lifelong learning of older adults. On the one hand, the social origin of older adults plays a much more important role in participation in NAE and the transmission of the possible benefits from these activities to the lives of older people. Therefore, it is necessary to more intensively develop direct measures that help support access to learning opportunities, especially among those who need them the most – in our case the elderly with a lower level of education, women, and those out of the labor market. On the other hand, our results have found that this inequality has not risen and has not been negatively affected by social change. Such findings open up the possibility that inequality in this field can be weakened and partially reversed, which is confirmed by the slow growth in participation in NAE of older adults with the lowest level of education.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This work was supported by the Fulbright Program – Project Political Economy of Adult Learning Systems in Central Europe: From their Emergence to Liberalization.

## ORCID

Ilona Kočvarová  <http://orcid.org/0000-0002-7070-7998>

## References

- Albert, C., García-Serrano, C., & Hernanz, V. (2010). On-the-job training in Europe: Determinants and wage returns. *International Labour Review*, 149(3), 315–341. doi:10.1111/j.1564-913X.2010.00089.x
- Barrett, G., & Riddell, C. (2016). *Ageing and literacy skills: Evidence from IALS. ALL and PIAAC*. Discussion Paper No. 10017. Bonn, Germany: Institute for the Study of Labor (IZA). Retrieved from <http://ftp.iza.org/dp10017.pdf>
- Bask, M., & Bask, M. (2015). Cumulative (Dis)advantage and the Matthew Effect in Life-Course Analysis. *Plos One*, 10(11), e0142447. doi:10.1371/journal.pone.0142447
- Blais, J. -G., Duqueite, A., & Painchaud, G. (1989). Deterrents to women's participation in work-related educational activities. *Adult Education Quarterly*, 39(4), 224–234. doi:10.1177/0001848189039004004
- Boeren, E. (2011). Gender differences in formal, non-formal and informal adult learning. *Studies in Continuing Education*, 33(3), 333–346. doi:10.1080/0158037X.2011.610301
- Boeren, E. (2016). *Lifelong learning participation in a changing policy context: An interdisciplinary theory*. London: Palgrave Macmillan.
- Boeren, E. (2019). Being an adult learner in Europe and the UK: Persisting inequalities and the role of the welfare state. In E. Boeren, & N. James (Eds.), *Being an adult learner in austere times. exploring the contexts of higher, further and community education* (pp. 21–45). London: Palgrave Macmillan.
- Cabus, S., Ilieva-Trichkova, P., & Štefánik, M. (2020). Multi-layered perspective on the barriers to learning participation of disadvantaged adults. *Zeitschrift für Weiterbildungsforschung/Zeitschrift für Weiterbildungsforschung*, 43(2), 169–196. doi:10.1007/s40955-020-00162-3
- Cedefop. (2012). *Working and ageing: The benefits of investing in an ageing workforce*. Luxembourg: Publications Office of the European Union. Retrieved from [www.cedefop.europa.eu/files/3064\\_en.pdf](http://www.cedefop.europa.eu/files/3064_en.pdf)
- Chen, X. (2015). Exploring the implications of social change for human development: Perspectives, issues and future directions. *International Journal of Psychology*, 50(1), 56–59. doi:10.1002/ijop.12128
- Chisholm, L., Larson, A., & Mosseux, A. (2004). *Lifelong learning: Citizens' views in close-up. Findings from a dedicated eurobarometer survey*. Luxembourg City, Luxembourg: Office for Official Publications of the European Communities.
- Cincinnati, S., De Wever, B., Van Keer, H., & Valcke, M. (2016). The influence of social background on participation in adult education: Applying the cultural capital framework. *Adult Education Quarterly*, 66(2), 143–168. doi:10.1177/0741713615626714
- Cross, P. K. (1981). *Adults as learners. Increasing participation and facilitating learning*. San Francisco: Jossey-Bass.
- Dämmrich, J., Kosyakova, Y., & Blossfeld, H. -P. (2015). Gender and job-related non-formal training: A comparison of 20 countries. *International Journal of Comparative Sociology*, 56(6), 433–459. doi:10.1177/0020715215626769
- Darkenwald, G., & Merriam, S. B. (1982). *Adult education foundation of practice*. New York: Harper & Row Publishers.
- Davey, J. A. (2002). Active ageing and education in mid and later life. *Ageing and Society*, 22(1), 95–113. doi:10.1017/S0144686X02008528
- Desjardins, R. (2017). *Political economy of adult learning systems. Comparative study of strategies, policies and constraints*. London: Bloomsbury.
- Desjardins, R. (2019). The relationship between attaining formal qualifications at older ages and outcomes related to active ageing. *European Journal of Education*, 54(1), 30–47. doi:10.1111/ejed.12315
- Desjardins, P. (2020). *PIAAC thematic report on adult learning*. OECD Education Working Paper No. 223. Paris: OECD Publishing.
- Desjardins, R., & Ioannidou, A. (2020). The political economy of adult learning systems - some institutional features that promote adult learning participation. *ZfW*, 43(1), 143–168. doi:10.1007/s40955-020-00159-y
- Desjardins, R., Olsen, D. S., & Midtsundstad, T. (2019). Active ageing and older learners –skills, employability and continued learning. *European Journal of Education*, 54(1), 1–4. doi:10.1111/ejed.12327
- Desjardins, R., Rubenson, K., & Milana, M. (2006). *Unequal chances to participate in adult learning: International perspectives*. Paris: UNESCO.

- Desjardins, R., & Warnke, A. J. (2011). *Ageing and skills: A review and analysis of skill gain and skill loss over the lifespan and over time*. OECD Education Working Papers. No. 66. Paris: OECD Publishing.
- DiPrete, T. A., & Buchmann, C. (2006). Gender-specific trends in the value of education and emerging gender gap in college completion. *Demography*, 43(1), 1–24. doi:10.1353/dem.2006.0003
- DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. *Annual Review of Sociology*, 32(1), 271–297. doi:10.1146/annurev.soc.32.061604.123127
- Eurostat. (2021). Adult participation in learning by sex. Retrieved from [https://ec.europa.eu/eurostat/databrowser/view/sdg\\_04\\_60/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/sdg_04_60/default/table?lang=en)
- Findesen, B. (2018). Learning in later adulthood: A critical perspective. In M. Milana (Ed.), *The Palgrave international handbook on adult and lifelong education and learning* (pp. 839–856). London: Palgrave.
- Findsen, B., & Formosa, M. (2011). In *Lifelong Learning in Later Life*. Rotterdam: Sense Publishers.
- Golding, B., & Kimberley, H. (2016). Australia. In B. Findsen, & M. Formosa (Eds.), *International Perspectives on Older Adult Education. Lifelong Learning Book Series* (Vol. 22.). Cham: Springer. doi:10.1007/978-3-319-24939-1\_3
- Green, M., Iparraguirre, J., Davidson, S., & Rossall, P., & Zaidi, A. (2017). *Index of wellbeing in later life*. London, UK: AgeUK.
- Hämäläinen, R., De Wever, B., Malin, A., Cincinnato, S., Prieto, L. P., Persico, D. . . . Conlan, O. (2015). Education and working life: VET adults' problem-solving skills in technology-rich environments. *Comunicar*, 88(42), 38–47.
- Hansen, R. J., & Brady, E. M. (2016). Demographic and behavioral characteristics of Osher lifelong learning institute members. *The Journal of Continuing Higher Education*, 64(1), 42–50. <http://dx.doi.org/10.1080/07377363.2016.1131541>
- Heid, A. R., Cartwright, F., Wilson-Genderson, M., Pruchno, R., & Meeks, S. (2021). Challenges experienced by older people during the initial months of the COVID-19 pandemic. *The Gerontologist*, 61(1), 48–58. doi:10.1093/geront/gnaa138
- Istance, D. (2015). Learning in retirement and old age: An agenda for the 21st century. *European Journal of Education*, 50(1), 225–238. doi:10.1111/ejed.12120
- Istance, D. (2019). Seniors' learning. *European Journal of Education*, 54(1), 9–12. doi:10.1111/ejed.12317
- Jamieson, A. (2007). Education and the quality of life in later years. *Quality in Ageing and Older Adults*, 8(3), 15–23. doi:10.1108/14717794200700017
- Kalenda, J., Kočvarová, I., & Vaculíková, J. (2020). Determinants of participation in non-formal education in the Czech Republic. *Adult Education Quarterly*, 70(2), 99–118. doi:10.1177/0741713619878391
- Kopecký, M., & Šerák, M. (2015). Adult education and learning policy in the CZE. In M. Milana, & T. Nesbit (Eds.), *Global perspectives on adult education and learning. Policy* (pp. 29–43). New York: Palgrave Macmillan.
- Kyndt, E., Govaerts, N., Keunen, L., & Dochy, F. (2013). Examining the learning intentions of low-qualified employees: A mixed method study. *Journal of Workplace Learning*, 25(3), 178–197. doi:10.1108/13665621311306556
- Lee, J., & Desjardins, R. (2019). Inequality in adult learning and education participation: The effects of social origins and social inequality. *International Journal of Lifelong Education*, 38(3), 339–359. doi:10.1080/02601370.2019.1618402
- Midtsundstad, T., & Nielsen, R. A. (2019). Lifelong learning and the continued participation of older Norwegian adults in employment. *European Journal of Education*, 54(1), 48–59. doi:10.1111/ejed.12322
- OECD. (2017) Preventing ageing unequally. Paris: OECD (2013). *Recommendation of the Council of Ageing and Employment Policies*. Retrieved from [www.oecd.org/els/emp/Ageing-Recommendation.pdf](http://www.oecd.org/els/emp/Ageing-Recommendation.pdf)
- Radwan, E., Radwan, A., & Radwan, W. (2021). Challenges facing older adults during the COVID-19 outbreak. *European Journal of Environment and Public Health*, 5(1), em0059. doi:10.29333/ejeph/8457



- Rochas, M. D. C. (2021). Barriers and supportive factors for older adults learning about and using information and communication technologies for healthy aging in Costa Rica. *Educational Gerontology*, 47(10), 433–446. doi:10.1080/03601277.2021.1989228
- Rubenson, K. (2018). Conceptualising participation in adult learning and education. equity issues. In M. Milana (Ed.), *The Palgrave international handbook on adult and lifelong education and learning* (pp. 337–357). London: Palgrave.
- Rubenson, K., & Desjardins, R. (2009). The impact of welfare state requirements on barriers to participation in adult education: A bounded agency model. *Adult Education Quarterly*, 59(3), 187–207. doi:10.1177/0741713609331548
- Schmidt-Hertha, B., & Rees, S.L. (2017). Transitions to retirement – Learning to redesign one’s lifestyle. *Research on Ageing and Social Policy*, 5(1), 32–56. doi:10.4471/rasp.2017.2426
- Schuller, T. (2019). Active ageing and older learners—trajectories and outcomes. *European Journal of Education*, 54(1), 5–8. doi:10.1111/ejed.12316
- Schuller, T. & Watson, D. (2009). *Learning through life*. Leicester, UK: National Institute for Adult Continuing Education.
- Sztompka, P. (1993). *The sociology of social change*. Oxford: Blackwell.
- Tippelt, R., & Schmidt, B. (2009). *U*. S. (C. Theisen, Ed.). Bielefeld: W. Bertelsmann.
- UNESCO. (2020). *Embracing a culture of lifelong learning. Contribution to the futures of education initiative*. Hamburg: UNESCO Institute for Lifelong Learning.
- Vaculíková, J., Kalenda, J., & Kočvarová, I. (2020). Hidden gender differences in formal and non-formal adult education. *Studies in Continuing Education*. doi:10.1080/0158037X.2020.1732334
- Van Nieuwenhove, L., & De Wever, B. (2021). Why are low-educated adults underrepresented in adult education? Studying the role of educational background in expressing learning needs and barriers. *Studies in Continuing Education*, 44(1), 189–206. doi:10.1080/0158037X.2020.1865299
- Yamashita, T., López, E. B., Keene, J. R., & Kinney, J. M. (2015). Predictors of adult education program satisfaction in urban community-dwelling older adults. *Educational Gerontology*, 41(11), 825–838. doi:10.1080/03601277.2015.1050909
- Yamashita, T., López, E. B., Soligo, M., & Keene, J. R. (2017). Older lifelong learners’ motivations for participating in formal volunteer activities in urban communities. *Adult Education Quarterly*, 67(2), 118–135. doi:10.1177/0741713616688957