

## Bounded advantages of higher education regarding young adults' participation in nonformal education

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### Abstract

*The article uses insights from the capability approach as a theoretical framework. It investigates the potential of higher education to provide fertile advantages regarding young adults' participation in nonformal education and whether this potential is bounded by people's individual characteristics and the wider social context in which they live. Applying descriptive statistics and multilevel modelling, we conducted a secondary data analysis of the Adult Education Survey for 29 European countries. The findings go beyond previous research by clearly demonstrating that the fertile advantages of higher education regarding participation in adult nonformal education are not absolute and straightforward. They are bounded not only by certain important individual characteristics (such as individuals' social background and household income) but are also context-dependent. More concretely, they differ among countries and depend on various country-level factors, such as level of innovation and economic growth.*

**Keywords:** nonformal education, higher education, young adults, capability approach, comparative analysis

### Introduction

Several contemporary societal processes – such as constant changes in all social spheres, demographic dynamics, the ageing of societies, and the growing number of more

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knowledge and skills-intensive jobs – have led to the increasing importance of constantly improving one’s knowledge and skills. Keeping in mind these developments, it is understandable why the issue of participation in adult nonformal education has recently attracted the attention of many scholars. Studies (e.g. Boeren, 2017; Groenez et al., 2007; Lee & Desjardins, 2019; Roosmaa & Saar, 2012; Weaver & Habibov, 2017) have identified numerous factors at the micro, meso and macro levels that are associated with participation in adult nonformal education.

One of the most significant factors at the individual level that influences participation in adult nonformal education is educational attainment, especially the possession of a higher education degree. Studies have revealed that there is a widespread cumulative advantage. Thus, in most countries, people with higher education are more likely to be involved in continuing education in comparison to those with lower levels of education (e.g., Blossfeld et al., 2014; Boyadjieva & Ilieva-Trichkova, 2021; Kilpi-Jakonen et al., 2015). Summarising their findings, based on analyses of longitudinal data for 13 countries, Vono de Vilhena et al. (2014) conclude that their hypothesis that more-highly educated individuals ‘would be more likely to participate in non-formal education. . . has been systematically corroborated in most of the countries. . . with the exception of Germany and Denmark’ (p. 359). This raises an important question about the context-dependent character of the advantages of higher education regarding participation in adult nonformal education. However, to the best of our knowledge, the available body of literature is framed mainly within human capital theory and includes only a few examples of differentiated analysis that takes into account the interaction between higher education and other micro and macro factors (e.g. Cabus et al., 2020; Dämmrich et al., 2014).

Against this background, this article aims to explore in more depth the relationship between higher education and participation in adult nonformal education. More concretely, we investigate the potential of higher education to provide advantages regarding participation in adult nonformal education and whether this potential is bounded by people’s individual characteristics and the wider social context in which they live. At the theoretical level we aim to demonstrate the heuristic power of the capability approach (see Sen, 1992; Nussbaum, 2011) for studying adult nonformal education and for understanding the role of having higher education for participation in it. Empirically, we analysed data from the Adult Education Survey (AES) via descriptive statistics and logit models with random effects.

The article proceeds as follows. First, we outline our theoretical considerations by discussing the meaning of the main concepts used and insights from the capability approach as a framework for understanding (participation in) adult nonformal education. We used these considerations to delineate a research strategy and formulate our hypotheses. Then we present the data and methods used to test them. This is followed by the results and discussion sections. The conclusions section sketches the main findings regarding how the application of the capability approach enriches the conceptualisation of the functioning of higher education as a factor influencing participation in adult nonformal education, and it outlines limitations of the study and areas for future research.

## Theoretical considerations

### *Lifelong learning and adult formal and nonformal education*

The concept, practices and policies of lifelong learning can be regarded as a reflection of certain major socio-structural characteristics of societies of late modernity (Boyadjieva & Ilieva-Trichkova, 2021). The increased ‘permeability’ between different social spheres,

the new status of knowledge and constant social change becoming essential characteristics of modern societies explain both the hybrid character of lifelong learning and its importance for individual and societal well-being. Recognising the hybrid character of lifelong learning means acknowledging that it is a principle of learning and education that leads to the emergence of an assembly of different practices and that it includes different kinds of knowledge and skills within different perspectives – purposeful and spontaneous, formally institutionalised and informal, aimed at individual professional realisation, but also at personal development and enhanced civic engagement. Thus:

the lifelong learning paradigm offers a master concept for thinking about the whole of education and training systems including all learning from early childhood education and care, initial formal education, higher education, vocational education and training, and other adult education. (Desjardins, 2020, p. 10)

Adult learning and education are defined as ‘a core component of lifelong learning’ (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2016, p. 6). However, even a glimpse at the literature clearly shows that there are different definitions of adult learning and education. Some authors use adult education and adult learning interchangeably (Kilpi-Jakonen et al., 2015), others prefer the generic concept ‘adult learning and education’ (Milana et al., 2018; UNESCO, 2016, p. 6).

Among international organisations and from a policy perspective, it is widely accepted that learning includes a triad: formal, nonformal and informal (European Commission, 2001). Formal education is institutionalised, intentional and planned and its programmes are recognised as such by the relevant national education authorities, whereas informal learning is not institutionalised, less structured than either formal or nonformal education (UNESCO Institute for Statistics [UNESCO-UIS], 2012). According to one of the first definitions of nonformal education (NFE), it refers to any organised systematic and programmatic educational activity carried out beyond the formal education system, which is intended for different groups of the population through selected types of learning (La-Belle, 1981).

The distinction between formal, nonformal, and informal learning has been contested in the academic literature. It is argued (Desjardins, 2020; Hodkinson, 2010; Rubenson, 2019) that the boundaries between formal and informal learning are blurred and that most learning contains a mixture of informal and formal elements as far as the content of a given activity could be classified as formal, whereas its purposes, process and location as informal. Thus, it is obvious that efforts for a more in-depth understanding of the main concepts related to different forms of education and learning and their relationship should continue.

We accept that adult learning is a broader concept than adult education, which includes all forms of adult learning, both institutionalised and informal. We conceptualise adult formal education as ‘[e]ducation specifically targeted at individuals who are regarded as adults by their society’ and that ‘occurs as a result of experiences in an education or training institution, with structured learning objectives, learning time and support which leads to certification’ (UNESCO, 2009, p. 27; UNESCO-UIS, 2012, p. 78). However, to a lesser degree, adult NFE is also an institutionalised and structured learning process. This understanding is in line with the definitions of formal, nonformal and informal education, which have been used in the Adult Education Survey (see Eurostat, 2023).

The main characteristic of NFE that distinguishes it from formal education is that it does not lead to certification for a level of education. Even if a certificate is obtained at

the end of the training, it has no legal value (Boeren, 2016). NFE includes diverse learning opportunities and focuses mainly on activities that are most often voluntarily and consciously chosen by individuals (Sulkunen et al., 2021). NFE can have different functions and individuals may have different motivations for participating in it – they can enrol in courses for acquiring new skills or upgrading already acquired ones in order to foster their professional realisation, but they can also attend different seminars during their leisure time or take courses on volunteering with the aim to benefit their community. It is also important to emphasise that NFE activities can be undertaken by individuals at different stages of their life courses, that is students, young adults, or older people.

### ***Insights from the capability approach as a framework for understanding (participation in) adult nonformal education***

In essence, the capability approach is based on a view of living as a combination of various ‘doings and beings’ (called ‘functionings’), with quality of life assessed in terms of the capability to achieve valuable functionings (Sen, 1993, p. 31). The concept of ‘functionings’ reflects the various things that a person may value being or doing. Such things vary in complexity – from the very simple, like being well-nourished, to the more complex, like being happy (Sen, 1992, p. 39). In contrast, a person’s ‘capability’ refers to the alternative combinations that are feasible for that person to achieve. Thus, Sen envisions capability as a kind of freedom (Sen, 2009). This freedom is related to opportunities and, more specifically, to the way a person achieves the outcomes they value.

Every person has a specific capability set that refers to all the things they can do or be and that actually determine their life choices. In this sense, the capability approach is extremely sensitive to the importance of ‘[t]he autonomy of the agency aspect of a person’ and to ‘the view of persons as responsible agents’ (Sen, 1985, pp. 203-204). It helps to link structure and agency through so-called conversion factors. These factors relate to the differences between people and influence how a person can be, or is, free to convert the characteristics of a given good or service into freedom or achievement. Different authors have proposed different classifications of these conversion factors (Böhler et al., 2019; Crocker & Robeyns, 2009; Robeyns, 2005). We share the view that their classification should refer to the level they operate on: micro, meso or macro, as this reflects our understanding that participation in lifelong learning and adult education is a layered phenomenon and that taking into account different layers and nested structures allows us to better explain why people do or do not participate in lifelong learning activities (Boeren, 2017).

Nussbaum (2011) emphasises that the importance of education has been at the heart of the capability approach since its inception. From the capability approach perspective, education can play a role as a means, an end, and a conversion factor (Chiappero-Martinetti & Sabadash, 2014). It conceives of education as one of the dimensions of human life and human development which is important both for its own sake and for its contribution to the expansion of capabilities in other spheres of life. It should be emphasised that from the capability approach perspective, individual educational attainment (degree and years of education) should not be the sole measure related to (adult) education, but inequalities in participation in (adult) education have to be defined as important indicators of the development and well-being of nations, groups and individuals. Therefore, the study of the influence of factors at different levels on involvement in (adult) education becomes extremely important. However, with a few exceptions (e.g. Walker, 2012; Boyadjieva & Ilieva-Trichkova, 2021), there is a large gap

in the research concerning the application of the capability approach in the field of adult education, particularly regarding NFE.

Although very influential, the capability approach has also provoked criticism (for an overview, see Boyadjieva & Ilieva-Trichkova, 2021, pp. 58-61). Thus, it is criticised as failing to fully capture the interactive relationship between individual capabilities and social structures (Ibrahim, 2006) as well as being ‘unclear [about] how the conversion factors combine with each other’ (Chiappero-Martinetti et al., 2018, pp. 231-232). Given this, we think that there is a need to further strengthen, both theoretically and empirically, this aspect of the capability approach – crucial as it is in the analysis of participation in NFE. This is why we try, in the following analysis, to combine the conceptualisation of capability as an evaluative space for measuring inequalities with the concepts of *fertile functionings* and *corrosive disadvantage*. To the best of our knowledge, they have not been combined in the study of higher education and NFE.

In their book *Disadvantage*, Jonathan Wolff and Avner de-Shalit (2007) introduced these two concepts. Whereas fertile functioning refers to ‘those functionings, the securing of which is likely to secure further functionings’, corrosive disadvantage is defined as a ‘disadvantage the presence of which yields further disadvantages’ (Wolff & de-Shalit, 2007, p. 10). Discussing education as an example of fertile functioning, they concluded that:

lacking education is always a very corrosive disadvantage, . . . , whereas its fertility appears to be much more context-dependent; both in terms of which other functionings we are concerned with, and how many other people in society are educated to the same level (p. 144).

Nussbaum (2011) calls for greater theoretical clarity and notes that Wolff and de-Shalit ‘do not distinguish as clearly as they might between functioning and capability’ (p. 44). According to Nussbaum (2011), ‘[f]ertile functionings are of many types, and which functionings (or capabilities) are fertile may vary from context to context’ (p. 44). In turn, corrosive disadvantage is ‘the flip side of fertile capability: it is a deprivation that has particularly large effects elsewhere’ (p. 44).

In their answer to Nussbaum’s critical remark, Wolff and de-Shalit (2013) point to the difficulties in distinguishing capability from functioning and outline that:

[m]any functionings are in fact capabilities for other functionings – [f]or example, literacy is a capability and reading is a functioning, . . . [b]ut reading is not only a functioning; it is, at the same time, a capability, for example, for studying, or for driving (p. 162).

Wolff and de-Shalit also refer to other problems – for example, that functionings can be observed while this is not possible or not so easy for capabilities (p. 163) – in order to defend their preference for speaking about fertile functionings instead of fertile capabilities. We believe that this discussion is important for the development of the capability approach and should continue in future studies. As already stated, the focus of our article is on higher education as a factor in participation in adult NFE via the capability approach. Higher education is a functioning, but it also often represents an input to other functionings – employment, a good salary, further learning activities, civic activity, etc. That is why we will use the neutral term *fertile advantages*, suggested by Wolff and de-Shalit (2013). Taking into account Nussbaum’s emphasis on the context dependence of the fertility of a given capability or functioning, in the following analysis, we ask not only *whether* but also *where* (i.e., in what social contexts) further advantages will correlate to having higher education in relation to participation in adult NFE.

Trying to measure the freedom (capability) of girls in school settings, Vaughan (2007) distinguished between two types of capabilities: capabilities to participate in education and capabilities gained through education. While the first type of freedom refers to the abilities and opportunities that a child possesses to participate fully in the learning process in school, the second relates to the contribution of education to various spheres of human life outside of education. In our article, we use the notions of *capability to participate in education* and *participation in education as functioning* and apply them to adult NFE. We define *the capability to participate in adult education* as a person's freedom to be involved in adult education that they have reason to value. Participation in adult education as functioning reflects involvement in adult education as an activity that is valuable for a person.

The notion of the capability to participate in adult education clearly refers to individual opportunities to be involved in education, that is, the freedom to take part in educational activities that one has reason to value. It makes it possible to better justify why it is important to look beyond formal education – in our case, to adult NFE as well as to the role of higher education for it. More concretely, this concept highlights that the act of participation is an act of freedom and that education (and continuing education) can be both a valuable end in itself and a way to increase other capabilities. Focused on how higher education is associated with participation in adult NFE allows us to show that a higher level of education may foster both the capability to participate in adult NFE and the achievement of involvement in adult NFE (functioning). An assessment of the capability to participate as an act of freedom and the achieved functioning would involve analysing *both constraining and enabling factors* that might affect the freedom of a person to attend various forms of adult education. Examples of factors at the micro level related to adult education are gender, age, ethnicity, level of education and work experience. Factors at the meso level may include regional or local institutional educational arrangements, the state of the local economy or employers' perceptions and practices, whereas factors at the macro level refer to various national institutional arrangements in the sphere of education, macroeconomic conditions and economic structures (Boyadjieva & Ilieva-Trichkova, 2021).

One of the features of capability is that it is not directly measurable. This problem has been noted by Robeyns (2003, p. 85), who tries to evaluate gender inequalities in the space of capabilities but concludes 'given that we have little direct information about people's capability levels, we could start by taking group inequality in achieved functionings as indicative of inequalities in capabilities.'. Although Sen (1992) gives priority to capability instead of functionings as an evaluative space, he also stresses that there is no difference between focusing on functioning or on capabilities and that capability refers to a combination of all the potential outcomes (functionings) available to an individual. With these considerations in mind, we will use the functioning of NFE as a proxy for the capability to participate in NFE.

## Research strategy and hypotheses

We share Nussbaum's (2011, p. 145) understanding that the 'fertility of a given capability, and the corrosiveness of a given capability, are empirical questions whose answers are likely to vary with time and place'. That is why, in the second part of this article, we will present an empirically based study. The research strategy of our study is built on the above theoretical considerations and literature review. We operationalise higher education as a fertile functioning in relation to participation in adult NFE as

advantages that having a higher education degree brings for participation in NFE to people with different individual characteristics who live in different social environments. While social structures influence human capabilities, as Ibrahim (2006, p. 402) emphasises, ‘capabilities can also alter the pre-existing social structures rendering them more conducive to individual and communal well-beings’. The mutual relationship between capabilities and social structure is reflected in the understanding of the context-dependent fertility of a given capability/functioning. That is why, in order to reveal the fertile advantages of higher education on the capability to participate in adult NFE, we will focus on the *interactions between factors at micro (individual) and macro (country) levels*.

In Development as Freedom Sen (1999) argues:

We use incomes and commodities as the material basis of our well-being. But what use we can respectively make of a given bundle of commodities, or more generally of a given level of income, depends crucially on a number of contingent circumstances, both personal and social (p. 70).

Sen (1999, pp. 70-71) goes further and identifies five distinct contingent circumstances that should be taken into account when making interpersonal comparisons of people’s well-being which would otherwise be hidden if we rely solely on the metrics of income for evaluations of well-being. Among them are personal heterogeneities in terms of person’s age, gender, disability and distribution within the family, i.e., the influence on a person’s capability of services, networks, social/economic capital, provided by the family. Depending on all these factors one and the same income, or social background, can have different effects on people’s well-being and activities, such as participation in (adult) education. Previous research also shows that participation in lifelong and adult education ‘is a deeply unequal matter’ (Boeren, 2016, p. 24). Studies have revealed that adults’ socioeconomic status (measured by their parents’ level of education) is among the most important socio-demographic characteristics revealing unequal distribution in lifelong and adult education (Desjardins, 2015). Another individual characteristic of considerable importance for participation in lifelong learning is household income (Kim et al., 2004). Given these theoretical insights and empirical findings we expect that:

*Hypothesis 1a:* There is an interaction effect between having a higher education degree and young adults’ social background on the likelihood of participating in NFE.

*Hypothesis 1b:* There is an interaction effect between having a higher education degree and household income on the likelihood of participating in adult NFE.

According to Walker (2007, p. 135) ‘the capability approach requires that we look beneath at the real freedom or opportunities each student had to achieve what she valued’. Sen (Drèze & Sen, 2002) explains that:

[t]his crucial role of social opportunities is to expand the realm of human agency and freedom, both as an end in itself and as a means of further expansion of freedom. The word ‘social’ in the expression ‘social opportunity’ [...] is a useful reminder not to view individuals and their opportunities in isolated terms. The options that a person has depend greatly on relations with others and on what the state and other institutions do (p. 6).

Social opportunities are created by the institutions in different social spheres – economic, political, cultural – and differ among countries. As stated above, Nussbaum emphasises that the fertility of functionings depends on the specificity of social context. That is why participation in adult NFE varies not only between individuals but also between countries

(e.g., Blossfeld et al., 2014). Authors (Austin, 2016; Bøhler et al., 2019), working in the framework of the capability approach, pay special attention to the crucial role of the state of economy in a given country for the development of people's capabilities. A recent study (Capriati, 2022) finds a strong mutually reinforcing relationship between human development, GDP and innovation. It argues that the capability approach and the human development theory:

can provide the normative framework for the development of the social and institutional context in which innovation systems (ISs) develop and that ISs approach can offer a strategy for growth which is conducive to the expansion of capabilities (Capriati, 2022, p. 374).

The role of economic factors, such as GDP and level of innovation, for participation in lifelong learning has been demonstrated in several empirical studies. Groenez, Desmedt, and Nicaise (2007) suggest that economic growth will positively influence participation. Other authors (e.g., King & Sweetman, 2002) also reveal that during an economic recession there is a decreased participation in education due to individuals' reduced capacity to cover educational costs. However, some studies provide evidence that this relationship is counter-cyclical: when young people observe that there are fewer jobs available and the future seems uncertain, pursuing further education can be regarded as a good alternative to bad career prospects (e.g., Ayllón & Nollenberger, 2021).

A number of studies have also confirmed a positive relationship between innovation and lifelong learning participation (Boeren, 2016; Groenez et al., 2007). Keeping in mind the above theoretical considerations and empirical results, we can expect the following:

*Hypothesis 2a:* There is an interaction effect between economic growth achieved in a given country and higher education on the likelihood of participating in adult NFE.

*Hypothesis 2b:* There is an interaction effect between a given country's level of innovation and higher education on the likelihood of participating in adult NFE.

## Data and methodology

### Data

The empirical basis of the present article includes individual-level data from the most recent wave of the Adult Education Survey (AES) from 2016. The AES covers the resident population aged 25–64 years. The reference period for participation in education and training included the 12 months prior to the interview. We limited the analysis to 29 countries: 27 EU countries at the time of the survey<sup>1</sup> and two partner countries (Norway and Switzerland). Our analysis is also restricted to the group of young adults age 25–34, since, according to data from AES 2016 this is the age group characterised by higher involvement in NFE<sup>2</sup>. To obtain the same number of cases for each of the models, categories for missing values in any of the individual-level variables were omitted from the analysis using listwise deletion. It was important to do this in order to compare the coefficients, but also to compare the country-level variance, intraclass-correlation and log likelihood while entering new variables. Thus, the final analytical sample consisted of 33,304 individuals, was gender-balanced (49.55% women) and had a mean age of 29.67 (SD = 2.88). We used the weighted data (respweight) from the AES when presenting descriptive statistics and percentages and we used unweighted data for the multilevel regression analyses.



The data at the country level were extracted from the Eurostat website [Date: 07.01.2022; Code: tec00115] and the European Innovation Scoreboard 2017 report (European Union 2017, p. 90). These data were taken as of 2015.

## **Variables**

In order to measure participation in adult NFE as a functioning, we followed the way Eurostat measures it in its official statistics. More specifically, we transformed the answers' codes (0-99) of the question: *In how many such nonformal learning activities have you participated during the last 12 months* into two categories: 0 for those who reported no activity and 1 for those who reported one or more activities. Such activities may refer to participation in courses, workshops, seminars, guided on-the-job training or private lessons with different motivation both job-related and personal development. This dummy variable was used as a *dependent variable* in the analysis. The question does not take into account the purpose of the activity – job-related or non-job related – and includes all activities with the intention of improving knowledge or skills in any area (including hobbies) either in leisure time or in working time.

The main independent variable included at the individual level was having a higher education degree (1 = yes). In order to test hypotheses 1a and 1b, we included interaction terms between having a higher education degree and the following variables: parents' education as an indicator of social background (1=low [including persons without a parent with higher education]) and net monthly household income quintile (ref. category fifth quintile [Q5], which represents the highest income group).

Two independent variables were included at the country level: the real gross domestic product (GDP) growth rate (as an indicator of economic growth) and the innovation index (as an indicator of level of innovation).

GDP is defined as the value of all goods and services produced less the value of any goods or services used in their creation (Eurostat, 2024). To measure the growth rate of GDP in terms of volumes, the GDP at current prices is valued in the prices of the previous year and the thus computed volume changes are imposed on the level of a reference year.

The innovation index is a composite measure that consists of 27 indicators from 10 innovation dimensions at the country level: a) human resources, b) attractive research systems, c) innovation-friendly environments, d) finance and support, e) firm investments, f) innovators, g) linkages, h) intellectual assets, i) employment impacts, and j) sales effects. It ranges from 0 to 1. (Full details on the index methodology are available from European Union, 2017, pp. 78-79).

Descriptive statistics of the dependent, independent and control variables are presented in Table 1.

*Table 1.* Descriptive statistics of models' variables, weighted individual-level data (respweight)

Variables	Type	Mean	Standard deviation	Observations
<i>Dependent</i>				
Participation in nonformal education (NFE) (Ref. No)	Binary	0.481	0.500	33,304
<i>Independent</i>				
Having higher education (Ref. No)	Binary	0.387	0.487	33,304
Parents' education (Ref. High)	Binary	0.731	0.444	33,304
Net monthly household income quintile (Ref. Q5)	Binary	0.203	0.403	33,304
Q4	Binary	0.213	0.410	33,304
Q3	Binary	0.214	0.410	33,304
Q2	Binary	0.194	0.396	33,304
Q1	Binary	0.175	0.380	33,304
<i>Control</i>				
Gender (Ref. Male)	Binary	0.496	0.500	33,304
Current labour market status (Ref. Full-time employed)	Binary	0.620	0.486	33,304
Part-time employed	Binary	0.122	0.327	33,304
Unemployed	Binary	0.120	0.325	33,304
Inactive	Binary	0.139	0.346	33,304
Sought out information on learning possibilities (Ref. No)	Binary	0.316	0.465	33,304
<i>Country-level</i>				
Gross Domestic Product (GDP) growth rate	Continuous	2.5	1.839	29
Innovation index	Continuous	0.458	0.162	29

### *Empirical analysis*

To test our hypotheses, we employed a series of logit models with random effects. These models were considered appropriate because our dependent variable was binary and because the individuals (Level 1) in the AES were nested in countries (Level 2). Multilevel models are usually required in cases in which the intraclass correlation (ICC) is higher than 0.1 (Hox et al., 2010). Clustered data imply that the observations are dependent, but multilevel models account for a nested structure by including random intercepts at higher levels (Rabe-Hesketh & Skrondal, 2012). In contrast to fixed-effects models, we could include variables at Level 2 using random-effects models. Finally, multilevel models were chosen as appropriate because they allow for the estimation of cross-level interaction effects<sup>3</sup>.

These models were estimated using the `xtlogit` command in Stata 16. Following Rabe-Hesketh and Skrondal (2012), we interpreted the results with the odds ratios conditionally on the random intercepts of the models.

### **Results**

The extent to which young adults participate in NFE differs considerably across European countries. The baseline model for NFE (Model 0) resulted in an unconditional ICC of 0.128, which is in line with studies in the area of education, which often report an intraclass correlation of 0.1 (Hox, 2010). This shows that about 12.8% of the variation in the likelihood of participating in NFE is due to differences between the countries where young adults live and the structure of the data is clustered.

There is also great variation across countries with regard to the gap in participation rates between young people with and without higher education. It ranges from 7.75% in Hungary to 31.59% in Croatia. Regardless of this, in all European countries studied, young adults with higher education tend to participate more in NFE than their counterparts who have not attained a higher education degree (see Figure 1).

*Figure 1.* Participation rates in nonformal education by groups of young adults having higher education or not in 29 European countries, % (Source: AES 2016, weighted data [respweight])

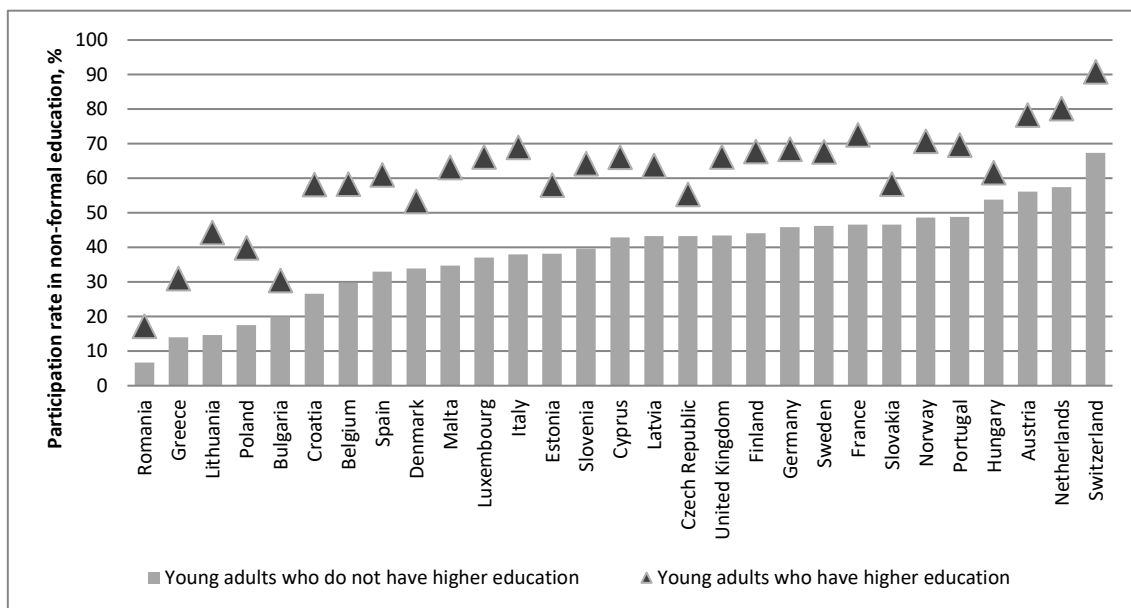


Table 2 displays the results of the logit models with random effects, analysing the likelihood of participation in NFE. To account for the soundness of significances in the models, in addition to interpreting the odds ratios with at least 5% significance, following Bernardi et al. (2017) instead of standard errors, we also present the confidence intervals of these estimates. Model 1, in which all individual-level characteristics have been added, shows that the odds of participating in NFE are 1.86 times greater for young adults who have a tertiary degree than for those who do not have such a degree, given the other covariates. Regarding the other independent variables at the individual level, low parental levels of education and monthly household income had a negative relationship with participation in NFE. These results clearly indicate that the lack of both economic and cultural resources constrains continuing education through nonformal activities.

Models 1a and 1b tested the extent to which the hypothesised association between higher education and the likelihood of participating in NFE was moderated by the educational level of the respondents' parents and their household income.

*Table 2.* Logit models with random effects showing associations between having higher education (HE) and participation in nonformal education (NFE), and cross-level interactions between having HE and selected country-level characteristics, Odds ratio

	<b>Model 0</b>	<b>Model 1</b>	<b>Model 1a</b>	<b>Model 1b</b>	<b>Model 2</b>	<b>Model 2a</b>	<b>Model 2b</b>
Having HE: Ref. No							
Yes	1.863** (1.764,1.968)	1.649** (1.494,1.819)	1.547** (1.380,1.734)	1.863** (1.763,1.968)	1.860** (1.761,1.965)	1.850** (1.751,1.955)	
Parents' education: Ref. High							
Low	0.749** (0.706,0.795)	0.681** (0.624,0.743)	0.746** (0.704,0.792)	0.751** (0.708,0.797)	0.750** (0.707,0.796)	0.751** (0.708,0.797)	
Net monthly household income quintile, Ref. Q5 (highest)							
Q4	0.889** (0.823,0.961)	0.887** (0.821,0.959)	0.800** (0.714,0.896)	0.887** (0.821,0.959)	0.887** (0.821,0.959)	0.883** (0.817,0.954)	
Q3	0.722** (0.668,0.782)	0.722** (0.667,0.781)	0.649** (0.581,0.725)	0.721** (0.666,0.780)	0.722** (0.667,0.781)	0.718** (0.664,0.777)	
Q2	0.643** (0.591,0.699)	0.642** (0.591,0.699)	0.561** (0.501,0.629)	0.641** (0.589,0.697)	0.641** (0.589,0.697)	0.637** (0.586,0.693)	
Q1 (lowest)	0.584** (0.534,0.639)	0.584** (0.534,0.639)	0.491** (0.436,0.552)	0.582** (0.532,0.636)	0.582** (0.532,0.637)	0.579** (0.529,0.634)	
Low parents' education X Having HE		1.187** (1.059,1.331)					
Q4 X Having HE			1.185* (1.016,1.382)				
Q3 X Having HE			1.186* (1.016,1.385)				
Q2 X Having HE			1.294** (1.097,1.525)				
Q1 X Having HE			1.480** (1.246,1.759)				
GDP growth rate				1.010 (0.899,1.372)	0.879 (0.705,1.096)		
Innovation index				1.645** (1.314,2.060)		1.486** (1.233,1.791)	
<i>Cross-level interactions</i>							
GDP growth rate X Having HE					0.907** (0.862,0.954)		
Innovation index X Having HE						1.092** (1.034,1.154)	
Constant	0.885 (0.686,1.141)	1.036 (0.805,1.332)	1.123 (0.868,1.452)	1.159 (0.896,1.499)	0.981 (0.806,1.195)	1.036 (0.813,1.321)	0.995 (0.816,1.214)
Country-level variance	0.483**	0.426**	0.425**	0.420**	0.237**	0.394**	0.244**
Intraclass correlation	0.128	0.115	0.114	0.113	0.067	0.107	0.069
Log likelihood	-21289	-19026	-19021	-19015	-19017	-19018	-19013
BIC	42599	38187	38189	38207	38191	38191	38182

*Notes:* Models 1-2b are controlled for gender, current labour market status and sought out information on learning possibilities. Confidence intervals in parentheses. N (individual level) = 33,304. N (country level) = 29. Significance: \*  $p < 0.05$  and \*\*  $p < 0.01$ .

In line with *Hypothesis 1a*, the odds of participating in NFE among young adults whose parents have low educational levels are 18.7% higher in cases when they possess a higher education degree in comparison with their counterparts whose parents' education is also low but who do not have a degree. *Hypothesis 1b* is corroborated by lower household

income being statistically significantly associated with a relatively higher capability to participate in NFE among young adults with a higher education degree.

Models 2a–2b tested the cross-level interaction terms between having a higher education degree and some selected country-level characteristics. To facilitate their interpretation and to provide comparability of results, both continuous country-level variables were standardised and entered into our analysis, being mean-centred and having a standard deviation of one. This means that the interaction terms show the difference in the odds of NFE between young adults with or without higher education when the country-level variables were at their highest observed value compared to when they were at their lowest observed value. Although we did not find any association between the GDP growth rate of a given country and the likelihood of young adults participating in NFE (Model 2), we did find that the interaction term between higher education attainment and the GDP growth rate of a given country was statistically significant (Model 2a). In this case, it is negative. This supports *Hypothesis 2a*. Model 2 shows that there is a positive association between the innovation index of a given country and the likelihood of young adults participating in NFE. This association remains positive even when we add an interaction term between this index and having higher education (Model 2b). Therefore, *Hypothesis 2b* was also corroborated.

## Discussion

The results obtained demonstrate that participation in adult NFE depends on individual-level factors, such as individuals' social backgrounds and – mainly – on having higher education. These results are in line with previous studies (Blossfeld et al., 2014; Boeren, 2016; Boyadjieva & Ilieva-Trichkova, 2021; Desjardins, 2015; Lee & Desjardins, 2019). Inspired by ideas from the capability approach, the analyses in the present article go further and reveal some findings that enrich the research on participation in NFE and its association with higher education in different social contexts.

First, the article shows that the extent to which higher education provides fertile advantages regarding participation in adult NFE is bounded by individual characteristics. The findings that higher education provides more fertile advantages for young adults whose parents have lower education levels and who have low household incomes show that higher education broadens the capability for these young adults to participate in NFE. We interpreted these results as an indication of the empowerment role of higher education (Boyadjieva & Ilieva-Trichkova, 2021) and its capacity to mitigate inequalities in participation in NFE.

Second, our study provides evidence that the fertility of higher education with regard to participation in NFE is context-dependent and is immersed in different countries' environments. Thus, we found a counter-cyclical relationship between the likelihood of participation in NFE among holders of tertiary degrees and economic growth. More concretely, having a higher education degree confers fewer advantages regarding participation in NFE if young adults are living in countries with high economic growth. We suggest that this finding does not indicate that young adults with higher education face more constraints and increased educational costs. Rather, it shows that the improved economic situation in these countries (more jobs and credit opportunities) allows people with lower levels of formal education to invest in improving their education.

The result that a higher education degree can confer more advantages regarding participation in NFE if young adults are living in countries with high innovation levels than it does for people who do not live in such countries can be viewed as a sign that highly innovative societies need constant updating and skills improvement. It also

suggests that people with higher educational degrees are more likely to constantly update their skills, as has been shown in other studies (e.g., Blossfeld et al., 2014). Another possible interpretation is that higher education graduates in these societies value NFE for its own sake to a greater extent, but this needs to be checked in a separate study.

Third, there are at least two explanations in the literature for the finding that higher education is one of the most relevant variables when exploring participation in adult education (Groenez et al., 2007). First, on the supply side, it costs less to train people who have already acquired a high level of human capital through school. Second, on the demand side, each additional training course offers the learner a cumulative comparative advantage. The analysis in this article suggests that the strength of these explanations may vary in different social contexts – thus, the explanatory potential of the demand side could be greater in more innovative societies than in less innovative ones.

Fourth, our finding that having a higher education degree brings fertile advantages with regard to participation in NFE is not at odds with human capital theory and its statement that ‘learning is a way to invest in human capital that is formally no different from education, on-the-job training, or other recognized investments’ (Becker, 1993, p. 68). Our analysis, however, goes beyond this view and shows that the fertility of higher education regarding the capability to participate in NFE is not absolute, straightforward, or independent of individual characteristics and the wider social context.

## Conclusions

The present article provides a comparative analysis at the individual and country levels of the fertile advantages of higher education regarding participation in NFE among young adults in Europe. It reveals the heuristic potential of the capability approach for studying adult education and NFE. The application of the capability approach, on the one hand, allows us to better conceptualise participation in NFE and grasp the interrelation between higher education and participation in NFE. On the other hand, it provides – to the best of our knowledge – the first attempt to use the concept of fertile capability or functioning as a framework for a quantitative empirical study and thus stimulate its further development.

The article contributes to the literature on higher and adult education by: 1) applying the capability approach in conceptualising participation in NFE as both a capability and functioning; 2) exploring how the concept of fertile functionings or advantages can enrich our understanding of the link between higher education and participation in adult NFE; 3) demonstrating that this link is bounded by some important individual characteristics and also differs among countries with different social environments; and 4) defending the need for an integrated approach to the analysis of participation in adult learning, incorporating the influence of factors at different levels.

The analysis presented in this article has two limitations. First, we used information about participation or not participation in NFE, which does not capture the quality of NFE activities and ‘intensity’ of participation (the amount of time spent in NFE activities). Second, we have limited our analysis mainly to the factors operating at the micro and macro levels. Thus, we have not investigated the role of the supply of NFE at the meso and macro levels because of the lack of appropriate empirical data. Extending the analysis by overcoming these limitations is a fruitful direction for future work.

The present article raises other important questions that deserve further research. At the theoretical level, there is a need to deepen our understanding of issues such as how the fertility of higher education depends on its inner characteristics (e.g., on its quality, specialty, content of programmes). It is also worth further investigating the mechanisms behind the obtained results and how they function in the current crisis-laden (such as

Covid-19 pandemic, war in Ukraine) socio-economic situation. Future research may also include studying the fertile functioning of higher education separately for different types of NFE (e.g. job-related and non-job-related) and other age groups and accounting for whether the involvement in NFE has been paid by the participants or by somebody else (employers, trade unions, government). A special attention deserves the attempt to link the advantages gained from having a higher education degree for participation in NFE with different types and functions of NFE. More concretely, for participation in which forms of NFE and with what purpose is the influence of higher education attainment more pronounced.

We studied participation in NFE as a functioning. It is worth attempting to measure the capability to participate in adult education and adult NFE. This will allow us to capture the different opportunities young adults have for adult education, or whether they have reason to value the type of education in which they participate.

Another possible direction for future research would be to explore other possible factors at the micro and macro levels that make the fertility of higher education context-dependent. For example, gender and employment status at the micro level, and a country's democratic or welfare regime, level of massification of higher education and a country's values (level of trust, individualism/collectivism) at the macro level. Such attempts to combine theoretical conceptualisation with empirically based analyses could serve as an incentive not only for a better understanding of both higher education and NFE, but also for formulating inclusive policies regarding these types of education that take into account the specificity of different social groups.

Our analyses and findings have clear policy implications. They demonstrate the need for the development of more sophisticated social policies regarding participation in adult learning which may be driven by different motives and may have different functions. It does not occur in a vacuum but depends on factors at different levels that refer to individuals' life paths and the social environments they live in. That is why, to be more effective, social policies in the sphere of adult learning should not be 'one size fits all' and formulated top-down. Rather, they should be based on a more differentiated approach that takes into account individuals' characteristics and the socio-economic context of a given country.

## Notes

- <sup>1</sup> Ireland was excluded from the analyses because there are missing cases regarding net household income.
- <sup>2</sup> Participation rate in education and training by age, Eurostat, data code: TRNG\_AES\_101, last update: 09/06/2023. See also Boeren (2016).
- <sup>3</sup> The models' specifications with the corresponding equations are available at request.

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The authors declare no potential conflicts of interest with respect to the research, authorship or publication of this article.

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