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Participation reimagined: beyond the one-dimensional approach to participation in adult learning and education

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ABSTRACT

This article re-evaluates the concept of participation in adult learning and education (ALE), introducing a novel framework based on Kelty's work on modes of participation. The article contends that investigations into ALE must venture beyond simplistic, one-dimensional approaches to participation that focus solely on participant numbers or hours dedicated to organised learning, as these approaches fail to capture the complexity of engagement in organised adult learning. The research framework introduced in this article decomposes participation into seven distinct dimensions: educative dividend, goals and tasks, resource control, exit, voice, visible metrics and affective capacity. This article demonstrates the utility of the new framework through analysis of data from a 2023 nationally representative survey conducted in the Czech Republic. For a sub-sample of non-formal education (NFE) participants, we find clear sociodemographic patterns of scoring across the dimensions, with education level, employment and occupation status, and employer size being the most articulate. By applying cluster analysis, we identify two subgroups: *the high engagement participation* (HEP) cluster and the *low engagement participation* (LEP) cluster. Overall, our findings contribute towards constructing a new typology based on the characteristics of participation itself, not on individual characteristics, such as motivation or attitudes.

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Adult education and training; participation dimensions; typology of learners

Introduction

Participation is one of the most researched aspects of adult learning and education (ALE). According to frequently cited definition of Richard Desjardins: 'Participation research is concerned primarily with three overarching questions: What is the extent of participation? Who is participating? Why are certain people or groups participating either more or less, or not at all?' (Desjardins, 2011, p. 205). In this article, we propose a significant addition to this research field: addressing a fourth key question – What is the nature of participation in ALE?

Investigating this question could help us better explain why certain categories of individuals are resisting the opportunities to participate in educational activities (Kondrup, 2015). Such an approach could eventually facilitate a more nuanced measurement of participation in ALE, extending beyond the current policy focus on merely increasing participation rates without considering the intensity, quality, voluntariness and depth of engagement in the learning activity. Presently, the methodologies employed by Eurostat in the Adult Education Survey and by the OECD in PIAAC allocate minimal attention to these qualitative parameters.

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Furthermore, the importance of studying empirically the nature of participation goes well beyond the effort to explain participation rates. It is a research problem in its own right. The nature of participation is intrinsically linked to the learning environment and its outcomes, making it a critical area of enquiry. For example, current theories of motivation (Ryan & Deci, 2019, 2020) posit that for the learning process to be effective, individuals must satisfy three fundamental psychological needs: competence, relatedness and autonomy. Whether participation in specific adult educational activities fosters these essential conditions remains largely unexplored – not to mention the variability of these conditions among learners from different socio-economic backgrounds and age groups.

Moreover, prominent adult education scholars (e.g. Brookfield, 1996; Knowles et al., 2005) emphasise that meaningful engagement in adult education requires specific features of participation, especially a democratic partnership between educators and learners. This involves mutual respect, collaboration among peers, voluntary participation, learner autonomy in setting educational goals and the cultivation of a critical voice. Again, many of these dimensions are frequently missed by the current large-scale international survey research.

The primary aim of this article is to introduce a new conceptual framework for researching participation in ALE based on Kelty's work on modes of participation (Kelty & Erickson, 2018; Kelty et al., 2015) and to demonstrate its empirical relevance through analysis of national survey data from the Czech Republic. Within the framework of this special issue – *Adult Participation and Large-Scale Survey Data: Conceptual and Methodological Debate*, this article seeks to foster discussion on the need for a more multidimensional measurement of participation in large-scale surveys focused on ALE and it aspires to introduce a new approach that could complement existing one-dimensional methodologies.

There are two specific research aims (RA) for this article. First, we aim to explore dimensions of participation among adults (aged 25–64) who engaged in non-formal education (NFE) in Czechia and identify related sociodemographic patterns (RA1). Our focus on participants in NFE is driven by the fact that NFE is the most prevalent form of organised adult learning in current European societies (Eurostat, 2023a). Moreover, the volume of participation in formal adult education in the Czech Republic is comparatively very low (Kalenda, 2024), which would limit the application of statistical analysis. Second, we aim to create a new typology of participation in ALE by identifying clusters of participants based on the predominant patterns of participation within the measured dimensions and explore which characteristics represent statistically significant factors associated with belonging to the clusters (RA2). This new typology is based on the nature of participation itself rather than on sociodemographic features (Boeren, 2016), motivation profiles (Houle, 1961; Boshier, 1971) or attitudes (Darkenwald & Hayes, 1988; Hayes & Darkenwald, 1990).

We will address two research questions (RQs) corresponding to the specific research aims (RAs):

RQ1 – What are the characteristics of participation in NFE based on the Kelty´s multi-dimensional approach and associated sociodemographic patterns among adult learners?

RQ2 – What is a typology of participants in NFE based on the multi-dimensional approach to participation?

Shortcomings of the one-dimensional approach to participation

Research into participation in ALE predates the initiatives of major international organisations, such as the OECD and the EU. Long before the EU introduced the first generation of the Adult Education Survey (AES) in 2007, pioneering national surveys were already being conducted in the UK and Canada during the 1980s and early 1990s. These early efforts focused on measuring how many adults were involved in various forms of continuing education and what were key social

characteristics of adult learners (McGivney, 1990, 1993; Rubenson & Willms, 1993; Sargant, 1991; Tuckett & Sargant, 1996).

The introduction of large-scale international surveys marked a pivotal, almost paradigmatic shift in the field (Rubenson, 2019), constituting the global adult education space as an object of scientific enquiry. These surveys enabled extensive comparative research within adult education, mainly in economically developed industrial and post-industrial countries, and established an autonomous research stream focused on examining international participation patterns (Kondrup, 2015). Both the OECD and the EU, driven by policy objectives and the desire to institutionalise the agenda of lifelong learning, were particularly interested in quantifying the phenomenon of lifelong learning (Elfert & Rubenson, 2023; Elfert & Ydesen, 2023).

The 'volume' of ALE thus became a primary object of interest. To quantify participation, these surveys adopted the simplest available metric: counting the number of individuals participating in specific educational activities ('head counting'). Consequently, engagement in ALE and the scale of Adult Learning Systems in international comparative research began to be measured predominantly by participation rates. These rates became not only an object of scientific enquiry but also a basis for policy setting, benchmarking and data-based governance (Boeren, 2016; Elfert & Rubenson, 2023; Elfert & Ydesen, 2023, Rubenson, 2018; 2018). Only a handful of studies utilised alternative metrics, such as hours of participation – i.e. time spent in particular organised learning activities (Desjardins, 2011; Desjardins et al., 2006; OECD, 2003).

Despite some surveys operating with different time frames for participation (e.g. 4 weeks for the Labour Force Survey versus 12 months for AES) and slightly different item wording, they share a common focus on what we call a one-dimensional approach to participation in ALE. This approach classifies individuals in a binary fashion as either participants or non-participants. Participation here automatically translates into learning without further insight into the nature of one's engagement – such as the degree of control individuals have over their learning, the voluntariness of their participation or whether participants perceive tangible outcomes from their learning. According to motivational and andragogical theories (Knowles et al., 2005; Ryan & Deci, 2019, 2020), these characteristics are crucial preconditions for any successful goal-oriented behavioural activity, such as organised adult learning.

We argue that this analytical approach has led to the construction of participation research in ALE around very 'simple' (Dohmen et al., 2019) and 'vague' (Boeren, 2016) measures of engagement with organised forms of adult learning. This has resulted in comparative research that often focuses on 'league tables' (J. Field et al., 2016) rather than developing nuanced typologies of participation behaviour. Such simplification has hindered a deeper understanding of the complexities and variations in adult learning participation.

Multi-dimensional approach to participation

Within the one-dimensional approach, participation simply means attending an educational event. We take this as a basis for knowing that participation in ALE is indeed taking place and inquire further into the nature of such participation. This enquiry is informed by literature that investigates participation across various fields and domains. Research on participation in this broad sense has a long history and has been carried out across a broad range of social science disciplines. Classical works situate participation in the politics of liberal democracies (Pateman, 1970), in local citizen engagement (Arnstein, 1969) or in studies of organisations (Dachler & Wilpert, 1978). Recently, this broad area of research on participation has been systematised by Kelty et al. (2015) into a specification of seven dimensions of participation.

This multi-dimensional approach to participation *represents a synthesis that is intended to enable empirical comparative analysis*. Although Kelty et al. (2015) use cases of digital platforms as empirical material for their analysis, the synthesis is intentionally worked out so that the dimensions could be applied irrespective of domains and practices. Kelty et al. (2015)

explicitly claim that the introduction of digital media did not change the nature of participation. Their synthesis relies heavily on research into pre-digital forms of participation, drawing extensively from classical social theorists, such as Durkheim, Hirschmann or Mauss (see below for details).

In order to synthesise the seven dimensions of participation, Kelty et al. (2015, 2018) make use of both (1) *extensive* and (2) *intensive definitions of participation*. Extensive definitions cover various aspects of participation, such as the ability to learn from participation, the ability to control resources through participation or the ability to exit participation (see Table 1 for their overview and the text below) that constitute each of the seven dimensions. While Kelty et al. (2015) admit that some dimensions may overlap, they nevertheless contend that each represents a distinct aspect of participation worthy of dedicated enquiry.

However, not every dimension is necessarily present in each empirical instance of participation, certainly not with the same intensity. To account for this, Kelty et al. (2015) make use of intensive definitions of participation, which focus on the gradation with which certain phenomena are more or less participatory. This means that every dimension of participation can be assigned a degree of intensity. As a result, there may be instances of participation that are strong in some dimensions, but weak in others. As a result, every established practice of participation can be analysed and assigned a 'signature' in terms of the seven dimensions and their intensity.

By further analysing the signatures of empirical cases, patterns emerge that indicate associations among the dimensions. In this way, Kelty and Erickson (2018) identify two general modes of participation. While the 'radical-direct' mode of participation (which is strongest in dimensions 2, 3 and 5, see their description below) provides means to influence decision-making and control over resources, the 'experiential-affective' mode of participation (which is strongest in dimensions 1 and 7, see their description below) is centred around the experience of being part of a collective. However, these modes are not mutually exclusive, and the authors continue their analysis to show that there are empirical cases of participation that (1) exhibit high intensity across most dimensions and therefore embody both modes, (2) exhibit high intensity only in certain dimensions and therefore place emphasis on either of the two modes, (3) exhibit low intensity across most dimensions, constituting a weak case of participation altogether. This typology represents a useful conceptual lens through which empirical results of measuring the intensity of the seven dimensions of participation in ALE can be interpreted.

An overview of the seven dimensions is provided in Table 1. We will now elaborate upon each of the dimensions and specify them to a form suitable for investigating participation in ALE.

Table 1

Table 1. Seven dimensions of participation (adapted from Kelty et al., 2015).

Dimension	Description	Specified for ALE participation
1. Educative dividend (ED)	Learning something valuable, esp. learning how to participate effectively	The ability to learn within organisational settings in a way that brings beneficial outcomes
2. Goals and tasks (GT)	Participants not only undertake tasks but also help set goals	The ability to influence goals, content and formats of educational events
3. Resource control (RC)	Participants get to control (own or use) resources, not merely produce them	The autonomy in utilising learning outcomes, increasing capabilities and expanding life opportunities
4. Exit (E)	Capacity to leave without penalty	The ability to leave or abstain from participation in ALE without penalty
5. Voice (V)	Opportunities to 'speak back' in order to influence outcomes	The ability to influence the conditions of education beyond the educational event itself
6. Visible metrics (VM)	Empirical demonstrations of the connection between participation and outcomes	The ability to observe and demonstrate tangible learning outcomes
7. Affective capacity (AC)	Collective effervescence and the experience of being part of an audience	The emotional response to attending educational events and the sense of connection among participants

(1) Educative Dividend (ED): This dimension is based on Pateman's (1976) work on political participation, which argues that participation itself is a *skill that needs to be developed*. Through political participation, individuals develop not only their civic virtue but also gain practical hands-on experience that could be useful across other domains of life. In the context of ALE, this dimension pertains to fostering the *ability to learn within organisational settings* – an essential prerequisite for self-directed learning, which is particularly valuable in adult education (Knowles et al., 2005). This involves developing key skills necessary for effective engagement in educational activities, such as time management, recognising the need for support and actively seeking guidance. Additionally, it ensures that participation yields meaningful and desirable outcomes. This capability is crucial in determining whether adults can engage in learning experiences in a way that is truly beneficial to them.

(2) Goals and Tasks (GT): This dimension draws from a tradition of works on political and labour emancipation, including classical social theorists, such as Durkheim (1964) or Weber (1968). Participation in this sense signifies the ability to partake on the goal-setting and decision-making process as opposed to just completing assigned tasks. Within the ALE field, this dimension refers to the *ability to influence the goals, content and formats of educational events* – for instance, what will be part of the curriculum for the next month of the course, or what will be the main learning goal for the upcoming lesson. These factors contribute to learners' sense of autonomy and their role as co-creators of the learning environment (Brookfield, 1996), ultimately enhancing the effectiveness of the learning process. When learners have limited control over their goals and tasks, their engagement in learning decreases, leading to poorer outcomes (Daniels et al., 2008).

(3) Resource Control (RC): This dimension of participation also utilised ideas of classic social theorists, such as Marx (1964) and Mauss (1990). Resource control (RC) focuses on the ability to determine the allocation or circulation of a resource generated by participation. Since resources are not solely monetary, this dimension within the domain of ALE concerns the degree of control individuals have over the application of their acquired knowledge and skills – both of which are frequently considered as resources for social action (Becker, 1993; Bourdieu, 1990). In essence, it examines *whether participation in education enhances adults' autonomy in utilising learning outcomes across various life contexts*. For example, this could involve applying newly acquired digital skills in the workplace or leveraging communication skills to improve networking opportunities. This principle forms a cornerstone of the highly influential capability approach in ALE (Boyadjieva & Ilieva-Trichkova, 2021), which underscores the expansion of learners' real opportunities and life choices through organised learning while acknowledging that individual capabilities are shaped by both external and internal factors. Examining this dimension enables an assessment of the extent to which the application of acquired skills and knowledge is influenced by external factors – such as one's position in the labour market – as well as internal factors, including age.

(4) Exit (E): This dimension was developed by Kelty et al. (2015) from the work of Hirschmann (1970), who investigated under what conditions dissatisfied individuals opt for exit (as opposed to voicing their concerns) from organisations, markets or political participation. This dimension is focused on *the ability to leave or abstain from participation*. In ALE, this concern translates into the question of whether participation in educational events is genuinely voluntary. Specifically, are individuals who choose to end their participation penalised beyond merely forfeiting the associated benefits? For instance, does opt-out restrict their involvement in community activities or limit career advancement opportunities, such as promotions at work? When participation is effectively compulsory – particularly in job-related training mandated by employers – adults may experience heightened stress and anxiety regarding their educational involvement. Feelings of coercion and a loss of personal autonomy may emerge, potentially fostering resentment towards educational institutions and diminishing intrinsic motivation for learning (Ryan & Deci, 2020). These

factors, in turn, undermine the positive outcomes typically associated with engagement in ALE.

(5) Voice (V): Also, this dimension builds on the work of Hirschman (1970) and serves as a counterpart to the Exit (E) dimension. Voice (V) pertains to the capacity to challenge positions of power and shape the nature of participation. As noted by Kelty et al. (2015), this dimension partially overlaps with the Goals and Tasks (GaT) dimension, as both address the extent to which individuals can influence decision-making processes related to their participation. To differentiate these two dimensions, we refine the application of the Voice (V) dimension within the context of ALE, focusing on participants' *ability to influence the conditions of education beyond the educational event itself*. Specifically, this includes their ability to shape the conditions of their involvement, such as choosing whether to enrol in a particular course or workshop. In other words, this dimension encompasses the capacity to advocate to external entities – such as employers, unions or community organisations – that may impose attendance requirements. Such a capacity is traditionally considered a precondition for democratic, non-oppressive participation in ALE (Brookfield, 1996).

(6) Visible Metrics (VM): This dimension concerns the way in which participation outcomes are made available to participants. A classic example from the domain of political participation is polling. A key feature of this dimension is the ability of individuals to monitor their contributions as it increases the likelihood of continuing participation (Pateman, 2012). In the context of ALE, this translates into *the ability to observe and demonstrate tangible learning outcomes*. While this may include obtaining certificates, we prefer a broader formulation to encompass a wider range of results, like acquiring and refining skills. When participation in an educational event yields visible outcomes for individuals, it not only enhances their engagement but also fosters a sense of competence, thereby reinforcing a motivational cycle (Daniels et al., 2008).

(7) Affective Capacity (AC): This dimension draws from the concept of 'collective effervescence' by Emile Durkheim (1915) and concerns the collective emotional experience of participation. This dimension does not centre on communication between participants and positions of power, as seen in the dimensions of Voice (V) and Exit (E) above, but rather on interactions among participants, their emotional connection and a sense of belonging. In the context of ALE, this translates into *the emotional response to attending educational events and the sense of connection among participants*. According to classical scholars (Brookfield, 1996), a strong sense of relatedness tends to enhance the effectiveness of adult learning and is one of the key motives for participation itself (Boshier, 1971).

Method

Participants

To contextualise our research, it is important to note that the survey was conducted in the Czech Republic, which has a distinctive adult education system. This system is highly liberalised, with a minimal emphasis on formal adult education. The majority of non-formal education is provided by employers, who frequently cover the cost of training for their employees (Kalenda, 2024).

The sample we utilised in this study consisted of 851 adult learners who participated in any type of NFE in the past 12 months. This sample was drawn from a larger representative stratified quota sample of 1,860 adults aged 25–64 years from the Czech Republic. In terms of internal structure, the larger quota sample reflected gender, age, education, region and size of residential location ratio to the overall population. Data collection was carried out online using the Computer-Assisted Web Interview (CAWI) method during the summer of 2023 by addressing online adult population by specialised data-collection agency with the response rate of 36.2%.

In all phases of the survey process, emphasis was placed on the ethical principles of research, especially anonymity, respecting the ICC/ESOMAR International Code (International Chamber of Commerce/ESOMAR, 2016). Electronic informed consent was obtained from all participants, and ethical implications, along with the safety and rights of all respondents, were respected.

Measure

To make our results comparable with data from AES in 2022 (Eurostat, 2023a), we adhered to the NFE definition used in the AES waves (see Supplementary Table S1). Participants in NFE were selected based on a dichotomous variable of involvement in various forms of organised adult education outside of the formal education system that does not result in official certification at the ISCED level, such as courses, workshops, seminars, on-the-job training or private lessons for either personal or job-related reasons within the last 12 months (Eurostat, 2023b). The questionnaire was administered in the Czech language.

Based on our adaptation of the seven dimensions of participation (Kelty et al., 2015) for ALE (see Table 1), we designed a battery of 14 items (two items per each dimension). The items were constructed anew and piloted for understanding on a convenient sample. Each of the 14 items consists of a statement (see Supplementary Table S1 for their full wording) and respondents were asked to use a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The statements are designed to capture the experiences and perceptions of the participants. The sequence in which the statements were presented to respondents was randomised. The factor (dimension) structure of a seven-factor model as a whole was initially validated on the sample of participants of NFE ($n = 851$) and met the parameters of measurement adequacy based on confirmatory factor analysis (CFA: $x^2(56) = 248.321$; $p < .001$; CFI = .966; TLI = .944; RMSEA = .064, LO 90 = .056, HI = .072). Therefore, recommended fit indices (Stone, 2021) for the CFI and TLI were higher than .90 (≥.95 good), and the RMSEA cut-off point was set to an upper limit of .08 (≤.06 good). We did not rely on the x^2 statistic given its sensitivity to large sample sizes (Fabrigar et al., 1999).

In addition to the CFA, Supplementary Table S2 shows reliability estimates including Cronbach's α and Gutmann's λ^2 of the model and each factor separately across the pooled sample. The scales were expected to be respectable, with coefficients exceeding the value .700 (DeVellis, 2017). Considering the number of items, the results suggest good reliability.

Data analysis

The first step was to create an empirical framework for the identification and description of types of adults based on their perception of seven dimensions of NFE participation. Therefore, measures of central tendency with scores above average and high in the seven dimensions of participation were calculated. Exploratory cluster analysis with the use of IBM SPSS Statistics v. 29.0.0.0 was performed dividing the sample into subgroups based on observed patterns of the factor scores of dimensions of participation in NFE. Clusters were identified solely based on the results pertaining to the dimensions of participation; sociodemographic variables were considered only after the clusters were identified. The K-means algorithm was applied as a faster procedure designed for large-scale data sets that identifies k number of centroids and then allocates every data point to the nearest cluster as it attempts to keep the centroids as small as possible (A. Field, 2009; Jain et al., 1999). This analysis does not provide a metric for the correct number of clusters present in the data. We chose the final solution based on Valentine and Darkenwald (1990) recommendations of the importance of any given factor based on an inter-individual comparison of the means of the sample ($n = 851$) and of each cluster without reference to any external standards. To analyse the impact of relevant variables on membership to each cluster, logistic regression models were calculated. Here, the cluster

solution represents a dependent variable, where 1 = belonging to a given cluster and 0 = belonging to another cluster.

Results

RQ1: What are the characteristics of participation in NFE based on the Kelty's multi-dimensional approach and associated sociodemographic patterns among adult learners?

To answer the first research question, we calculate means per each dimension and based on them calculate their scores above the means for various sociodemographic categories. Table 2 indicates that the mean scores range between 4.09 (*SD* = .87) for D1 (ED) and 2.98 (*SD* = 1.07) for D2 (GT) (see also Supplementary Table S1 for means of the individual items). Statistics of skewness and kurtosis did not exceed the value of −2 to +2 for skewness and −7 to +7 for kurtosis (Byrne, 2010), suggesting no serious violation of the data dispersion. Overall, about 56% of all observations scored above average and 32% scored at least one-half of *SD* above the mean ('High' in Table 2).

The main sociodemographic patterns discernible from Table 2 (see also Supplementary Table S3 for means of the same categories) relate to categories of education, employment status, occupation status and company size. First, there is a clear tendency for respondents with higher levels of education to score higher across almost all of the dimensions (except D2 and D7). Second, the category 'self-employed' scores higher than others in D1 – D5. This is also true for the category 'self-employed', measured as position in employment and it is also probably related to high scores in the category 'agreement/no contract', as self-employed individuals fall into this category if asked on employment contract. Third, occupation status seems to play an important role for scores in D1 – D6, with ISCO 1–2 scoring higher, than ISCO 8–9. Fourth, the effect of company size is also clearly pronounced, with large companies (250 + employees) scoring significantly lower across D1 – D6, especially if compared with small companies (less than 50 employees).

RQ2 What is a typology of participants in NFE based on the multi-dimensional approach to participation?

We performed a series of cluster analyses, carefully evaluating our choice of the presented clustering. The final two-cluster solution (see Table 3) was identified while considering the similarity of observations and the proportionality of cases within the clusters. We also considered a three-cluster solution, but we concluded that it did not bring any additional insight as it represented only a gradation of the two-cluster solution. That is, the three-cluster solution introduced a third cluster with medium values across most of the dimensions, while including less than 10% of NFE participants.

The two-cluster solution differentiates our sample into two subgroups of NFE participants. For this purpose, in this article, we label them as belonging to high engagement participation, or low engagement participation. First, the cluster of *high engagement participation* (HEP) is defined by high scores across most dimensions, specifically: educative dividend, resource control, exit, voice and visible metrics. Second, the cluster of *low engagement participation* (LEP) exhibits low scores on all dimensions, except affective capacity. According to the results, most of the dimensions differentiated scores between both clusters and thus highlighted their importance. The only dimension that failed to distinguish between the clusters was the affective capacity of participation, as it was present in similar values across the clusters. Also, the average value of the goals and task dimension in HEP was at the same level as the average value of this dimension for the whole sample, marking a dent in the otherwise high average values for other dimensions in this cluster.

Following Valentine and Darkenwald (1990), the definition 'High' in Table 3 for the HEP cluster with respect to D1 (ED) indicates that this cluster reached a higher level of educative dividend from

Table 2. Scoring above average and high in the seven dimensions of participation.

	D1 (ED)		D2 (GT)		D3 (RC)		D4 (E)		D5 (V)		D6 (VM)		D7 (AC)	
							M (*SD*)							
Dimensions of participation	4.09 (.87)		2.98 (1.07)		3.96 (.94)		3.50 (1.25)		3.53 (1.10)		3.91 (.90)		3.68 (.86)	
Sociodemographic characteristics	>M	High	>M	High	>M	High	>M	High	>M	High	>M	High	>M	High
Gender	%													
Male	45	26	61	27	63	42	45	31	46	26	62	38	53	26
Female	52	34	64	26	66	44	50	39	54	31	64	38	48	26
Age														
25–34 years	40	23	66	22	56	35	52	38	52	31	56	30	41	20
35–44 years	43	24	58	25	59	36	43	31	46	23	58	37	50	28
45–54 years	56	40	62	31	71	50	46	36	49	29	67	42	56	28
55–64 years	56	30	67	28	76	55	49	34	52	33	74	41	55	29
Education														
ISCED 3c or lower	40	26	65	26	53	35	36	25	39	22	55	33	52	29
ISCED 3ab-4	51	33	61	25	68	46	50	37	48	28	67	39	53	28
ISCED 5–8	52	29	63	28	70	45	53	40	60	34	65	39	46	22
Marital status														
Married/living with a partner	51	31	62	28	66	44	47	33	49	29	65	40	50	27
Divorced/widower/widow	50	37	70	24	67	49	49	38	51	30	68	45	54	29
Single	40	22	61	22	60	37	48	36	50	28	56	28	48	22
Care for children under 3 years														
Yes	46	33	65	25	60	41	55	40	52	30	59	35	46	24
No	49	29	62	27	65	43	46	34	49	28	64	38	51	26
Size of residence														
Up to 1,000	47	28	59	20	68	45	43	29	47	24	58	39	57	34
1,001–5,000	49	31	62	27	66	42	47	35	47	30	62	37	54	27
5,001–20,000	46	32	59	26	62	40	48	34	47	30	60	35	49	26
20,001–100,000	52	31	67	28	63	47	48	37	48	27	66	40	51	29
More than 100,000	46	27	65	28	63	41	49	36	55	31	66	37	44	19
Employment status														
1 FTE	47	27	62	27	65	42	43	30	46	26	63	37	52	27
0.5 or less	47	24	65	22	54	37	45	34	49	24	59	43	46	26
Self-employed	60	44	70	30	79	59	73	61	70	53	64	40	53	27
Other	51	38	61	24	60	44	56	46	61	35	63	33	45	21
Occupation status														
ISCO 1–2	50	32	65	31	72	47	50	36	53	31	67	43	53	26
ISCO 3–7	49	27	61	26	65	46	46	31	42	27	64	35	55	26
ISCO 8–9	31	18	63	22	50	31	28	17	33	14	50	27	47	27
Other	47	29	60	21	60	39	48	37	51	29	60	37	48	29
Employment contract														
Permanent	47	27	63	26	64	42	43	29	45	25	63	36	52	27
Temporary	44	30	60	27	66	36	45	36	56	30	58	44	50	29
Agreement/No contract	61	41	66	26	77	59	76	59	66	46	71	49	50	24
Position in employment														
Employee without subordinates	46	27	61	26	62	41	41	30	45	26	64	37	53	29
Employee with subordinates and top manager	49	27	64	28	66	41	48	31	49	25	60	40	48	22
Self-employed/other	56	42	66	26	69	52	66	55	66	44	64	36	47	23
Company size														
Less than 50 employees	53	32	69	30	68	50	53	41	55	37	65	40	50	28
50–249 employees	51	29	60	28	71	42	49	32	51	28	66	42	54	29
250 and more employees	42	25	59	22	60	36	39	26	40	19	60	34	51	25

>*M* = proportion of adults scoring above average of given category; High = proportion of adults scoring at least one-half of *SD* above the mean of given category.

participation when compared with the sample as a whole. Specific values of means and standard deviations can be found in Supplementary Table S4. In this analysis, the two broad modes are clearly divided between high and low contributions across average rates of dimensions of participation, and all are statistically significant.

Table 3. Two-cluster solution and their scores on the seven dimensions of participation in NFE.

		Dimensions of participation						
Cluster	n (%)	D1 (ED)	D2 (GT)	D3 (RC)	D4 (E)	D5 (V)	D6 (VM)	D7 (AC)
HEP	483 (57)	High	-	High	High	High	High	-
LEP	368 (43)	Low	Low	Low	Low	Low	Low	-

Cluster means were considered to be: very low if they were a *SD* or more below the mean; low if they were at least one-half but less than one full *SD* below the mean; average if they fell within a half of *SD* of the group mean (for visual clarity it is expressed in the table by a hyphen); high if they were at least one-half but less than one full *SD* above the mean; very high if they were a *SD* or more above the mean.

Subsequently, we performed binary logistic regression analysis with the aim to create a complex model and to see the impact of a number of predictors on the likelihood that participants belong to identified clusters. The model contained the same sociodemographic variables as included in the previous analysis. As dependent variable, membership of identified cluster identified in previous stage was used. Seven hundred and fifty-two (88%) cases were included in the analysis, with 99 (12%) cases removed due to missing values. A check of multicollinearity was included (Tolerance value of >.20, and VIF <5, i.e. in accordance with the general cut-off points for all predictors). The results of the regression analysis are included in Table 4.

Table 4. Results of binary logistic regression of membership to cluster HEP.

						Collinearity Statistics	
Membership to cluster HEP	B	S.E.	Wald	*df*	Exp(B)	Tolerance	VIF
Sociodemographic variables							
Gender: Male (ref.)	0.237	0.175	1.836	1	1.268	.790	1.266
Age: 25–34 years (ref.)			2.212	3			
35–44 years	− 0.154	0.220	0.490	1	0.857	.618	1.618
45–54 years	0.025	0.233	0.011	1	1.025	.505	1.980
55–64 years	0.231	0.288	0.642	1	1.260	.530	1.886
Education: ISCED 3c or lower (ref.)			5.922	2			
ISCED 3ab-4	0.361	0.199	3.298	1	1.435	.610	1.640
ISCED 5–8	0.539	0.227	5.661	1	1.715	.519	1.926
Marital status: Married/living with a partner (ref.)			0.032	2			
Divorced/widower/widow	− 0.040	0.245	0.026	1	0.961	.867	1.153
Single	− 0.019	0.202	0.009	1	0.981	.775	1.291
Care for children under 3 years: Yes (ref.)	− 0.361	0.247	2.141	1	0.697	.795	1.258
Size of residence: Up to 1,000 (ref.)			5.620	4			
1,001 to 5,000	0.321	0.251	1.632	1	1.378	.536	1.865
5,001 to 20,000	− 0.036	0.264	0.019	1	0.964	.570	1.755
20,001 to 100,000	0.334	0.256	1.701	1	1.397	.562	1.780
More than 100,000	0.415	0.240	2.977	1	1.514	.504	1.986
Job-related variables							
Employment status: 1 FTE (ref.)	− 0.458	0.285	2.576	1	0.633	.375	2.668
Occupation status: ISCO 1–2 (ref.)			3.520	3			
ISCO 3–7	− 0.202	0.210	0.928	1	0.817	.755	1.325
ISCO 8–9	− 0.416	0.282	2.178	1	0.660	.693	1.443
Other	− 0.337	0.213	2.504	1	0.714	.716	1.396
Employment contract: Permanent (ref.)			4.297	2			
Temporary	0.277	0.240	1.326	1	1.319	.901	1.110
Agreement/No contract	0.730	0.383	3.625	1	2.075	.505	1.981
Position in employment: Employee without subordinates (ref.)			7.382	2			
Employee with subordinates and top manager	0.181	0.181	0.999	1	1.198	.879	1.138
Self-employed/other	1.066	0.411	6.736	1	2.903	.381	2.626
Company size: Less than 50 employees (ref.)			9.352	2			
50–249 employees	0.270	0.218	1.532	1	1.310	.700	1.429
250 and more employees	− 0.335	0.189	3.123	1	0.716	.666	1.502
Constant	0.025	0.385	0.004	1	1.025		

B = statistical estimate of regression coefficient Beta; S.E. = Standard error. Wald = test statistics for Wald test; *df* = degrees of freedom; *p* = value of statistical significance; Exp(B) = statistical estimate of the exponentiated value of the Beta coefficient, in the text referred as the odds ratio.

The full models including all predictors were statistically significant ($x^2 = 60.126$, $df = 23$, $p < .001$), and the proportion of variance in the dependent variable associated with the predictor (independent) variables was between .08 (Cox & Snell R^2) and .10 (Nagelkerke R^2). In other words, the model as a whole explained between 8% and 10% variability by the predictors. Another piece of information about the usefulness of the model represents model sensitivity and specificity, i.e. ability to predict the correct category (belonging/not belonging to identified cluster) for each case. Overall, the model was able to correctly classify 63% of cases. It was also able to correctly classify 77% of respondents who belonged to the HEP cluster and 46% of respondents without HEP membership.

As can be seen in Table 4, two of the independent variables made a statistically significant contribution to the model. After controlling for all the other variables in the model, education indicated that participants with higher education (ISCED 5–8) had about 1.7 times higher chance to fall into the HEP cluster compared to those with secondary or lower education (ISCED 3c or lower). Self-employed or other (i.e. students, people in the household or on maternity/parental leave) adults were almost three times more likely to belong to the HEP cluster than those employees without subordinates.

Discussion

In this article, we inquire into the nature of participation in ALE. To this end, we introduced a novel conceptual framework for operationalisation and measurement of participation in ALE based on the work of Christopher Kelty and his colleagues (Kelty & Erickson, 2018; Kelty et al., 2015). Following this theoretical framework, we explored the empirical fit of a multi-dimensional approach to participation on a national sample of participants in NFE.

The first research question (RQ1) was concerned with the characteristics of participation in NFE based on the multi-dimensional approach and associated sociodemographic patterns. As shown in the results section (see Table 2), there are clear sociodemographic patterns related to scores in the dimensions. The relevant categories proved to be education, employment status, occupation status and company size. The way these categories are related to higher or lower scores across the dimensions is not entirely consistent with the main inequalities in participation in organised learning (Boeren, 2016; Rubenson, 2018).

It is perhaps not surprising that factors usually associated with low levels of participation such as lower education levels and occupation status were found here to be associated with low scores across the dimensions. In this sense, our results may provide evidence for a *'double penalty'* in the participation of low-educated adults and those with lower occupational status. These individuals not only have a lower likelihood of participating in NFE, but when they do participate, they are much more likely to be involved in a low-engagement form of participation. This could potentially limit the positive outcomes of their involvement.

However, the role of employment status and company size is quite unexpected. Self-employment is usually associated with lower levels of overall participation (Boeren, 2016; Rubenson, 2018), but in this study, it is associated with higher scores across the dimensions. It appears that once individuals from this category participate in organised learning, they tend to be more highly engaged. Conversely, individuals working in large companies tend to participate more in NFE, but their scores across the dimension were low and indicated weak engagement. We can speculate that this is a sign of bureaucratisation of learning in large organisations.

With regard to the characteristics of participation in NFE, it is also important to note that while most of the dimension scores were consistent with each other (i.e. a certain sociodemographic category scored consistently across most of the dimensions), there are two outliers. First, D2 (Goals and Tasks) is an exception with its overall scores lower than those of other dimensions. Even respondents with high levels of education score comparatively low in this dimension. The lowered ability to set goals could be interpreted in relation to the fact that currently, in the Czech Republic,

Table 5. Typology of participation.

Dimension	Specification for ALE	HEP	LEP
1. Educative dividend (ED)	The ability to learn within organisational settings in a way that brings beneficial outcomes.	High	Low
2. Goals and tasks (GT)	The ability to influence goals, content and formats of educational events.	Mid	Low
3. Resource control (RC)	The autonomy in utilising learning outcomes, increasing capabilities and expanding life opportunities.	High	Low
4. Exit (E)	The ability to leave or abstain from participation in ALE without penalty.	High	Low
5. Voice (V)	The ability to influence the conditions of education beyond the educational event itself.	High	Low
6. Visible metrics (VM)	The ability to observe and demonstrate tangible learning outcomes.	High	Low
7. Affective capacity (AC)	The emotional response to attending educational events and the sense of connection among participants.	Mid	Mid

Mid = medium.

most NFE is organised and funded by employers (Kalenda, 2024). It is, therefore, often not the participants who hold the initiative and set learning goals. Second, the scores in D7 (Affective Capacity) seem largely unaffected by sociodemographic characteristics. This means that respondents across categories are able to connect and share emotions with other learners. We can only speculate that for some, this might mean sharing experience of coping with involuntary demands, while for others, this might mean bonding in the setting of their choosing.

Following our second research question (RQ2), we identified two clusters of participants – HEP and LEP (see Table 5). These clusters do not correspond to the 'radical-direct' and 'experiential-affective' modes of participation identified by Kelty and Erickson (2018). However, Kelty and Erickson (2018) also identify cases of participation, which are strong (or weak) across all of the dimensions. It seems that the HEP and LEP clusters correspond rather to this distinction. This means that in an all-or-nothing fashion, HEP integrates both the 'radical-direct' and 'experiential-affective' modes of participation, while LEP is weak across the board (except for the affective dimension, see discussion of RQ1 above).

We also examined the sociodemographic factors that lead to individuals belonging to the identified clusters. Consistently with results from RQ1, regression analysis revealed that education level and employment status are statistically significant factors influencing whether participants belong to HEP or LEP clusters. While occupational status and company size were not statistically significant, they showed notable percentage differences.

Conclusion

The aim of this article was to introduce a multi-dimensional approach to participation in ALE and to demonstrate its empirical relevance. This approach enables us to measure the characteristics of participation itself and to construct a new typology of participants. Unlike previous approaches, the proposed typology considers not only the individual characteristics of adults but also the attributes of the participation situation. As shown in Table 5, these participation types do not correspond directly to intrinsically/socially or extrinsically motivated adults (Boshier, 1971; Houle, 1961), nor do they clearly align with individuals who have positive or negative attitudes to ALE (Hayes & Darkenwald, 1990) or emotions associated with organised adult learning (Kalenda et al., 2024), although these empirical correlations cannot be entirely dismissed.

This study has some limitations that should be acknowledged. The first drawback of the selected research method is based on cons of self-reports, especially social desirability bias. From the methodological perspective: (i) criterion validity was not tested due to the lack of other measured constructs within the survey, and (ii) test-retest reliability and predictive validity were not considered due to cross-sectional nature of this research; (iii) this study included a rather specific

category of individuals: Czech adults participating in NFE (which is currently highly employer driven). To alleviate these three methodological limitations, a large (and longitudinal) data set accounting also for other types of adult education and allowing for international comparison would be needed. Nonetheless, the presented structural validity and reliability of measure confirmed the solid structure.

Considering the missing values, results covering logistic regression analysis should be taken with caution as it does not apply to the complete sample. However, the model only serves to provide additional support to findings of other presented analyses and the reduced sample entering regression analysis was not fundamentally different in terms of sociodemographic characteristics from the described 851 adult learners who participated in any type of NFE in the past 12 months.

Further research could refine the survey instrument by adding more items per dimension. The clustering of participants into HEP and LEP also warrants developing a composite scale of engagement in ALE, which would include indicators from all seven dimensions. A further potential direction is to explore the possible overlap between motivation, attitudes and dimensions of participation to develop an even more nuanced typology of ALE participants. Another valuable endeavour would be to investigate the relationship between perceived barriers to participation and dimensions of participation. This could involve examining whether low-engagement participants face strong dispositional barriers, such as negative attitudes towards ALE, but experience low institutional and situational barriers as defined by Patricia Cross (1981). Furthermore, a focused enquiry could be aimed at the experience of ALE participants with regard to voluntariness and other related issues. Finally, it is worthwhile to explore whether this typology is applicable in different institutional contexts, such as formal adult education, and in various national contexts.

Disclosure statement

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

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics committee approval statement

The study was approved by the Ethics Committee of Tomas Bata University in Zlín on 19 May 2023.

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