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# Examining barriers to participation in further and continuing education in Germany: Why a regional perspective is (still) important

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**Abstract** Further and continuing education is not only important for individual employability, but also for regional development. Therefore, improving participation in further and continuing education and removing barriers to participation are key concerns of regional education governance. The present study was conducted in a peripheral region of Rhineland-Palatinate in western Germany, where the annual participation rate in continuing education is relatively low compared to other geographic areas in Germany. This quantitative study was designed to understand: (1) To what extent adult learners engage in continuing education within their habitual lifelong learning process? (2) Which circumstantial factors influence their participation in continuing education? And, (3) what are the barriers hindering their participation? We found that for two-thirds of adult learners, a precondition for their enrolment in a continuing education course was the satisfaction of both work-related and private life-related factors. The authors' findings point towards the need for flexible study programmes which learners can fit to the demands of their work and life.

**Keywords** adult learning; self-directed learning; further and continuing education; digital age; contextual conditions

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## Introduction

The evolution of our digital age has led to rapid change, with the dynamics of knowledge in society and economy transforming the conditions of professional work and learning (Nerland 2018; Nerland and Jensen 2010). Consequently, this transformation has increased the need for adults to engage in further and continuing education – in order for them to meet the changing demands of their working and living conditions (see Ilieva-Trichkova and Boyadjieva 2019; Morris 2019a, b, 2021). It seems likely that the need for further training has increased even

more due to the acceleration of digitalisation prompted by infection protection measures introduced somewhat suddenly in the face of the COVID-19 pandemic. A recent estimate of the Organisation for Economic Co-operation and Development (OECD) suggests that “across the OECD region, non-formal learning opportunities may have decreased by 18% and informal learning opportunities by 25%” (OECD 2021, p. 17) compared to pre-pandemic times.

This is concerning given that non-formal and informal learning enables adult learners to upskill and thereby adjust to changing conditions – this is particularly relevant to the COVID-19 pandemic, a situation where changing conditions were amplified. Specifically, continuing education enables employees to keep up with changes within their fields of work, avoiding obsolescence of their knowledge and skills (Boyer et al. 2014; Oddi 1987).

In particular, adult learners’ engagement in continuing education is likely to form part of their competence to adapt to changing conditions that they might face at work and at home. Indeed, in our digital age, adaptivity has been labelled as the *conditio sine qua non* of professional expertise (Ward et al. 2018). Moreover, the process of adult engagement in continuing education throughout their life course also enables individuals to upskill in the event of changing economic conditions. Assisting adults in gaining qualifications appropriate both for the present and future economic environment means equipping them with skills demanded and necessary for employment, and providing them with some protection against unemployment (e.g. Barnes et al. 2016; Ilieva-Trichkova and Boyadjieva 2019).

The study we present in this article examines the framework conditions for participation in continuing education from the perspective of regional development and educational management. The fact that this study was funded by and conducted with the support of the German Federal Ministry of Education and Research indicates a wider societal interest in adults engaging in continuing education. It seemed likely that in addition to individual factors, circumstantial and societal conditions might also be important for participation in continuing education. Therefore, the purpose of our study was to find out more about factors conducive to participation and barriers hindering it. For regions unable to meet their demand for skilled workers through training new staff and employing immigrants, motivating their existing workforce to participate in continuing education is a central lever for economic development. Therefore, it is important for regional education governance to better understand the specific local situation regarding continuing education.

We conducted our study in a geographical region in Germany that has been identified as having lower levels of adult participation in continuing education than other regions, which

provided an important study context (Wittenbrink and Frick 2018). Being based on very specific regional data, our study thus represents a highly interesting example of investigating the uptake of continuing education, which is not covered by larger studies on education in the European Union (EU) or by the statistical data of its member states.

This article is organised into five main sections. We begin by considering how regional differences and contextual factors influence participation in continuing education. We take into account personal, circumstantial and societal conditions. Next, we present the study context and aims, and our three research questions, before describing our method. We then present our results in relation to each of our research questions, and analyse our findings in the section headed “Discussion and conclusion”.

### **How regional differences and contextual factors influence participation in continuing education**

Data relevant to continuing education are collected at the European level through a number of surveys, including the Labour Force Survey (LFS), the Adult Education Survey (AES), the Continuing Vocational Training Survey (CVTS), the European Working Conditions Survey (EWCS), the European Skills and Jobs Survey (ESJS) and the Programme for the International Assessment of Adult Competencies (PIAAC). Dieter Dohmen et al. (2019) provide an overview of the data sets and highlight the differences that need to be taken into account when interpreting such surveys. Dohmen et al. also provide an overview of participation in continuing education in EU member states and point out the differences between the surveys. According to the AES data, the total participation rate in continuing education in Germany stood at 52% in 2016 (ibid.). In a comparison of EU member countries, this puts Germany in the group with high participation in continuing education (ibid.). In 2018, the participation rate in (non-formal) continuing education of the German adult population (aged 18–64 years) rose to 54% according to AES data (BMBF 2019, p. 58).

Research has identified various factors that have an influence on participation in continuing education. In addition to educational science and especially the sub-discipline of adult education, insights from the fields of sociology, psychology and philosophy are also important. Theoretical approaches include rational choice, human capital theory, but also developmental empiricism (milieu theory). These can be roughly divided into macro- and micro-perspective approaches or into self-selective and externally selective processes of participation in continuing education. Approaches assigned to the micro level refer to the

relevance of specific formats of continuing education. Therefore, differing participation rates in continuing education are often explained by referring to inadequate formats. Macro-perspective approaches from social science disciplines look at continuing education against the background of socio-economic backgrounds.

There is a wealth of research on participation in continuing education in Germany, including the work of Ewelina Mania (2018), Sarah Widany (2014), Ekkehard Nuisl and Katrin Heyl (2010) and Horst Siebert (2006). By combining the findings of several studies, it has been possible to identify the influence of gender, age, school education, class affiliation and occupational status (Wittpoth 2018). This concerns not only the field of (non-)formal education and training, but also the field of informal adult learning (Kaufmann 2016).

In particular, Gerhild Brüning and Helmut Kuwan (2002) have identified a number of disadvantages that affect participation in continuing education. They distinguish between subjective factors (e.g. learning interests, learning socialisation), social factors (e.g. milieu, employment, regional affiliation), structural conditions (e.g. organisation and quality of the offers) as well as political conditions (e.g. legal regulations, support programmes). Helmut Kuwan and Ann-Charlotte Larson (2008, p. 59) highlight the following aspects as relevant for participation in continuing education:

1. General attitudes towards life-long learning;
2. Learning dispositions (e.g. fear of failure, self-confidence);
3. Individual preference for learning methods;
4. Personal life situation (e.g. family situation, health problems, etc.);
5. Learning environment (at work and at home);
6. Institutional framework (time-schedule of courses, costs, regional disparity etc.);  
[and]
7. Transparency (need for more information or consultancy on life-long learning)

It has been shown that adults under 25, the unemployed, disabled people, migrants, single parents, low-skilled and older people, prisoners, and employees from working-class backgrounds have a low participation in continuing education (see Brüning 2002, p. 37).

A study by Alexander Yendell (2013) investigating vocational education and training in Germany shows that overall participation in continuing education has increased because more and more people are working in the knowledge-intensive service sector, in which continuing education plays an important role. Women are also participating more in continuing education due to increased employment. The participation of older people has increased too, which can be attributed to demographic factors. Results point towards the importance of professional

status for participation in continuing education. Managers, for example, are more likely to participate in continuing education than employees at lower hierarchical levels.

In the face of increasingly scarce resources in terms of money and time, individuals' decisions to engage in continuing education are currently increasingly guided by expectations of a positive benefit. At the same time, there are only a few findings on participants' perceptions of benefits. The Benefits of Lifelong Learning (BeLL) study (Manninen et al. 2014) investigated the individual and social benefits perceived by adult learners who participated in liberal adult education courses in Europe. From an adult education perspective, benefits can be defined as the satisfaction of (educational) needs through learning and educational outcomes, or as a subjectively perceived value resulting from that satisfaction of those needs. The study condenses what learners consider to be benefits of participating in general adult education into 14 categories, such as social networks, mental well-being, self-efficacy, meaningfulness of life, learning experiences (especially in relation to the joy of learning and motivation to learn) and competences, including their applicability in everyday and work contexts (ibid.).

In addition to these factors, the administrative entity of the region or, in the case of Germany, the federal state has also emerged as an important facilitator of participation in continuing education. For example, people in regions with more than 500,000 inhabitants in western Germany are more likely to participate in continuing education than inhabitants of less populated areas. In the five former East German federal states, participation in continuing education added up to 48% of adult citizens aged 18–64 in 2018, while the rate in the eleven federal states of former West Germany stood at 56% (BMBF 2019, p. 4).

The first studies to examine regional differences in Germany date back to the 1970s. Addressing the need for a legally regulated nationwide provision of continuing education, they focused on differences between urban and rural areas (Böhm-Kasper et al. 2018). Theoretically, the analysis is linked to the connection between socio-spatial conditions and specific collective living situations, which are described with the concept of *sociotopes* (Rutschky 1982). For example, a study conducted by Martin Götte in the late 1950s in Dortmund, a large industrial city in Germany, showed that the influence of neighbourhood on participation in continuing education was higher than proximity to a training provider (Götte 1959).

The “German Atlas of Continuing Education” (*Deutscher Weiterbildungsatlas*) based on the German microcensus, depicts these regional differences for Germany in a more detailed way (Bürmann and Frick 2016; Wittenbrink and Frick 2018). The basis is formed by

96 spatial planning regions (*Raumordnungsregionen*), which are large-scale, functionally delimited spatial units that are essentially formed around an economic centre and thus take into account commuter flows in particular (Martin et al. 2015, p. 19). In this context, regional disadvantages as well as opportunities for participation in continuing education are derived from the difference between actually observed participation in continuing education and the participation to be expected on the basis of the socio-economic and demographic background of the regional resident population and regional structural characteristics (ibid., p. 22). Accordingly, differences in participation in continuing education are due to structural differences, such as the nature of the training on offer or distances to the training centre, but also regional needs due to specific characteristics of the population. The 2018 edition of the Atlas depicts not only strong differences of between 7.8% (minimum) and 15.3% (maximum) at federal state level, but even greater differences, between 2.3% and 22.7%, at the local level (Wittenbrink and Frick 2018, p. 4).

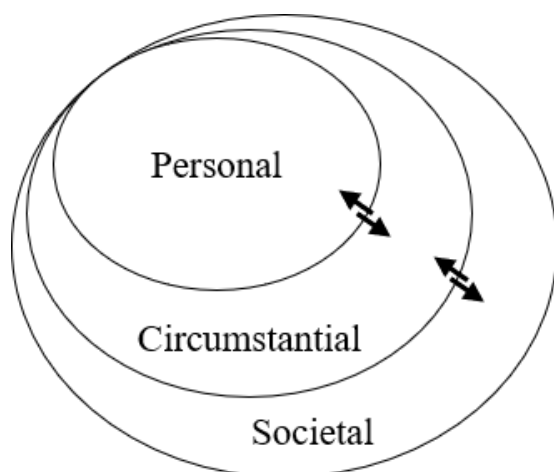
In this respect, Katja Görlitz and Sylvi Rzepka (2017) investigated the connection between participation in vocational education and training (VET) and the regional context. Their study is based on data from the longitudinal German National Educational Panel Study (NEPS): Starting Cohort 6 – Adults (Adult Education and Lifelong Learning) (Blossfeld et al. 2011). Görlitz and Rzepka point out that increasing the number of training providers only has a significant positive effect on participation rates in regions with a low density of providers, compared to regions with an average or above-average supply. The reason for this may be related to corporate in-house education programmes, which were not accounted for in the study.

In addition, Sylvi Rzepka and Marcus Tamm (2016) investigated the relationship between the number of regional companies in a sector and the individual frequency of continuing vocational education. Using worker-level data for Germany on training participation and on training duration, they were able to show that the frequency of continuing vocational education decreases when the number of companies in a regional sector increases. The results can be interpreted to mean that a high demand for skilled workers decreases the motivation for continuing education, since there is neither a danger of unemployment, nor much of an incentive to enrol.

There are a number of studies from countries other than Germany which also found regional differences, e.g. research conducted in the UK by Andrew Jenkins and Alison Wolf (2004) or a Canadian study by Kjell Rubenson et al. (2007). Against the backdrop of the COVID-19 pandemic, the question of the relevance of regional offerings has now become

more acute, in the face of clear trends towards an increase in online offerings. However, the results of a recent study by Martin Ehlert et al. (2021), also based on NEPS data, show that digital learning activities of employed people during the COVID-19 crisis in fact led to greater inequality in educational participation; thus regional continuing education offers can still be regarded as an important contribution to educational equity.

In sum, contextual factors that influence participation can be classified into three distinctive categories: *personal* (the learner), *circumstantial* (the learner's immediate environment), and *societal* (the wider influential factors) (see Dammrich et al. 2014). These factors are depicted in Figure 1, and further explained in the subsections below, substantiated with evidence from empirical studies. There is reason to suppose that personal, circumstantial and societal factors are likely to have an influence on whether or not an adult learner enrolls in a continuing education course. In our review of these contextual factors, we consider them to be closely intertwined and likely to have bidirectional influences on other inherent conditional factors (see Figure 1).



**Figure 1** Contextual factors onion model. Depicting conditions that influence participation in continuing education

*Note:* One might be inclined to think that the evolution of our digital age has led to societies in which circumstantial and societal conditions are rapidly changing. By comparison, personal conditions, as we argue in the section labelled “Personal conditions”, generally seem to be more stable.

### *Personal conditions*

Figure 1 identifies personal contextual factors (the innermost onion layer) as the central influence on whether continuing education is likely to be carried out. Indeed, empirical studies conducted in a variety of educational settings conclude that personality characteristics



of adult learners have a strong influence on whether or not they choose to participate in continuing education. Such characteristics include, in particular, an individual's openness, their conscientiousness, their optimism and their work drive (e.g. Kirwan et al. 2014; Lounsbury et al. 2009; Major et al. 2006; Oddi 1986). These characteristics are part of a "proactive personality", in which learners take the initiative necessary to proactively drive the process of self-directed continuing education (see Knowles et al. 2015). A proactive personality, which is considered a stable disposition, has been defined as the willingness to "take personal initiative in a broad range of activities and situations" (Seibert et al. 2001, p. 847). Meanwhile, there is growing empirical evidence that adult learners with certain personality traits are more likely than others to be intrinsically motivated to plan, undertake and evaluate – in a self-directed and determined manner – a course of continuing learning that fits their personal life. Such persons demonstrate high, or higher, levels of self-directed learning "readiness".

In addition, Richard Desjardins (2011) has identified a number of personal conditions that influence participation in continuing education. Also, Kjell Rubenson (1987) points to the importance of self-concepts such as self-esteem and self-efficacy. In addition, learning experiences (see Desjardins 2004) and cognitive ability (Tuijnman 1989) are also important predictors of participation in continuing education.

Individual motivation to participate in education is closely related to socio-demographic characteristics. For example, a study by Roger Boshier and John Collins (1985) showed that people with a low level of education and occupational status are primarily motivated by social contacts and external expectations, while people with a higher level of education and occupational status are primarily motivated by individual career opportunities and cognitive interests. The background for this correlation can also be assumed to be attitudes and habitual imprints that attach a high or low importance to continuing education (see Houle 1961). However, it is worth noting that the identification of individual reasons is sometimes difficult. Sean Courtney (1992), for example, points out that participation in further education can also be a way to gain new goals and motivation.

### *Circumstantial conditions*

Circumstantial factors (the middle onion layer in Figure 1) or conditions, have also been discussed with reference to the "organising circumstances" of a learner's learning situation, which has an influence on individual learning outcomes, especially in terms of determining

the possibility and desirability for particular learning means and objectives (Mocker and Spear 1982; Spear and Mocker 1984). However, what is particularly important for understanding the need for continuing education is that the evolution of our digital age has led to rapidly changing circumstantial and societal conditions (see Nerland 2018). Specifically, the nature of the world of work is changing rapidly as technology replaces humans in automated jobs and many vocations expect and challenge learners, in a multitude of working fields, to keep up with rapid changes in their field. One particularly important change affecting vocational learning and the demand for continuing education is the exponential and ever-growing production of knowledge, which has a significant impact on working demands and conditions (Dunlap and Grabinger 2008; Nerland 2018; Premkumar et al. 2018).

This demand is particularly evident in jobs with particularly fast-changing conditions compared to other professions; examples are nursing, computer science, teaching, medicine, entrepreneurship, engineering, law, etc. (e.g. Alonderienè and Suchotina 2017; Barbosa et al. 2017; Beach 2017; Louws et al. 2017; Ma et al. 2018; Metz et al. 2017; Perkins 2018). However, in addition, it should be borne in mind that professionals themselves are not the only stakeholders and beneficiaries of their own personal engagement in regular continuing education (more on this in the section on our study's context and aims).

Moreover, the *comprehensive theoretical model of context for instruction* developed by Martin Tessmer and Rita Richey (1997) details the complexity of contextual factors that potentially influence the relationship between vocational demands and personal pursuits of education. The model presented by Tessmer and Richey (ibid.) includes a set of processes for analysing and mapping the physical, organisational and sociocultural context of education. They outline some underlying assumptions concerning the role of context, including that we are condemned to context and do not live in a context-free vacuum; there are multiple contexts for a given kind of learning or performance; educators should assist learners in applying knowledge and skills to intended real-world contexts; context can be accommodated but not controlled; learners themselves are an important contextual factor; education should be situation-specific; and overall, a systemic educational approach that addresses a broad range of contextual elements is more effective than one that ignores them. Tessmer and Richey (ibid.) propose a three-part view of context: (1) the orienting context (linked to the learners themselves and their previous knowledge and skills); (2) the instructional context (the conditions of the educational contexts available to the learner for continuing education); and (3) the transfer context (linked to the vocational demands).

In this context, a much-discussed factor is the design of the educational offer, e.g. with regard to time (Rüter et al. 2020; Rüter and Martin 2021). Although research investigating adult education centres has shown that course duration is decreasing on average (Käpplinger 2018), Fabian Rüter et al. (2020) and his more recent study with Andreas Martin (Rüter and Martin 2021) found that participants do not prefer shorter courses. This effect is explained by standardised course formats for certified degrees. In other words, it is not the length of the course but the certificate which is decisive for participation.

Furthermore, it should be considered that there are additional factors in both work and private contexts which might influence an individual's decision to participate in a course of continuing education. For instance, a study conducted by Robert McCartney et al. (2016) in Sweden, the UK and the United States found that peer/social groups play an important role. Also, as highlighted by Makoto Matsuo (2015), having a workplace developmental network can influence a person's tendency and propensity towards engaging in continuing education. These studies outline the complexity of contextual factors that might affect participation in continuing education.

### *Societal conditions*

By comparison, far less is known regarding the influence of wider societal factors (the outermost onion layer in Figure 1) on an adult learner's decision to engage in continuing education. Some of these factors are likely to promote participation while others might present a barrier toward adults' engagement in continuing education. These factors include the cultural and historical roots of a given society (see Cole 1998; Vygotsky 1980) or welfare state regimes that affect a person's capability to participate. Based on survey data from the International Adult Literacy Survey (IALS; conducted between 1994 and 1998 and coordinated by Statistics Canada) and Eurobarometer,<sup>1</sup> Rubenson and Desjardins (2009) have shown that it is not so much the barriers that determine participation in continuing education, but the conditions which enable a person to overcome these barriers. Using an international comparative perspective, Rubenson and Desjardins (ibid.) compared survey results for the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden), with results for non-

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<sup>1</sup> According to the official website of the European Parliament, "Eurobarometer surveys are the official polling instrument used by the European Parliament, the European Commission and other EU institutions and agencies to monitor regularly the state of public opinion in Europe on issues related to the European Union as well as attitudes on subjects of political or social nature. Eurobarometer provides quality and relevant data for experts in public opinion, researchers, media and the public" (EP 2022).

Nordic countries. They found that the type of welfare state system is decisive for the promotion of participation.

Moreover, in a recent study, Luc Benda et al. (2018) employed micro-level PIAAC data and macro-level OECD data to demonstrate that there seems to be a strong relationship between the extent to which adults participate in work-related continuing education and the amount of money (percentage of GDP) invested in active labour market policy training programmes that consist of open or distance education, on-the-job training, seminars or workshops, and private lessons. Thus, it is worth bearing in mind that wider societal factors also include important contextual conditions which are either conducive to or preventative of adults enrolling in a continuing education course.

### **The study context and aims**

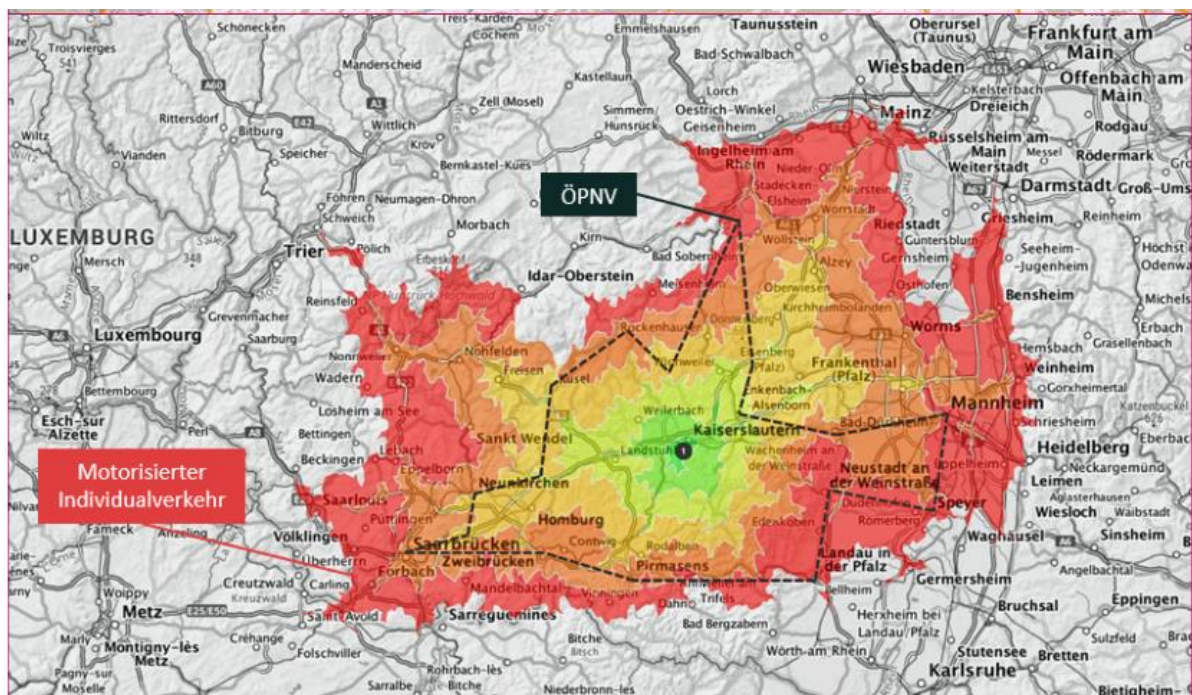
The study we are presenting here was conducted in the Western Palatinate (*Westpfalz*) region of Germany. In the south and east, the region borders on one of the largest forest areas in the country, and in the north and west on sparsely populated areas (for a more detailed description see Neureuther and Böhmer 2020). The city of Kaiserslautern is the only metropolis within a radius of 70 km. Due to this isolated location, the Western Palatinate has little connection to other economic areas in the vicinity. In addition, the city has been undergoing a transformation from an industrial city to a hub for science and information technology (IT) in recent decades. For this transformation to be successful, it is necessary to raise the population's general level of education to meet the economy's demand for skilled workers. Complementing the tertiary education offered by the two local universities with opportunities for further and continuing education therefore plays a central role in maintaining and expanding regional prosperity.

The official statistics of the federal state of Rhineland-Palatinate on continuing education, which depict courses and participants in continuing education institutions under the Continuing Education Act, show that the number of continuing education courses presently available decreased from 46,410 in 2009 to 36,517 in 2019, while in the same 10-year period the number of participants reduced from 759,021 to 543,288 – a decrease of almost 30% (Statistik RLP 2010, 2020). Looking at the entire continuing education sector across the whole of the country, it is evident from the German Atlas of Continuing Education (which is based on the German microcensus) that Rhineland-Palatinate is nevertheless one of the federal states with good provision and high participation in continuing education in Germany.

However, there are marked differences within the federal state. For example, participation in continuing education in the district and city of Kaiserslautern is only half as high as in other areas of the federal state (Wittenbrink and Frick 2018).

Thus, it has been argued that this geographical area presents a real need for addressing participation in continuing education, especially in terms of planning and offering appropriate continuing education courses for adult learners, in terms of meeting labour market demands, and in terms of promoting and securing healthy regional economic growth and societal prosperity (Rohs and Steinmüller 2020).

Therefore, the aim of the present study was, in part, to identify the continuing educational needs of the Western Palatinate region by undertaking an empirical study that would examine how adult continuing education programmes could be characterised and developed in order to better meet the needs of the inhabitants of this particular region in Germany. Our exact study area included the city of Kaiserslautern as well as those 23 rural and urban districts surrounding it which can be reached within one hour by local public or private transport. This area is populated by approximately 2.5 million people (see Figure 2).



**Figure 2** Region considered in the study (Steinmüller, 2021, p. 134.) *[Repository note - this image was sourced from a book published under a CC BY-SA licence, available [here](#)]*

*Notes:* The outline of the red outer belt, labelled *Motorisierter Individualverkehr*, depicts the 60-minute range of motorised individual transport. The black dashed demarcation, labelled with the acronym *ÖPNV* (*Öffentlicher Personennahverkehr*, which literally translates to local public people transport) marks the 60-minute range of public transport.

Our research questions for the present study were designed to address the aims outlined above, with two assumptions derived from previous studies we had already conducted in this research context (Steinmüller 2020). These assumptions were that (1) explaining and understanding participation in continuing education does not necessarily mean modelling attendance figures, and (2) the actual demand for courses increases depending on how closely they match the needs of potential target groups. The study we are presenting here focused on aspects either conducive to or preventative of adults' engagement in continuing education. Specifically, the following three research questions (RQs) formed the basis of the present study:

*RQ 1 To what extent do adult learners engage in continuing education within their habitual lifelong learning process?*

*RQ 2 Which circumstantial factors influence adult learners' participation in continuing education?*

*RQ 3 What are the barriers to adult learners' participation in continuing education?*

## **Method**

We conducted our study in partnership with the German Federal Ministry of Education and Research, which expressed its explicit intention to link our research findings to practice, with educational stakeholders seeking positive educational change and development in this geographic region.

The observation of regional differences in participation in continuing education faces the methodological problem that the statistical data available from the federal state as well as from individual providers either do not allow for a small-scale regional observation due to the number of cases or look at very different regions (see Jenkins and Wolf 2004). Therefore, comparisons of participation in continuing education in Germany are usually only available at the level of the federal states. It becomes even more difficult when spatial contexts are reconstructed due to specific perspectives (see above). Against this background, we had to conduct a separate survey for the project presented here.

We conducted our survey by computer-assisted telephone interviews in the city of Kaiserslautern and 23 administrative districts surrounding it between November and December 2016. As mentioned above, the statistical territory of our survey comprised an area which can be reached from Kaiserslautern within one hour by individual or local public transport. Based on census data of 2.5 million inhabitants, a significance level of 5%, and a sample error ( $e$ ) of 0.05 ( $p = 0.5$ ), we calculated a minimum sample size of  $n > 400$ . The final

random sample recruited using a telephone directory included ( $n = 521$ ) persons aged between 17 and 64 years (three years before usual retirement age). Participants gave verbal informed consent to partake in the study, which met ethical and legal stipulations at Technische Universität Kaiserslautern.

The mean age of the respondents was 45 years. In terms of gender, 54.1% identified as female and 45.9% identified as male. In terms of school-leaving certificates,<sup>2</sup> 16% of our sample possessed a lower secondary diploma (*Hauptschulabschluss*; ISCED level 2B; 9 years of schooling),<sup>3</sup> 28% held a lower secondary certificate (*Realschulabschluss*; ISCED level 2A; 10 years), 11% held an upper secondary diploma (*Fachhochschulreife*; ISCED level 3A; 12 years) and 45% held an upper secondary certificate (*Abitur* equivalent to A levels, ISCED level 3a; 13 years). In terms of employment, 80% of our respondents were employed (of the rest, 30% were housewives/-men, 25% retirees and 20% job-seeking). Regarding occupational status of our respondents who were presently in employment, the vast majority were employed by companies (63.5%), followed by entrepreneurs (14%), officials (13%), skilled workers (5%), apprentices (2.5%), and master craftswoman/craftsmen (2%).

We addressed our first research question (RQ 1) with descriptive statistics as well as Cramér's V and significance tests. As for our second research question (RQ 2), we provided respondents with a list of aspects that might influence their course selection. Using a six-point Likert-scale (ranging from "not important at all" to "very important"), we asked participants to rate the importance of the following twelve criteria when selecting their next educational course:

- (1) that the course is provided outside of working hours;
- (2) that it is integrated into their own working process;
- (3) that it requires their physical presence in a seminar room;
- (4) that it can be attended from home (online);
- (5) that it ends with a certificate;
- (6) that it can be split into shorter units over a longer period of time;
- (7) that it offers flexible entry points;
- (8) that it promotes communication with other participants;
- (9) that it allows partial conversion of professional experience into academic credit in longer courses;
- (10) that it does not involve a long travel distance to attend the course; and
- (11) that it is supported by the employer in terms of time or
- (12) in terms of funding.

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<sup>2</sup> Briefly, the formal German education system is free and compulsory. While exact stipulations concerning compulsoriness vary between federal states, children generally enter primary school (grades 1–4) at age 6, and finish after a total of 12 years of schooling. This involves 5, 6, or 8 years either entirely at a regular secondary school, or partly at a vocational school in combination with on-the-job training.

<sup>3</sup> The International Standard Classification of Education (ISCED), is the "standard framework used to categorise and report cross-nationally comparable education statistics" (UIS 2012, p. iii).



In order to detect the structure underlying these selection criteria (RQ 2), we conducted an explorative factor analysis as a principal component analysis.<sup>4</sup> We aggregated the resulting two main components as scores and used them as grouping variables for our subsequent hierarchical cluster analysis (Ward method; squared Euclidean distance). We applied this for the purpose of grouping all ( $n = 521$ ) respondents according to how they selected a new course (RQ 3). We then analysed clusters by mean comparison. We used SPSS® Statistics 25 for all our calculations.

## Results

### *To what extent do adult learners engage in continuing education within their habitual lifelong learning process?*

We found that 73% of all respondents ( $n = 378$ ) had attended a course in the field of continuing education in the past decade. In terms of course length, 16% of these respondents had completed courses with a length of two to eight weeks, whereas 21% had finished longer trainings of two months or more. Significant gender differences could not be detected (we evaluated this through a comparison of the average participation rates for both sexes). However, age did have an influence on participation: The point-biserial correlation between age and the participation rate (a dichotomous variable that depicts whether a person has or has not participated in at least one course in further and continuing education in the last ten years) was 0.283 ( $p < 0.01$ ).

Aggregating the respondents into age groups led to significant variations between them (Cramér's  $V = 0.325$ ;  $p < 0.001$ ). In the youngest group (aged 17–29;  $n = 86$ ), only 41% had participated in a course (independent of length), compared to 73% aged 30–39 ( $n = 71$ ), 83% aged 40–49 ( $n = 132$ ) and 78% aged 50–63 ( $n = 232$ ), again without significant differences between men and women. Arguably, the youngest age group may not yet have had ten years of further education history, thus decreasing the probability of their having already participated in a course. Yet, these results still indicate the absence of a linear incline, and the participant rates in continuing education appear relatively stable throughout the age groups.

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<sup>4</sup> This included Varimax rotation, while the number of factors was linked to the Kaiser criterion (eigenvalue  $> 1$ ). All eleven factor loadings (item #4 was excluded from analysis; see Results section) were above 0.5.



Aside from the shorter seminars, participants had spent on average 11–15 hours per week on course preparations. In this respect, about 33% of all continuing education units were accounted for by in-house trainings by the employer (compared to 34% in the Adult Education Survey [AES]; BMBF 2019, p. 48). This was complemented by 25% of training units conducted by private providers, followed by 12% in professional associations (AES 2018: 13% *ibid.*, p. 49) and 6% in institutions of higher education (AES 2018: 5% *ibid.*, p. 49), with 24% delivered by “other” providers. Structurally, there are strong similarities in terms of distribution among providers of further education offering these learning activities in our study region and in the overall German context.

Regarding occupational status, 88% of our respondents were employed while attending a course (7% unemployed; 1% in parental leave; 4% in apprenticeship) (Cramér’s  $V = 0.201$ ;  $p < 0.001$ ). The importance of occupational status as a participation-enhancing factor becomes more obvious, however, when analysed the other way around. Within the group of employed people, 100% stated having attended any course in the past ten years, whereas only 24% of the unemployed claimed the same (mean comparison:  $p < 0.001$ ). Age did influence this, as another mean comparison between the employed ( $\bar{X} = 47$  years) and the unemployed ( $\bar{X} = 40$  years) demonstrated ( $p < 0.001$ ).

Course length also affected this distribution. Regarding those lasting two weeks or more, 81% were taken by employees, compared against 12% unemployed participants (Cramér’s  $V = 0.194$ ;  $p < 0.05$ ). However, shorter courses were taken by 92% of employees compared against only 0.3% of parental leavers, 4% of unemployed participants and 3% of apprentices (Cramér’s  $V = 0.194$ ;  $p < 0.001$ ).

Additionally, the distribution displayed gender differences, especially with respect to longer courses of continuing education. While the total number of employed participants differed only slightly between men (92%) and women (85%; significant by mean comparison:  $p < 0.05$ ), 20% of the women enrolled in longer courses (two weeks or more) were not employed compared to 4% of men (significant by mean comparison:  $p < 0.01$ ). Shorter courses did not show similar gender influences. The level of secondary education affected the participation rate ( $p < 0.05$ ), though only with a weak effect (Cramér’s  $V = 0.147$ ). Our suggestion to explain the higher share of unemployed female participants enrolling in longer courses is its correlation with their stronger need, compared to men (in general), to reintegrate into the labour market after e.g. (family-related) care duties (double burdens) and/or meet demands for additional qualifications in order to build a career.

*What factors influence adult learners' participation in continuing education?*

We asked all participants who had completed a course of continuing education in the past ten years ( $n = 376$ ) to identify the one course of adult continuing education that they felt had had the biggest impact on them. We then asked them to rate on a six-point Likert-scale to what extent their participation motive was related to work or personal motivation. The options ranged from (1) attended entirely for work-related reasons to (6) attended entirely because of personal interest. Answers show a mean of 2.1 ( $SD$  1.42). We found that age had no significant influence on this result (Pearson's  $r = -0.085$ ;  $p < 0.1$ ).

Regarding the attributes which affect the selection of continuing education courses, an explorative factor analysis revealed the structures underlying the items. As a result, the total of eleven items (omitting item #4 for reasons explained below) could be aggregated into two dimensions (factors) of selection criteria, explaining 47% of the total variance (see Table 1). These two factors include the following selection criteria:

1. *Work-related selection criteria*: occupational integration; attendance; in-service training; support in terms of time; and support in terms of funding.
2. *Private life-related selection criteria*: option to split curriculum; flexibility when to start; short travel distance to attend the course; conversion of professional experience into academic credits; communication; and certificates.

We should highlight the point that item #4 “can be attended from home (online)”, which could be influential when attributed to educational programme design, represents an area for further study. However in the present study, we decided to exclude it from our analysis due to its low correlation with the other items (item total correlation = 0.22) and the increase of Cronbach's  $\alpha$  when left out.

**Table 1** Rotated and sorted factor loading matrix

<i>Components</i>	CA	<b>Factor loads</b>		Commonalities
		I	II	
Occupation. integration	0.68	<b>0.81</b>	0.10	0.66
Attendance	0.75	<b>0.65</b>	0.12	0.44
In-serv. training	0.73	<b>0.65</b>	0.16	0.45
Support in terms of time	0.70	<b>0.62</b>	0.39	0.53
Financial support	0.70	<b>0.61</b>	0.35	0.49
Split curriculum	0.68	0.11	<b>0.72</b>	0.53

Flex. starting point	0.70	0.09	<b>0.69</b>	0.49
Short access route	0.71	0.12	<b>0.64</b>	0.42
Convert exp. to credits	0.68	0.38	<b>0.56</b>	0.45
Communication	0.71	0.32	<b>0.50</b>	0.35
Certificates	0.70	0.36	<b>0.48</b>	0.36
Eigenvalue	-	2.66	2.52	5.17

Note: Total variance explained: 47%; KMO test: 0.845; Bartlett test: 0.000; Cronbach's  $\alpha$  factor 1: 0.754; Cronbach's  $\alpha$  factor 2: 0.732; extraction method: principal component analysis, values by Varimax rotation with Kaiser normalisation.

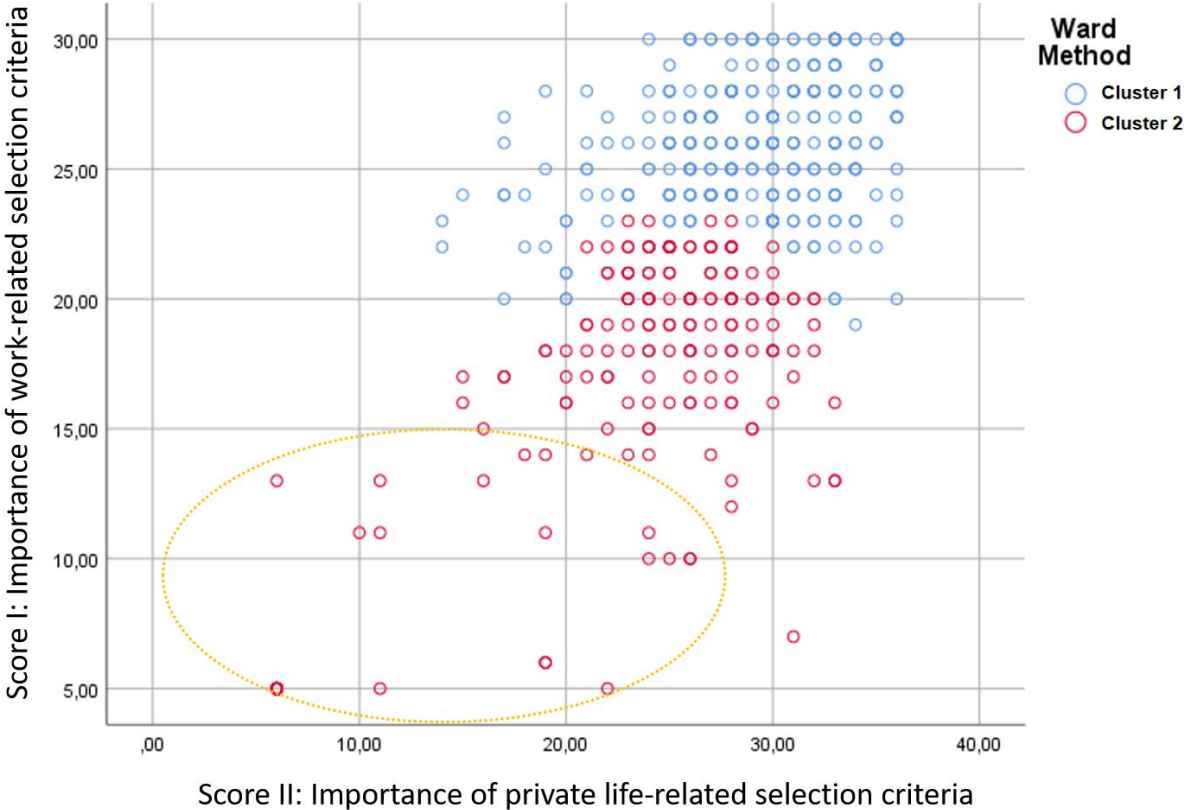
Factor I, as we interpret it, aggregates aspects that are linked to the employer and everyday work. All of them represent one aspect of how continuing education can be integrated into a person's working life. Their common ground may be found in work-life flexibility, both in terms of time and financially. Factor II, on the other hand, reflects the need for individualisation and flexibility. The rather low factor load for the importance of certificates suggests that this item may reflect a third influential factor, not considered in this study. As the private life-related combination of the second factor's items suggests, this dimension represents the counterpart to the work-related factor I. This dichotomisation of work and private life appears reasonable and hence underlines the importance of extending and refining the examination of both domains in further studies, as they represent comprehensive fields of demand that have to be met in designing attractive courses.

#### *What are the barriers to adult learners' participation in continuing education?*

Knowing what structurally underlies adult learners' selection of continuing education courses serves as a good starting point to examine major barriers to participation. Being able to determine which aspects of course design make courses attractive and foster their selection, enables us, we argue, to infer what makes them unattractive. The results of our factor analysis make it possible to attribute personal selection preferences to either a work- or a private life-related dimension. Since the associated variables depend on a six-point Likert scale, simply adding them up creates two scores: one score expressing personal proximity to *work*-related attributes and the other expressing personal proximity to *private life*-related attributes when selecting a continuing education course.

This allows to classify our respondents with regard to how much importance they ascribe to each of the two dimensions of selection. Hence, this characterisation helps to structure the respondents into groups concerning similarities in their selection preferences. We found this narrow, and thus more detailed, focus on homogeneous preference types to be beneficial to our analysis of participation barriers and therefore favoured it over results

derived from an unsegmented dataset. As with the factor analysis, here again, we preferred an explorative approach over a theory-driven determination of selection types. In accordance with this preference, we applied a hierarchical cluster analysis using the two scores as grouping variables. As a result, we identified two clusters of respondents (shown in Figure 3).



**Figure 3** Scatterplot of cluster affiliation

Figure 3 illustrates the cluster affiliations of the data points. The encircled area suggests possible outliers. However, we still included them in the analysis, since an alternative third cluster, whilst pointing in the same direction as the two-cluster solution, would not have improved our interpretation. As depicted, cluster 1 consists of data points which exhibit high values in both the work-related and private life-related scores, whereas cluster 2’s scores distribute among lower regions. A comparison of the average scores of the clusters (Table 2) confirms that impression. In cluster 1, the mean score of both the work-related factor ( $\bar{X} = 26.08$ ) and the private life-related factor ( $\bar{X} = 29.16$ ) are significantly higher compared to cluster 2. Since these are higher than the overall mean scores for all respondents (work:  $\bar{X} = 23.04$ ; private:  $\bar{X} = 27.37$ ), cluster 1 can be interpreted as including people who place

importance on both work- and private life-related aspects when selecting a continuing education course.

**Table 2** Mean comparison of the clusters

	$\bar{X}$					
	<i>n</i>	<b>Work-related score</b>	<b>Private life-related score</b>	<b>Sex</b>	<b>Age</b>	<b>Participation</b>
<b>Cluster 1</b>	316 (65%)	26.08 (SD: 2.53)	29.16 (SD: 4,57)	0.39 (39 % male)	44.78	0.75
<b>Cluster 2</b>	171 (35%)	17.31 (SD: 4.52)	24.09 (SD: 5,89)	0.55 (55 % male)	43.96	0.68
<b>t-Test</b>	-	23.28***	10.52***	-3.44**	0.67	1.45
<b>Effect size Cohen's d</b>	-	1.63 (large)	0.89 (large)	0.32 (small)	-	-

Note: \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$ )

Following our interpretation, these selection criteria results also provide information about participation barriers. Educational offerings which meet private life- and/or work-related needs, we suggest, are likely to seem more attractive to participate in, while offerings which do not meet those needs are less likely to attract learners. Hence, (regionally) inadequate course structures may produce participation barriers with regard to (regionally) specific selection criteria.

## Discussion and conclusion

While we found that a vast majority of adults engage in continuing education, they do not necessarily do this on a regular basis. Our respondents' decision to participate was strongly influenced by work-related and private life-related factors – which can be seen as circumstantial contextual conditions (see Figure 1). In this regard, for two-thirds of adult learners, *both* work-related and private life-related factors had to be satisfied for them to attend a continuing education course.

Differentiated by their components, our two aggregated influential factors reveal interactions among attributes from all levels of the *contextual factors onion model* (shown in Figure 1). The work-related selection criteria can be interpreted as circumstantial factors that may foster or hinder educational participation with regard to occupational context conditions. That refers first of all to the educational options learners have at their disposal within their

occupational setting, e.g. whether they are given support and/or flexibility in terms of time or funding. These contextual conditions are complemented by more personal, hence private selection criteria, which can vary with regard to societal structures. Here, individual educational paths – moderated by performance-enhancing/-diminishing social-structural characteristics (e.g. status, habitus, parental occupation) – are also relevant in terms of their influence on how and with what intensity learners participate in further education. Accessibility, flexible starting points and split curricula for example seem to play an important role for educational choices made by people who work long hours and are immersed in care-intensive family structures.

These results contribute to the field as they help to differentiate panel data-based knowledge on the conditions and distribution of lifelong learning in regional contexts. Studies such as Rubenson's (1998) work on how societal processes and structures as well as institutional processes relate to adult education and training point out that e.g. participation increases with the level of education against the background of social and habitual structures. After establishing the significance of work-related and private life-related factors as possible participation barriers within a particular region, relating these to possible moderators within the family as well as learners' socio-economic background now presents a highly interesting field for further region-specific studies.

Moreover, work-related influences (e.g. occupational status) can interfere with motives to engage in education and training, since the work setting frames how and what employees learn on an everyday basis (e.g. working in small companies represents a handicap regarding benefits from employer-supported education and training) (Rubenson 1998). Our findings on work-related flexibility (e.g. in-service training, support in terms of time) contribute to academic knowledge on structural and motivational factors by adding significant course selection criteria. This enables a better understanding of what facilitates overcoming the structural (or work-related) framework and proactively engaging in further education.

Within our sample, more than two-thirds of participants had attended a course in the field of continuing education in the past decade, including about a fifth of persons completing a continuing education programme lasting two months or more. In this respect, age did have an influence on participation. In the youngest group, aged 17–29 years, nearly two-thirds had not attended a further continuing education course. As mentioned earlier, arguably, the youngest age group may not yet have had ten years of further education history, thus decreasing the probability of their having already participated in a course. Nonetheless, this is an interesting and perhaps somewhat unexpected finding, and there are alternative plausible

reasons for this observation, one of which might be that their recently completed education had satisfied their needs and interests and vocational demands up to the present point of their working career. But further studies are required to confirm such a possibility.

In addition, we found that more than two-thirds of adults in the middle (aged 30–39, 40–49) and older (aged 50–63) working age groups had participated in a continuing education course in the past decade. The initial conclusion that can be made here is that continuing education in this region in Germany does not decline over the course of an adult's working life.

Regarding the influence of occupational status, every person who was employed at the time of our survey had participated in a continuing education course in the past decade, whereas about three-quarters of unemployed people had not enrolled in any continuing education course within this timeframe. While it seems plausible that continuing education might contribute towards providing adults with a certain protection against unemployment (see Barnes et al. 2016; Ilieva-Trichkova and Boyadjieva 2019), this requires further research and remains an important direction for further studies.

The results of the Adult Education Survey (AES) conducted in Germany (BMBF 2019) help to put these regional results into perspective by comparison against the national picture. In sum, AES found that 54% of all German learners took part in further education in 2018 (51% in 2014; 50% in 2016) (ibid., p. 13). Differentiated by age groups, the data exhibited a participation rate of 55% for the group of learners aged 18–24, an average of 58% within the 25–34 age group, and 59% for the 35–44 age group in 2018, while the participation rate for the 50–64 age group was 50% (ibid., p. 36f.). By comparison, the results of AES and our own study do not show a strong congruence in this respect. First, the group-specific participation rates can hardly be compared due to the fact, that AES used different age groupings. Second, we asked for participation in the field of adult education in the past decade, whereas AES depicts only the last year immediately preceding the survey. These two restrictive deviations may explain why our data show increasing participation among older groups, while AES denotes the younger and middle-aged groups as most active learners in this respect. Since members of the oldest age groups are more likely to be already retired, this deviation may be connected to corporate in-house-trainings and the opportunity to take part in them (more on this below).

AES also shows clear differences between the sexes. While 57% of men participated in continuing education in 2018, only 52% of women did (ibid., p. 32). Here, too, the differences can be traced back to the area of continuing vocational training. It is not gender per se that has

an impact on participation in continuing education, rather, it is the associated occupational position or the intensity of employment. Interestingly, men's higher participation rates emerged only recently, gaining eight percentage points in 2016. Before, the degree to which they took part in further education had always been trailing female learners' participation rates (BMBF 2019).

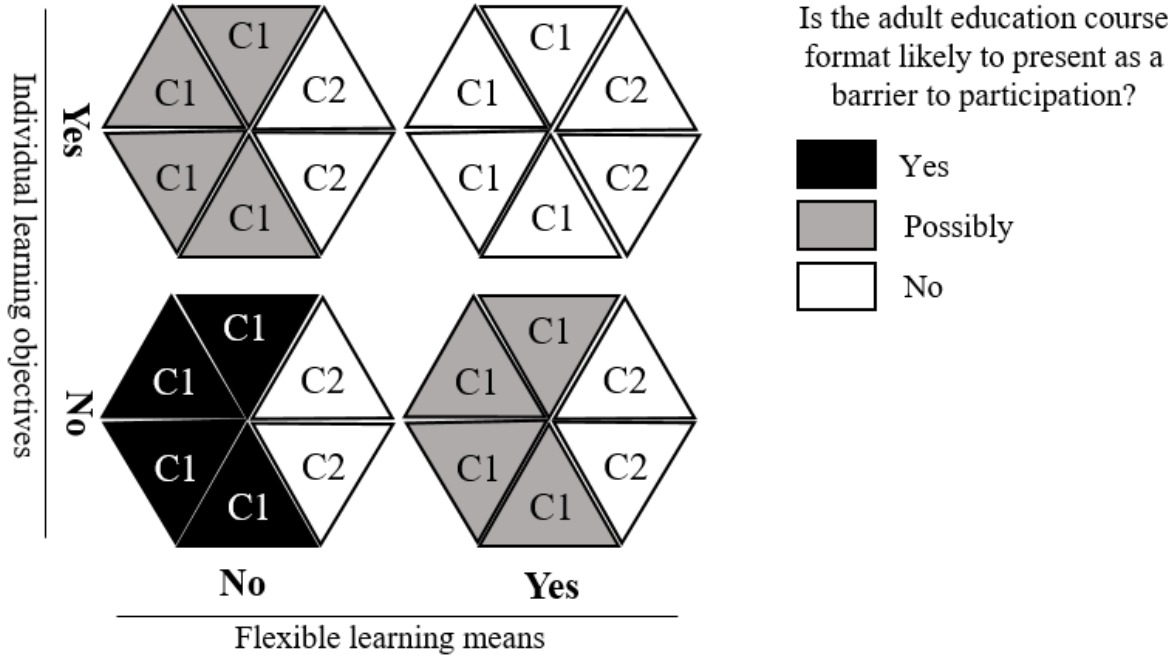
Another interesting finding of our own study is that among our unemployed respondents, women were more likely than men to participate in a longer, or more comprehensive, course of continuing education. Such gender differences have also been found in other educational contexts (e.g. Slater et al. 2017), but it seems important to examine in further studies whether such a gender difference holds true in other geographic areas of Germany, which would thereafter inform policy and practice, especially for agents providing unemployed persons with advice and guidance on job seeking.

Also, when we asked our participants to identify which factors they felt had had the biggest impact on them and to provide their driving motivation for participation, we identified two important groups of criteria: (1) work-related criteria, which are linked to the employer and everyday work (occupational integration, attendance, in-service training, support in terms of time, and in terms of funding) and, (2) private life-related criteria, which reflect the need for individualisation and flexibility (option to split curriculum, flexibility when to start, short access routes, conversion of professional experience into academic credits, communication, and certificates).

We identified that knowing what structurally underlies the selection of courses in continuing education serves as a good starting point to examine major participation barriers. The results of our factor analysis made it possible to attribute personal selection preferences to either a work- or a private life-related dimension and led us to identify two clusters of respondents (see Figure 3). The first cluster of adult learners include people who place importance on both work- *and* private life-related aspects when selecting a course. In other words, they are quite picky – suggesting a high influence of personal conditions – in that many criteria need to be satisfied in order for them to participate in a continuing education course. This profile accounted for close to two-thirds of our respondents. This is an important finding within the context of our study – especially considering that the most populated sectors of our study region clearly fail to exploit their full potential in participation in further education (Wittenbrink and Frick 2018). In view of these findings, we tentatively conclude that offering continuing education programmes which provide learners with a high degree of flexibility are likely to satisfy the demands of adult learners in this region and might



encourage a growth in participation in further continuing education courses. This conclusion is depicted in Figure 4, which shows that barriers to participation are likely removed (for many adults) when the course has both individual learning objectives and flexible learning means.



**Figure 4** The likelihood of participation in continuing education

Nonetheless, it should be noted that this study has some limitations. First, the study was cross-sectional in nature and therefore did not yield data on change in participation over time. This meant that we were unable to examine how the evolution of digital technologies and forms of learning involving heightened transactional distance, which may provide learners with more flexibility in educational design, has affected participation rates in continuing education. Examining changes of participation in continuing education over time would require a longitudinal study design. Additionally, while the size of our sample was large and random, it was limited to our specific study region. Whilst this is a strength of our study regarding understanding continuing education in this geographical region in Germany, we do not claim external validity. In order to verify transferability, comparable studies outside the geographic area of the present study are required.

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