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## **27|2020** Employment Subsidies for Long-Term Welfare Benefits Recipients: Reconciling Programmes' Goals with Needs of Diverging Population Groups

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# Employment Subsidies for Long-Term Welfare Benefits Recipients: Reconciling Programmes' Goals with Needs of Diverging Population Groups

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## Abstract

We discuss the design and examine the inflow of participants in two new subsidised employment programmes (§ 16 e/i German Social Code II) that aim to help long-term welfare recipients in Germany to find a job and increase their social participation. We describe the programmes in terms of goals and eligibility criteria and proceed to analyse recent inflows into the programmes using Latent Class (Cluster) Analysis in an exploratory manner. Our findings provide evidences on the considerable heterogeneity in the programmes' inflows. The resulting typology does not only connect individual biographical and socioeconomic characteristics with greater sociohistorical processes, but give strong hints towards different needs of the various participant groups which could be treated differently in the programmes. Keeping up and improving social integration through subsidized labour is a high priority treatment to be considered for some participant groups, while others should be considered more for improvements of education and professional training, even if their biographies so far show most distance to both. Our results provide first guidance on how to adjust programme's design to the needs and capabilities of heterogeneous groups of long-term unemployed and welfare benefit recipients.

## Zusammenfassung

Wir untersuchen die Zugänge von Teilnehmern in zwei neue Maßnahmen der geförderten Beschäftigung (§ 16 e/i SGB II), die Langzeitarbeitslose im Hinblick auf Erwerbsintegration und Teilhabe unterstützen sollen. Dabei werden zunächst die Programme im Hinblick auf ihre Ziele und Teilnahmekriterien beschrieben. Anschließend erfolgt eine explorative Untersuchung der Teilnehmerstruktur beim Maßnahmeeintritt mittels einer Latent Class (Cluster) Analyse der administrativen Daten der Bundesagentur für Arbeit. Unsere Ergebnisse zeigen eine beträchtliche Heterogenität der Teilnehmer beim Maßnahmeeintritt, die in einer Typologie dargestellt wird, in der sich individuelle erwerbsbiografische Charakteristika und persönliche Problemlagen mit weiter gefassten sozialhistorischen Prozessen verbinden. Dabei werden auch unterschiedliche Förderbedarfe dieser Teilnehmergruppen deutlich, die bei der Programmgestaltung berücksichtigt werden könnten. Die Aufrechterhaltung und Verbesserung sozialer Teilhabe durch eine geförderte Arbeitsstelle ist für manche Teilnehmergruppen prioritär, während andere vermehrt von passgenauen und problemgerechten Bildungs- und Ausbildungsbestandteilen profitieren würden, die unter Umständen auch den Langzeitbezug von Sozialleistungen verringern oder beenden könnten. Insofern ergeben sich aus unserer Untersuchung erste Anhaltspunkte für die Feinjustierung dieser Arbeitsmarktprogramme im Hinblick auf die Bedürfnisse und Fähigkeiten heterogener Gruppen von Langzeitarbeitslosen und Sozialleistungsempfängern.

## JEL classification

C38, J08

## Keywords

Monitoring, Employment Subsidies, Latent Class Analysis, Long-term Welfare Benefits Recipients

## Acknowledgements

The authors are indebted to Miriam Raab for discussing earlier versions of the typology, to Martin Dietz, Philipp Ramos Lobato and Cordula Zabel for critical feedback, and to Melanie Meier for checking the bibliography.

# 1 New programmes for the long-term unemployed and the tradition of subsidized labour

Subsidized labour has a long-standing tradition in social policy (see short overview in Bellmann/Hohendanner/Promberger 2006, Ramos Lobato 2017), although it took a while to emancipate from certain forms of forced or semi-forced labour applied in the 19th and early 20th century – such as workhouses in England or the ‘Notstandsarbeiten’ in the Weimar Republic in Germany. In contrast to forced labour in the strict sense, like slave labour or prisoner chain gangs, or the work in Nazi concentration camps, one motive of subsidized labour has always been to contribute to the benefit of society and to reduce welfare costs, but also to help the people concerned to stabilize themselves and become ‘valuable’ members of society. In turn, sub-market productivity is tolerated or respective deficits are financially compensated for employers, if not the wages are directly paid by the state. Intended or not, nevertheless, social control, a normative understanding on labour as prevalent mode of social structuring, work test, and the exchange of own productive efforts in turn for transfer payments (‘workfare’) or direct subsidized wages have always been side goals in any kind of subsidized labour, although to varying degrees (Bellmann et al. 2006)<sup>1</sup>. It was the growing notion of welfare as a civil right (Marshall 1950) which growingly emphasized the meaning of the main – or more modern – goals of social policy, like personal and family stabilization, social integration, social participation and improving social chances for participants in subsidized labour. This expressed itself in the German ‘Bundessozialhilfegesetz’ of 1961, the ‘Arbeitsförderungsgesetz’ of 1969, and the ‘Arbeitsgelegenheiten’ (AGH) regulated in the Social Code II of 2005 in Germany, just to mention a part.

It has to be noted that around 2005, a debate reappeared, how subsidized labour would be organized best, in order not to endanger private companies by new subsidized competitors, not to create poverty traps by allowing permanent affiliation to such jobs, not providing forms of labour exempt from market competition, not to support underproductive economic entities. This debate was supported by the results of econometric analyses, applying ex-post quasi-experimental designs (Rosenbaum/Rubin 1985), showing that the gains of subsidized labour in terms of reintegration of unemployed persons into regular labour were little, compared to unemployed persons not being moved into subsidized labour (Hujer and Caliendo 2000, Caliendo, Hujer and Thomsen 2004 for ‘Arbeitsbeschaffungsmaßnahmen’ (ABM)). This, having developed into a ‘only-regular-job-up-takes-matter’ position during both Schroeder chancellorships, has governed German social policy increasingly since about 1998 until about 2010, replacing the earlier ABM by mostly short-term and ill-paid options (AGH) for subsidized labour in order to avoid these traps. Nevertheless, recent econometric evaluations showed that these measures turned out to be more effective for specific

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<sup>1</sup> This article cannot give a comprehensive overview on morphology and history of subsidized labour, a yet unwritten book. We can distinguish between short term stepping stones and mid-term bridges into the first labour market, and long-term social integration measures where not much bridging into the first labour market is expected. This paper intendedly focuses on subsidized labour arrangements in a mid- or long-term setting for the long term unemployed which can be counted as ‘Sozialer Arbeitsmarkt’.

subgroups of participants in terms of bringing them into the regular labour market than the foregoing ABM (Bernhard et al. 2008, Caliendo et al. 2008, Hohmeyer/Wolff 2010, Wolff/Stephan 2013). A second debate ran along the question of payment, asking whether participants should be paid a topped-up transfer income by the welfare authorities, or a wage paid by the employer who in turn would get the subsidies from the state. Associated questions were whether the various forms of subsidized labour were liable to social security contributions and therefore could generate new entitlements for transfer incomes and services from the unemployment insurance or not. In other words, how much should subsidized labour resemble real labour or not. According to theories of social recognition (Honneth 2004) and reciprocity (Adloff/Mau 2005), Hirsland et al. (2012) argued for the wage form to provide more social recognition, satisfaction and social integration of the clients than the welfare top-up. Moreover, Bernhard et al. (2007) find evidence for temporary wage subsidies to have a positive net effect on the participants' labour market integration.

The German labour market and welfare reforms of 2005 ('Hartz – IV - reforms'), took place under the roof of what was quickly diagnosed and sometimes criticized as the 'activation paradigm' (see contributions in Pascual/Magnusson 2007). Therefore, they were often seen as manifestation of a turn in the present history of subsidized labour: Before 2005, long-running subsidised jobs, had been organised as close as possible to real labour, but had come under a period of decline after the lock-in effects of the ABM jobs had been published and considered by policy makers. Then, after 2005, subsidized labour was mostly just available as short-term measures, some just with welfare top-ups, some with decreasing subsidies for employers on standard working contracts. But gradually, the unemployment and welfare administration in Germany had to learn that activation policies did not hold its promise of a substantial reduction of poverty. There was an unsettled debate whether and to which extent it actually was the business cycle, wage restraints or the activation policies which reduced unemployment from 2005 to 2007 (see Möller et al. 2007, Dustmann et al. 2014), but it seems that the 2005 welfare reforms came along with a high and possibly growing number of clients who had to combine insufficient wages with welfare benefits (Rudolph 2014). Moreover, even at the peak of the business cycle, there was a relatively high number of people with little or no chances to find sufficient employment, and the share of long-term unemployed in all unemployed roughly remains one third in the two decades after 2000, with minor variation according to the business cycle but hardly any reform-driven decrease<sup>2</sup>. Thus, the second labour market and the related normative concepts of a 'Sozialer Arbeitsmarkt' increasingly re-entered the agenda of social policy (Kupka et al. 2018). Thus, after more than two years of debate, and a pilot project (BMAS 2019), the respective paragraph 16 of the German Social Code II was reformed, creating the options of 'TaAM - Teilhabe am Arbeitsmarkt' (§16i) and 'EVL - Eingliederung von Langzeitarbeitslosen' (§16e), to be put in place from January 2019. Given the political contestedness, the costs and the huge number of persons involved into such public job creation schemes, the German Federal Ministry of Labour and the German Parliament decided to run an extended evaluation study and report its results to the 'Bundestag'. Among other tasks, this evaluation, commissioned to the author's research institute (IAB), is meant to include a description of the population

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<sup>2</sup> Source: <https://de.statista.com/statistik/daten/studie/17425/umfrage/anteil-der-langzeitarbeitslosen-in-deutschland/#professionale>, last retrieved July 14th 2020. After the welfare reform of 2005, there was an extraordinary increase of long-term unemployment (as percent of all unemployed) above 40% for 2007 and 2008, which, again, is more likely to be associated with the global economic crisis meanwhile called the 'Great Recession', and less to the welfare reforms.

involved in socioeconomic terms, and the changes in this population – which is the research question of this paper. Usually called a monitoring of the most relevant ex-ante-defined descriptors, it was decided to use an inductive typological methodology here, which should discover heterogeneities of the population, not only in ex ante defined parameters, but also in non-anticipated parameters, their covariation and aggregation to different subpopulations.

As the history of evaluating labour market programmes shows, doing social policy evaluation is a learning process as well as social policy itself. Ex-post evaluation, with its focus on effects and effectiveness, entering the stage of German labour market and social policy in the 1990s was groundbreaking, even if earlier studies were based on descriptive numbers and time-slices, while the broader introduction of ex-post experimental designs and field experiments a decade later turned the matter downside up by allowing to separate the causal effects of a measurement from normal time-related developments to which both treated and untreated persons are exposed. . Nevertheless, treatment effects might provide causal effects, but are still shedding differences which might be of relevance for policy decisions and require thorough foregoing analysis of the structures of the participating (and non-participating) population. And, better not by ex-ante classifications, but based on inductive methodologies which might reveal other differences than expected. This is what we will do in the following sections.

In the next section we describe §16i (TaAM) and §16e (EVL) programmes in more details. Section 3 describes the data and sample construction. Section 4 discusses variables used in the analysis. Section 5 explains the Latent Class (Cluster) Analysis (LCA). Section 6 presents the results. Finally, we draw conclusions in Section 7.

## 2 Details of the programmes

The subsidised employment programmes §16i (TaAM) and §16e (EVL) target long-term unemployed welfare benefit recipients with limited prospects in the labour market, although they address somewhat different population groups and goals. Differences in the two respective programmes goals can be explained by differences in target groups. While the goal of the §16e (EVL) is to increase reemployment chances of participants in the regular labour market, the goal of the §16i (TaAM) is double-fold: to increase reemployment chances and to contribute to a better social integration of participants of the programme (Bauer et al. 2019). In addition, to be eligible to participate in the §16e (EVL), a person must be ready to take up employment for at least three hours a day and have unemployment duration of over two consecutive years. Eligibility criteria for the §16i (TAM) exclude a group of young persons (under 25) and generally require at least six years of welfare receipt during the past seven years and only very short periods of employment.

To achieve the goals, both programmes offer rather generous employment subsidies. The duration of employment subsidy for participants in the §16e (EVL) is limited to two years and for participants in the §16i (TaAM) to five years. The §16e (EVL) employment subsidy amounts to 75 percent of the wage cost in the first year and 50 percent in the second year. The §16i (TaAM) subsidy is higher. In the first two years, employers are compensated for 100 percent of wage costs with a 10 percent reduction hereafter. The subsidised employment can be organised with any employer and



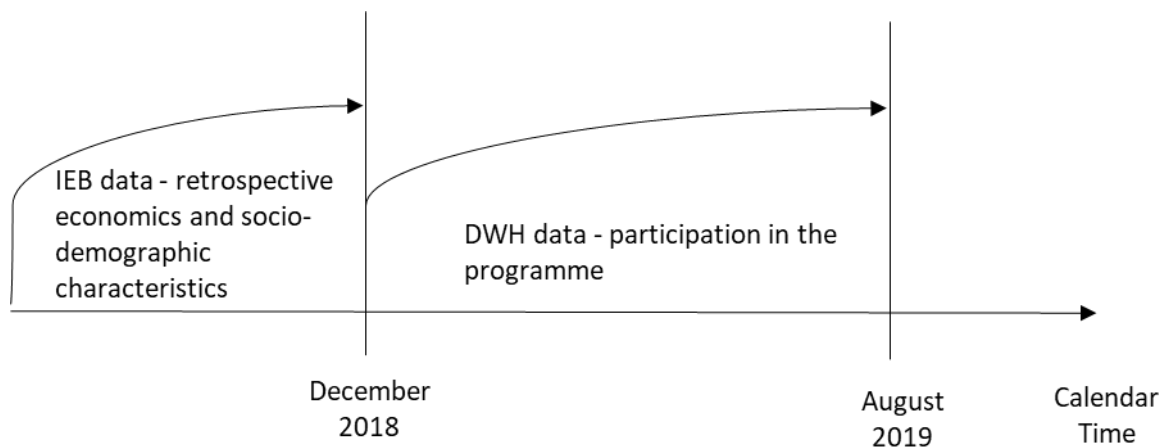
occupation. The wages paid to participants cannot be below state or industry-specific minimum wages and occasionally may even be higher. An essential component of both programmes is coaching sessions that aim to address behavioural barriers of participants in transition to employment.

### 3 Data and sample construction

To examine the inflows into the programmes we use two administrative databases to construct the sample. First, we use the information on exact dates of participation in the programmes available in the Data Warehouse (DWH) of the German Federal Employment Agency. Second, we use the information on retrospective economic and socio-demographic characteristics of participants available in the Integrated Employment Biographies (IEB) data collected by the Institute for Employment Research. The available data from the DWH covers the first eight months of the implementation of the programmes from January to August 2019 –. The IEB data is available up to the end of December 2018 and provides important retrospective information on the previous periods of employment, as well as unemployment and active labour market programmes participation. In addition, we get the information on the composition of the household from the benefit payments data.

Figure 1 illustrates the sample design. It follows that we observe economic and socio-demographic information as of 31.12.2018 and participation in the programmes is observed in the period between 01.01.2019 and 31.08.2019. This results in the observation gap or a period with missing information on economic and socio-demographic characteristics between the end of the observation period in the IEB data and the actual start of participation in the programmes in the DWH data. While this gap is small for people that have started participating at the beginning of 2019, it increases with calendar time up to the maximum of nine months for people enrolling into the programs on 31.08.2019. In the analysis we restrict the sample to the observation with non-missing information on important personal characteristics and exclude repeated spells of participation in both programmes. The resulting sample size for the §16i (TaAM) is 23,611 individuals out of which 3,053 individuals participated in the pilot project “Social Inclusion in the Labour Market” (transition scheme). For the §16e (EVL) the sample size is 5,806 individuals.

Figure 1: Sample design



Source: Authors. © IAB

## 4 Variables selection

We focus on the key characteristics that describe the socio-demographic profile of participants in the programmes. To define the socio-demographic profile of participants, we control for a participant's age, gender, household type, migration background and disability status. Firstly, we look at gender and age of participants in the programmes, as previous research has overwhelmingly shown paramount importance of gender and age for employment outcomes (Humpert/Pfeifer 2013, Olivetti/Petrongolo 2016, OECD 2019). We further control for the household composition of participants in the programmes. On the one hand, the composition of the household may proxy for the size of available networks and thus facilitate the transition to employment (Ioannides/Loury 2004). On the other hand, the household composition may proxy for the disincentive effects of taking up contributory employment because of childcare obligations or presence of the second earner in the household (Drobnic et al. 1999). The four main types of households are households of single individuals, single parents, and couples with and without children under the age of 18. To capture the migration background, we use information on citizenship, as differences in labour market outcomes of natives and migrants are documented in a number of studies (Chiswick/Miller 2009, OECD/European Union 2015). Of course, our indicator has an important drawback in that the data allow for observing a nationality but not the migration background. We are thus likely to underestimate the share of people with the migration background because a significant part of immigrants is likely to eventually acquire German nationality after immigration. Finally, we include a proxy for the health status of participants in the programmes – an indicator variable whether the person is severely disabled. While this measure is imperfect and unlikely to capture all health barriers in the transition to employment, the group of people with severe disabilities is a focus group for formulation of labour market policy (Jones 2016).

As for economic variables, we concentrate on the role of education, region and labour market experience to describe the participants in the programmes. The role of educational attainment as a driver of employment outcomes is extensively documented in the literature and viewed as a proxy

for certified individual skills. People with low educational attainment tend face higher risks of unemployment and welfare benefits dependency (Becker 2009, Barrett 2000). To control for the educational attainment, we look at the level of professional education. Taking into the account that almost 50 percent of participants do not have a professional degree, we discretise educational attainment variable such that it takes value 1 if the programmes' participants obtained a recognised professional degree and 0 otherwise. Furthermore, Germany has a strong regional variation in the labour market conditions (Schneider/Rinne 2019). One major difference is the difference between the East German and the West German labour markets. The individuals from these two parts of the country tend to have rather different socioeconomic histories that influenced their labour market experience. The reunification of Germany in 1989 and introduction of the market economy to the previously socialist centrally-planned system in East Germany led to wide-spread plant closures, job losses, ruptures in shop-floor culture, devaluation of and breaks in labour biographies, triggered age- and gender-selective East-to-West migration and frustration experiences (Krueger/Pischke 1995, Parikh/Van Leuvensteijn 2003, Buettner/ Rincke 2007). At the same time, West Germany underwent a growth of service jobs and a decline of low -skill manufacturing jobs together with globalization, computerisation, increasing flexibilization of management, enterprises and working conditions (see Fourastie 1969, Lutz 1989, Boltanski/Chiapello 2001), which pushed mainly older or low-skill manufacturing workers into marginal labour market positions, like precarious labour or unemployment. To capture these crucial differences between East and West Germany, we include into the model a dummy variable indicating that participants of the programmes live in East Germany.

We concentrate on the work experience of the program's participants within the last 20 and 10 years before 31.12.2018. Work experience can influence labour market outcomes through at least two channels. First, long work experience may help to maintain and enhance individual skills (Becker 2009). Second, people with longer work experience may develop a large social network that can increase their probability of reemployment (Cingano/Rosolia 2012).

The issue of measuring the work experience in the context of the cluster analysis may be challenging for at least two reasons. First, work experience is not age invariant. To see this, consider a hypothetical example of two participants in the programmes with the same years of work experience – e.g 5 years of total work experience, but different age (e.g. 55 and 27 years old). Obviously, for a 55 years old person the 5 years of work experience may be considered as relatively “low work experience”, although it is more likely to be viewed as “high” the 27 years old person. To normalise the work experience measures we calculate average total work experience within the last 20 years for cells defined by gender, age (eight 5 year categories), professional education, and region (that is East and West Germany). In total, we construct 64 cells – 2 gender x 8 age x 2 professional education categories x 2 regions). Subsequently, we consider the individual total work experience as low if it is below 60 percent of the average value in the respective age/gender/education/region cell. Second, work experience may be acquired through specific forms of atypical work that is not subject to social security contributions as well as through different forms of subsidised employment. Importantly, the subsidised employment may be particularly relevant for the long-term unemployed welfare recipients. Although work experience obtained in subsidised employment is important, it may not be fully transferable to non-subsidised jobs. Moreover, some specific population groups among the long-term unemployed (e.g. people with disabilities, single mothers) may

be more likely to be targeted by subsidised employment programmes compared to the others. Considering this, we concentrate on work experience that was obtained in a regular non-subsidized contributory employment.

In addition to the variables discussed above, we examine other (external) characteristics of the participants in the programmes. These characteristics do not contribute to the latent class model but are used to study ex-post association between the individual assigned class (cluster) and the external variables. We describe the resulting clusters in terms of the previous labour market history, such as the time since the last employment, the cumulated number of days in employment during the past 10 and 20 years, marginal employment and the participation in labour market programs during the past 10 years. We also control for the proportion of time a person was employed while receiving welfare benefits (ALGII) in the past 10 years.<sup>3</sup>

## 4.1 Descriptive analysis of participants of the programmes

We start with the comparison of the socio-economic profiles of participants in the programmes. We concentrate on the three groups of participants that entered the programmes between 1.01.2019 and 30.08.2019: entries in the §16e (EVL), entries in the §16i (TaAM) through the transition scheme and new entries in the §16i (TaAM).

Table 1 compares selected characteristics of participants in the programmes. We start by concentrating on the participants in the §16i (TaAM) and compare the groups that entered the §16i (TaAM) through the transition scheme and new entries into the programme. The group of the new entries differ in many important aspects from the transition group. Compared to the transition group, the new entries into the programme tend to be younger, more likely to live in East Germany and have a somewhat lower share of people with vocational education. Moreover, the share of people with the migration background and people with disabilities is somewhat lower among the new participants in the §16i (TaAM). At the same time, there are no large differences in household composition between the two groups.

In terms of the labour market experience, the group of new entrants have a somewhat better attachment to the labour market compared to the transition group. While the probability of having some history of unsubsidised contributory employment in the past 20 years is roughly equal between groups, the group of new entrants have a somewhat higher probability of having at least some employment experience during the past 10 years and the same is true for the experience in marginal employment. The later result is mirrored by the fact that before entering the programme, new entrants spent less time since their last unsubsidised contributory employment relative to the participants in the transition scheme. The new entrants in the §16i (TaAM) tend to have a lower dependency on the ALG II benefits while working compared to participants in the transition scheme. The new entrants in the §16i (TaAM) are also characterised by a shorter duration of participation in the Active Labour Market Programmes (ALMPs). This is not surprising since the members of the transition scheme group participated in the pilot project “Social Inclusion in the Labour Market” before entering the §16i (TaAM). Finally, the groups of participants are similar in terms of the occupational sector and job requirements in the last nonsubsidised contributory employment (the results are available on request).

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<sup>3</sup> People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

What are the reasons for the observed differences between the two groups of participants in the §16i (TaAM) programme? On the one hand, the differences in profiles of participants may be driven by changes in selection rules and increased enrolment into the programme. On the other hand, the group of participants in the §16i (TaAM) that entered the programme through the transition scheme represents a stock sample of participants in the pilot project “Social Inclusion in the Labour Market” that did not leave the pilot project before 31.12.2018. Hence the group that entered the §16i (TaAM) through the transition scheme is subject to a selection process.<sup>4</sup> Keeping this in mind, the proceeding analysis is focused on the comparison of new entries into the §16i (TaAM) and the §16e (EVL) programmes.

Turning the attention to the comparison of new entries into the §16i (TaAM) and the §16e (EVL), we find that the participants in the §16e (EVL) are younger, more likely to have a vocational education degree and the migration status, but less likely to have a disability status. Participants in the §16e (EVL) are less likely to live in singles households and more likely in the households with a partner and children under the age of 18.

In general, the participants in the §16e (EVL) have stronger employment attachment compared to the participants in the §16i (TaAM). In the past 10 and 20 years, participants in the §16e (EVL) were more likely to be employed in an unsubsidised contributory employment as well as a marginal employment and had a longer employment duration. The participants in the §16e (EVL) spent less time since their last employment and have a lower dependency on the ALG II benefits while working compared to the participants in §16i (TaAM). Finally, the participants in the §16e (EVL) have a shorter duration of participation in the ALMPs

To examine further the impact of the above-discussed characteristics on the selection into the programmes, we estimate a logit model. Table 4 presents marginal effects that show how the probability to enter §16i (TaAM) vs §16e (EVL) changes with a change in explanatory variables. The multivariate regression analysis confirms the selection pattern described above – probability to enter §16i (TaAM) is higher for women, people that are older and people with a disability status. At the same time, living in East Germany, having vocational education and the migrant background is associated with decreasing probability to start in §16i (TaAM) as opposed to §16e (EVL). Concerning the labour market history variables, we confirm that people with low employment attachment within the last 10 years before entering the programme and those with a high dependency on the ALGII benefits have higher probability to enter §16i (TaAM).

Although the groups of participants in both programmes are similar in a sense that they lack recent work experience and a non-trivial share of participants was never employed before, the analysis identifies important differences that are likely driven by the eligibility rules to participate in the programmes. While the participants in the §16e (EVL) could be viewed as a group that is closer to the labour market, the group of participants in the §16i (TaAM) is further away from it. Taking into the account this result, we may expect that the long-term welfare recipients that are very hard to place are concentrated among the participants in the §16i (TaAM) programme. We examine this hypothesis using the LCA in the next sections.

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<sup>4</sup> During participation in the pilot programme this group could not find employment and they have been (self) selected for further participation in §16i (TaAM) by caseworkers and their own decision.

## 5 Application of Latent Class Analysis

We use LCA to look for the distinct clusters of programmes participants based on the preselected indicators (Goodman 1979, Collins/Lanza 2010). These clusters are also called “latent classes”. Roughly, a class, in our context, is a social group sharing specific observable characteristics, with no implications in terms of functional integration, social conflict, social interaction or group reproduction. Thus, the LCA should be viewed as a classification of the units of observation in terms of similarity and difference within several selected indicators. In our analysis, the indicators are economic and socio-demographic characteristics of participants in the programmes described earlier. Thus, the statistical method identifies population clusters with combinations of economic and socio-demographic characteristics that are as similar as possible within segments, and as different as possible between segments.

The LCA is different from a traditional presentation of labour-market statistics because it can account for common patterns in the distribution of various economic and socio-demographic characteristics. Simple cross-tabulations (as well as basic regression analysis) can show the prevalence of each variable or individual characteristic (e.g. gender or age) in isolation while holding all other variables constant. By contrast, the LCA approach is capable to uncover interrelations between various characteristics and potentially identify groups that face difficulties in the labour market. The focus on joint patterns of economic and socio-demographic characteristics is relevant as the design and success of the activation policies typically depends on their ability to address the real-world combinations of different economic and socio-demographic conditions<sup>5</sup>.

An important assumption underlying the application of the LCA is the local independence assumption. The assumption of local independence implies that the variables used in modelling are independent within each latent class and the latent class structure explains all the dependency among observed variables. This means that the latent variable alone should explain why the observed items relate to each other within the class. While the statistics literature offers ways to address local dependencies (Oberski 2016), their empirical applications are complicated for the cases of labour market segmentation because the underlying data structure is too complex and interdependencies are often the result of natural socio-economic processes (Hennig/Liao 2013). We apply the LCA as an exploratory method to find clusters that bring similar observations together. In this sense, the LCA may facilitate efficient reduction of the information in the data and to determine groups that are maximally “different” by some criterion without an attempt to make any causal claims about the resulting groups (Anderlucci/Hennig 2014).

We apply the LCA in three steps: First, we construct the model for a set of indicator variables (described earlier); second, subjects are assigned to the latent classes based on their modal class membership probabilities; and third, the association between the assigned class membership and external variables is investigated using cross-tabulations.

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<sup>5</sup> A similar approach to labour market segmentation was developed and used in a series of OECD reports – “Faces of Joblessness” (Fernandez et al. 2016).

## 6 Results

### 6.1 Result of the Latent Class Analysis

In the following, we present results of application of the LCA. Our goal here is to distinguish typical groups of participants in both programmes and identify clusters of participants that are expected to face the most difficulties in transition to employment. We apply the LCA to the groups of participants in the §16e (EVL) and the §16i (TaAM) separately.

The choice of the number of classes is a key issue in applying any clustering method. Several criteria exist for choosing the number of classes in the LCA such as the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) (Collins/Lanza 2010). The appropriate number of latent classes is obtained by optimizing one of the criteria by fitting several models with different numbers of classes. An alternative approach is to select the number of classes based on the idea of the domain-usefulness. The latter approach is attractive in our settings since violations of local independence assumption (discussed above) often lead to a poor model fit and overestimation of the number of classes (Oberski 2016). In the empirical application, we first determine the number of classes based on the BIC and then examine the interpretability of each class. The BIC criteria points to a six-class solution for the §16e (EVL) programme and to a nine-class solution for the §16i (TaAM) programme. These cluster solutions however provide several classes that are relatively small and not well interpretable. For the purpose of the model interpretability and the goals of our analysis we concentrate the discussion on five class solution for the §16e (EVL) programme and seven class solution for the §16i (TaAM) programme.

#### 6.1.1 Clusters of participants in §16e (EVL)

We start the analysis by examining the five clusters of participants in the §16e (EVL) and proceed with the §16i (TaAM). Figure 2 describes the clusters of participants in the §16e (EVL) programme.<sup>6</sup>

In general, we find two clusters of relatively older participants separated by the geographical location (East Germany/West Germany including Berlin) and the three clusters of young and middle-aged participants that are primarily defined by gender and the migration background. We discuss these clusters separately.

Two major historical processes play a central role in defining clusters of relatively older participants in the programme. While the process of German reunification defines the first cluster of older participants from East Germany – “East German losers of German reunification”, economic and technological transformation define the second cluster of older participants from West Germany – “West German losers of economic transformation process”. Both clusters have similar socio-demographic structure. The average age in both clusters is just below 54. Men represent the majority of the participants. The shares of migrants, people with disabilities and people living in single household are somewhat higher in the cluster of “West German losers of economic transformation process”, but the share of migrants and people with disabilities is very low in both clusters. At the same time, the share of people with vocational qualification is much higher in the cluster of

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<sup>6</sup> In addition, we report results of the complete specification in Table 2



“East German losers of German reunification” compared to a cluster of “West German losers of the economic transformation process” (91 percent vs. 62 percent).

Regarding previous work experience, we find that a lower previous employment attachment in the cluster of “East German losers of reunification” compared to cluster of “West German losers of economic transformation process”. While the share of people with the short nonsubsidised contributory work experience is 60 percent in the cluster of “East German losers of German reunification”, this share is lower in the cluster of “losers of economic transformation process” (39 percent). Members of the cluster of “East German losers of German reunification” have shorter duration of the unsubsidised contributory employment and over 17 percent (45 percent) of individuals were not in unsubsidised contributory employment in the past 20 (10) years as opposed to 7 percent (21 percent) in the cluster of “West German losers of the economic transformation process”. While dependency on the ALG II benefits while working is higher in the cluster of “East German losers of German reunification”, the time since the last nonsubsidised contributory employment is roughly equal between two clusters. At the same time, cluster of “East German losers of German reunification” has a higher probability and duration of marginal employment.

The gender and migration backgrounds define the remaining three clusters of the §16e (EVL) programme participants. We find that one-third of all programme participants are younger men and the clusters of younger women and migrants are approximately 13 percent each. The average age in these clusters is between 36 and 41. While 43 percent of members of the clusters of younger men and women live in East Germany, the proportion of East German participants in the cluster of migrants is much lower – 9 percent. The overall low probability of migrants to settle in East Germany explains the later result. The probability of having vocational education in the clusters of younger men and women (50 percent and 57 percent) is in line with the overall average (see Table 1) and is much lower in the cluster of migrants (19 percent).

Not surprising, the household composition differs between clusters. Two-thirds of the cluster of younger men are single and further 22 percent live in households with a partner and a child under 18. The presence of children plays a much more important role in the cluster of younger women – 85 percent of the cluster are single mothers and 11 percent live in households with a partner and children. A majority of the migrant cluster members live in households with a partner and children (54 percent) and further 34 percent are single.

The employment attachment differs strongly between the clusters of participants. We find that according to our definition 54 percent of cluster of younger men have short employment experience. This figure is higher for the clusters of younger women and migrants (67 percent and 81 percent). While family responsibilities may explain short employment experience of women, time since arrival to Germany and institutional barriers to participate in the labour market may explain the results for migrants. The examination of labour market history variables confirms a somewhat better employment attachment of younger men. In 20 (10) years before enrolment into the §16e (EVL) programme 18 percent (29 percent) of members of the younger men cluster were never employed in nonsubsidised contributory employment. The proportion of never employed people is higher in the clusters of younger women and migrants 28 percent (46 percent) and 51 percent (57 percent). The employment duration is also higher in the cluster of younger men. At the same time, the probability and duration of marginal employment is higher in the cluster of younger women compared to the clusters of younger men and migrants. While the share of members of the cluster



of young men that receive the ALG II benefit while employed is lower compared to the clusters of younger women and migrants, the duration since the last employment is approximately equal between the clusters.

Figure 2: Participant clusters in §16e (EVL)

Cluster Ie (15%) East German losers of German reunification		Cluster IIe (24%) West German losers of economic transformation	
East	100%	East	2%
Women	39%	Women	30%
Age	54Y	Age	54Y
Migrant	3%	Migrant	7%
Voc. Education	91%	Voc. Education	62%
Single	73%	Single	82%
Couple no children	23%	Couple no children	15%
Short work experience	60%	Short work experience	39%
Not employed, 10Y	45%	Not employed, 10Y	21%
Employed, 10Y*	1,73J	Employed, 10Y*	2,6Y
Employed + ALGII, 10Y*	46%	Employed + ALGII, 10Y*	37%

Cluster IIIe (34%) Younger men		Cluster IVe (13%) Younger women		Cluster Ve (14%) Migrants	
East	43%	East	43%	East	9%
Women	17%	Women	93%	Women	22%
Age	36Y	Age	39Y	Age	41Y
Migrant	0%	Migrant	16%	Migrant	100%
Voc. Education	50%	Voc. Education	57%	Voc. Education	19%
Single	75%	Single parent	85%	Single	34%
Couple with children	22%	Couple with children	11%	Couple with children	54%
Short work experience	54%	Short work experience	67%	Short work experience	81%
Not employed, 10Y	29%	Not employed, 10Y	46%	Not employed, 10Y	57%
Employed, 10Y*	1,7Y	Employed, 10Y*	1,4Y	Employed, 10Y*	1,3Y
Employed + ALGII, 10Y*	45%	Employed + ALGII, 10Y*	49%	Employed + ALGII, 10Y*	58%

Note: Selected results, for full results see Table 2. \* Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

### 6.1.2 Clusters of participants in §16i (TaAM)

Figure 3 describes the clusters of participants in the §16i (TaAM) programme<sup>7</sup>. At large results on composition of clusters for the §16i (TaAM) are similar to the results found for the §16e (EVL). At

<sup>7</sup> In addition, we report results of the complete specification in Table 3.

the same time, we identify several important clusters of participants that are particularly far away from the labour market.

For the group of participants that are relatively older we find three distinct clusters of participants. Similar to our previous results for older participants in the 16e (EVL) we find distinct clusters of older participants from East Germany – “East German losers of reunification” and West Germany – “West German losers of economic transformation process”. These clusters are very similar in many important aspects to the clusters found in the previous section. In addition, the LCA identified the third cluster of older workers that are further away from the labour market. For the cluster of younger and middle-aged participants, we find four clusters: cluster of middle age men, cluster of younger educational losers and two clusters of women that aim to (re-)enter the labour market after a long family brake. In the following, we describe the resulting clusters separately.

Over 80 percent of members of the clusters, “East German losers of German reunification” and “West German losers of economic transformation process” are single. Members of these clusters are mostly men and all of them are German citizens. Relative to the members of the cluster “West German losers of economic transformation process” a higher share of members of the cluster “East German losers of reunification” have vocational education degree (84 percent vs. 58 percent). The previous labour market attachment is higher among members of the cluster “West German losers of economic transformation process”. While 47 percent of members of the cluster “West German losers of economic transformation process” have short work experience, the proportion of people with short work experience is higher among the cluster members of “East German losers of German reunification”. In addition, the LCA model identified a class of older participants in §16i (TaAM) that are subjected to multiple barriers to enter employment. The members of this class are generally older (56) and live in both East and West Germany. Only 13 percent of class members have vocational education and 40 percent are migrants. Furthermore, while 45 percent are single, 55 percent live in households with a partner and no children. In terms of the labour market attachment 78 percent of cluster members have short work experience and 35 percent (70 percent) were not in the nonsubsidised contributory employment in the past 20(10) years. The results show that the dependency on the ALGII benefits is also high in the cluster of older workers with additional barriers to labour market entry.

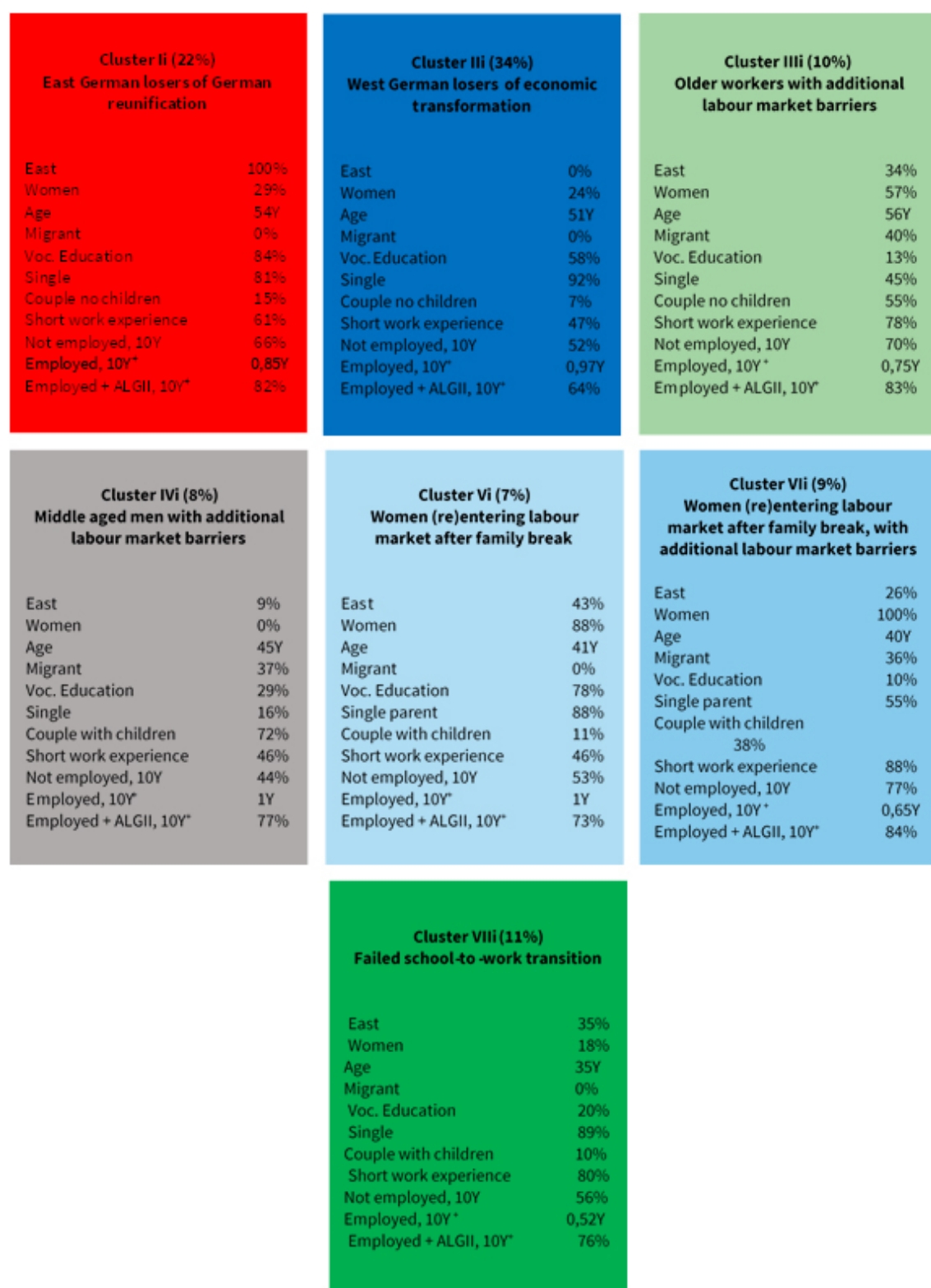
The cluster of middle-aged men (average age 45) is characterised by a relatively low share of people with a vocational education (29 percent) and high share of migrants (37 percent). 72 percent of the cluster members live in the household with a partner and children under 18. Relative to the other clusters the previous labour market attachment of members in this cluster is relatively high. Only 46 percent of individuals have low work experience. Furthermore 12 percent (44 percent) were not in unsubsidised contributory employment in the past 20(10) years. Nevertheless, the dependency on ALGII benefits while working remains high in this cluster. 74 percent of individuals were receiving ALGII benefits for over 50 percent of the time in employment.

The two clusters of women that aim to enter labour market after a family brake differ in many socio-economic characteristics and previous labour market attachment. While the first cluster (cluster Vi) may be viewed as relatively close to the labour market, the second cluster (cluster VII) is further away and includes members that are subjected to more barriers to (re)enter the labour market. The identified clusters of women differ in terms of vocational education attainment (78 percent vs 10 percent) and migration background (0 percent vs 36 percent). Surprisingly the share

of single parents is higher in the cluster that is closer to the labour market (88 percent vs 55 percent). While 46 percent of members of the cluster that is closer to the labour market have short work experience, this share is much higher in the cluster of women with accumulated barriers (88 percent). Consequently, the share of people that were not in the nonsubsidised contributory employment during the past 10 and 20 years and dependency on ALGII benefits while working are much higher in the cluster of women with accumulated barriers to labour market entry. The strong heterogeneity in labour market histories of women and in particular (single) mothers have long been documented in the literature (Zagel 2014, Kopf and Zabel 2017). The work-family trade-off and persistent cultural norms are most likely explanations of the observed heterogeneous inflows of mothers in the programmes.

The last cluster of participants in §16i (TaAM) are younger participants (average age 35) is characterised by a relative low share of people with vocational education and high share of people living in single's households. Although the share of people that were never in the nonsubsidised contributory employment is on par with other clusters the duration of employment spell in the past 20(10) years is very low and the ALGII dependency while working is high.

Figure 3: Participant clusters in §16i (TaAM)



Note: Selected results, for full results see Table 3. \* Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

## 7 Conclusions – three fields to finetune the programmes

Our findings highlight that the participants of the two programme versions §16i (TaAM) and §16e (EVL) are surprisingly similar; both are matching the general idea of §16e and §16i to provide a kind of subsidized labour for groups with little work experience and long unemployment durations. Just gradual but nevertheless relevant differences in age and labour market remoteness can be observed. Age and other age-related parameters (such as years in unemployment, family status) can be explained mostly by the programme eligibility criteria, while these criteria explain only a minor part of labour market remoteness, when measured by comparison to age/gender/education cells. At the same time the design of the programmes (§16e (EVL) and §16i (TaAM)) differ a lot. Employment subsidy paid to participants in §16i (TaAM) is much more generous and have longer potential duration compared to §16e (EVL).

A situation in which two very similar groups of participants are assigned to two substantially different subsidised employment programmes may distort decision of caseworkers, potentially lead to unequal treatment of programme participants, and inflate administrative costs of running the programme. The caseworkers' assignment decision to either 16e or 16i shows some signs to support what could be called a *cinderella hypothesis*: Clients who look quite similar in terms of most sociodemographic data – *cinderella's peas* – are sorted first along programme eligibility criteria (age and unemployment duration thresholds), but then along implicit or even completely unrecorded criteria of 'good' or 'bad', like work motivation, cooperation and health. The good go into 16e, while the bad go into 16i, while good and bad show only small distances in the observables (like one year versus two years employment in a 10 years observation period). Unpublished case study evidence by the IAB, namely the researchers Bauer, Globisch, Kupka, Gottwald, but also the finding that more than 40 percent of the long-term unemployed are reporting serious health problems affecting their readiness to work (Eggs et al. 2014), and roughly 10 percent stating that their health situation makes it impossible to take up work (Lietzmann et al. 2019), support this hypothesis. The data basis of the cluster analysis presented here does not include sufficient data to prove this – but the evidence of absence does not mean the absence of evidence, thus the results should re-commendably be reproduced involving better health data.

The lack of relevant information about participants (e.g. detailed health status or motivation) may also be a burden to caseworkers. While arguably caseworkers have better knowledge of the strong and weak sides of potential programmes participants, some individuals' health and behavioural issues may be hidden and arise only during participation in the programmes. To respond to this challenge caseworkers find themselves in a situation there they need to *'walk on the thin line'* in deciding which programme should be allocated to a long-term unemployed. Consequently, one may expect a margin of error in allocation of programme participants and not to mention increasing administrative costs of running two programmes as opposed to one. As of now, both programmes allow great flexibility in the design and duration of participation. Merging two subsidised employment programmes under one roof and concentrating on the issues relevant to specific participants groups (clusters) may provide relevant way to adjust the design of the programmes.

Looking into the groups clusters of participants more deeply points at a few remarkable issues and appropriate policy responses:

First, there are clusters with elder participants, such as clusters I and II in both 16e and 16i, where we can see that preceding **long-term unemployment<sup>8</sup> is less associated with deficits in education, but more with historical processes** like the West-German socioeconomic transformation (tertiarization, digitalisation, restructuring, rationalization) or the socioeconomic transformation of East Germany, each of them making individuals redundant and often excluding them from a return into the labour market, due to an unfavourable match of increased individual risks (health, family problems, the latter indicated by the high share of single person households and typically associated with long-term unemployment) and the mentioned historical conditions. Although this has to be treated as an interpretive hypothesis, as the data do not allow for a macro-micro conclusion (history-biography), and some variables are observed not at all (health), or only indirectly (family problems) in the data used for the presented analysis, it is highly plausible and supported by a broad literature<sup>9</sup>. Nevertheless, participants in these clusters are not only far off the labour market, but, given their age, also relatively close to the biographic transition into retirement, making efforts to retrain or requalify the respective clients for fulfilling the productivity and adaptability criteria of the first labour market quite unlikely to be successful. Participation in work schemes for this group – clusters I and II in 16 i and e - should mainly focus on the psychological and social benefits of subsidized labour: Stabilizing individuals and keeping them integrated in society, in the sense of sharing everyday life, community and participation. This should include a perception of work as a sensemaking activity, contributing to the community, but not necessarily to be competitive and productive at full market levels. Considered through a theoretical lens, this kind of work scheme should better refrain from recommodifying this almost-lost part of the labour force, and focus on an integrative and sensemaking life experience in order to avoid or reduce detrimental effects of long-term unemployment on the clients as well as strengthen their social integration. Without having clear numbers on that yet, unpublished case study evidence from other parts of the 16e/i evaluation by Globisch, Gottwald and Kupka suggests that quite a high proportion of participants in the clusters I and II suffers from bad health, bad motivation, ill mental status and other social and psychological problems. If this should prove true at a larger level, coaching – which is systematically at offer in both programmes – should more target at coaching the clients to cope with everyday life and to become and stay psychologically and socially stable, involving counselling and case management, instead of making them fit for and exposing them to the first labour market. Type III in 16i, often showing language problems and lower education, points into the same direction, but adds lack of qualification – which is not so much a problem when full labour

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<sup>8</sup> Understood here as non-participation in unsubsidized non-marginal employment for more than 12 months.

<sup>9</sup> A tentative and explorative literature review shows Adamy (1998) on poverty rows filling with the long-term unemployed in the late 1970s and onwards, Fourastié (1969) on tertiarization and its power to make people from the secondary sector redundant, Lutz (1989) on structural unemployment in the 1980s explained – among other reasons – by a time lag in tertiarisation, Jahoda et al. (1933) as an early hint on family ruptures and health issues associated with unemployment, with lots of follow up literature. Raihel/Schlemmer on the historical scenario of unemployment returning to Germany in the 1970s. Feser/Lärm (1982) give an early account on the nexus between the first microelectronic revolution and structural unemployment, while Berthold and Coban (2013) argue for a dissolution of structural unemployment by wage subsidies policy and workfare policies in a transition period of the early 2000s, Promberger (2012) complementarily for a transformation of structural unemployment into flexible labour – which leaves a certain clientele aside we now can find in long-term unemployment and work (or workfare) schemes like 16i. Still, apart from some youth research, there is a certain lack of biographical studies which gives evidence on the actual connection between economic history of the 1970s to the 2000s and individual fates of those which are long-term unemployed now since 10 years or more in 2019. But, again, the absence of evidence is not the evidence of absence – as even this erratic literature survey strongly suggests that it is out there but yet has to be confirmed.

market reentry is not at stake anyway – but also a migration background, usually associated to a lack of German language skills, which is a social integration barrier and a social cohesion risk in various respects.

**Deficits in education and vocational training are highly relevant labour market (re)entry barriers for the younger and mid-aged participants** in the clusters IIIe, VIIi, but also in the case of IVi and Ve, where this is above average associated with migration backgrounds and the respective language barriers, which have been proved highly relevant for labour market integration of migrants (Deeke 2011). As cluster IIIe is neither strongly associated with migration background, nor high-scoring in undereducation compared to the other clusters, and the average age is about 36, we hypothetically may suspect health or motivational problems are contributing to their labour market remoteness – the proportion of single households which is high for that age group points on the latter factor. All in all, these clusters' include what could be called losers of the educational system, where the losses and failures may be associated with interdependent problems of the education system and its social barriers (Allmendinger/Leibfried 2005), with the self-reproduction of class-specific cultural patterns (Willis 1977), problems and failures of a biographical transition under adverse conditions (Schels 2012), as well as with an intergenerational transmission of a disadvantaged social status (Jenkins/Siedler 2007). Given this, we may hypothesize that education and training offers specifically designed for social groups with little learning and education affinity might support all these clusters except IIIe, which nevertheless would have to be prepared for educational efforts through carefully acting motivational support. Any improvement of the educational status, be it through formal vocational training, school education, language training and foregoing or accompanying motivational training might be more expensive and less successful with these clients compared to the general population, moreover it may come quite late in the clients' biographies, as their formative period is biographically closing, but it is worth trying for the sake of the mostly younger clients, but also for public budgets, as the clients are – according to their previous labour market history - likely to stay in welfare (or wage subsidies) for about three more decades at average if no social investment in their education, and an individual investment in effort, brings them out. Coaching, in this respect, would have to target not only social stabilisation and health, but also on education in two respects: Motivating educational take-ups, but also keeping the clients motivated to continue their educational efforts. This means, coaching in such a sense could very likely become a necessity for a period certainly longer than one year.

Another group of clusters (IVe, Vi, VIIi), **mainly including younger and mid-aged women, is exposed to gender-specific labour market problems leading them into or fixing them in long-term unemployment.** This comprises problems which, as a part of gender-inequal social structures, are associated with different and contradictory female-ascribed roles and tasks in labour market and society, which are, together with respective norms, becoming increasingly inconsistent: What used to be critically called an alternative role (Offe/Hinrichs 1977) for women (Gottschall 1995), – the family-carer role in a male breadwinner model - is growingly difficult to access under conditions of low income, precarious labour, difficult biographical transitions, family ruptures, economic pressure and the insinuations of the activating welfare state. Other authors point at historical findings that in lower social classes and most periods of time, women often were strongly participating in (paid) labour or extensive subsistence work without being restricted to family and care work (Janssens 1997, Clark 1982), which means that the male breadwinner model



is either just a model or a development of post-1945 Europe. Anyway, such gender-specific labour market and social structures mean that – given the age cuts of the programmes - single motherhood, often with schoolchildren, or unsuccessful labour market return efforts after a family phase add to the other reported barriers of low work experience, like low education and training, potentially combined to unreported barriers of bad health status and motivational problems. Nevertheless, it does not have to be family rupture or single motherhood, a double unemployment or one unemployed and one marginal employment within a couple will do likewise, although incidence of that seems low among the participants of 16e and i. Anyway, the consequences for the content of the programmes should be a clear enabling component for women to be independent, economically active and improve their psychological strength and ‚human capital‘ in terms of education and training in order to gain a better labour market position.

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# Appendix

**Table 1: Means of selected characteristics of participants in §16i (TaAM) and §16e (EVL)**

Variable	Transition schema §16i (TaAM)	New participants §16i (TaAM)	Participants §16e (EVL)
<b>Gender</b>			
Women	0.382	0.374	0.345
<b>Age in categories</b>			
25-34	0.025	0.112	0.235
35-44	0.200	0.237	0.291
45-54	0.412	0.352	0.289
55 >	0.363	0.299	0.185
Age (cont.)	51.11	48.36	44.00
<b>Region</b>			
East Germany	0.225	0.349	0.368
<b>Vocational education</b>			
Yes	0.569	0.499	0.559
<b>Nationality</b>			
Migrant	0.130	0.103	0.181
<b>Household type</b>			
Single	0.626	0.641	0.609
Single parent with a child under 18	0.113	0.124	0.123
Couple without children	0.132	0.120	0.099
Couple with children under 18	0.130	0.115	0.169
<b>Disability status</b>			
Yes	0.094	0.073	0.033
Short work experience	0.613	0.604	0.567
<b>Cumulated duration in years:</b>			
<b>Employment. 20 years<sup>+</sup></b>			
never employed	0.264	0.246	0.209
less than 2.5 years	0.387	0.435	0.360
2.5 - 5 years	0.204	0.195	0.212
5 - 10 years	0.117	0.102	0.143
10 years >	0.028	0.022	0.076
<b>Employment. 10 years<sup>+</sup></b>			
never employed	0.647	0.590	0.356
less than 6 months	0.165	0.203	0.182
6 months to 2 years	0.139	0.155	0.223
2 years >	0.049	0.052	0.239
<b>% of time employment and ALGII. 10 years<sup>+</sup></b>			
0% to 50%	0.096	0.296	0.490
50% >	0.904	0.704	0.510
<b>Marginal employment. 10 years</b>			
Never in marginal employment	0.644	0.572	0.345
1 to 3 months	0.195	0.210	0.265
3 months >	0.161	0.217	0.390
<b>ALMP. 10 years</b>			
Never in ALMP	0.000	0.027	0.079
< 1 year	0.009	0.208	0.431
1 to 2 years	0.083	0.204	0.230
2 to 3 years	0.178	0.194	0.135

Variable	Transition schema \$16i (TaAM)	New participants \$16i (TaAM)	Participants \$16e (EVL)
3 to 4 years	0.210	0.159	0.066
5 years >	0.521	0.208	0.059
Time since last employment. 20 years*			
employed on 31.12.18	0.000	0.010	0.012
< 5 years	0.248	0.395	0.578
5 to 10 years	0.622	0.504	0.350
10 years >	0.130	0.091	0.060
N	3,053	20,558	5,806

Note: \* Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

**Table 2: Descriptive statistics of the clusters found with LCA: participant in \$16e (EVL)**

	Cluster Ie  East Ger- man losers of German reunifica- tion	Cluster Ile  West Ger- man losers of economic transfor- mation	Cluster IIle  Younger men	Cluster IVe  Younger women	Cluster Ve  Migrants	Total
Cluster size. %	15.14	24.25	33.50	13.42	13.69	100
Gender						
Women	0.39	0.30	0.17	0.93	0.22	0.345
Age in categories						
25-34	0.00	0.00	0.47	0.28	0.29	0.235
35-44	0.02	0.05	0.46	0.54	0.37	0.291
45-54	0.52	0.52	0.07	0.17	0.27	0.289
55 >	0.46	0.43	0.00	0.01	0.07	0.185
Age (cont.)	53.98	53.53	35.96	38.86	40.81	44.00
Region						
East Germany	1.00	0.02	0.43	0.43	0.09	0.368
Vocational education						
Yes	0.91	0.62	0.50	0.57	0.19	0.559
Nationality						
Migrant	0.03	0.07	0.00	0.16	1.00	0.181
Household type						
Single	0.73	0.82	0.75	0.00	0.34	0.609
Single parent with a child under 18	0.02	0.01	0.00	0.85	0.01	0.123
Couple without children	0.23	0.15	0.03	0.03	0.11	0.099
Couple with children under 18	0.02	0.01	0.22	0.11	0.54	0.169
Disability status						
Yes	0.04	0.06	0.00	0.01	0.01	0.033
Short work experience	0.60	0.39	0.54	0.67	0.81	0.567
Cumulated duration in years:						
Employment 20 years						
never employed	0.17	0.07	0.18	0.28	0.51	0.209
less than 2.5 years	0.41	0.20	0.45	0.42	0.30	0.360
2.5 - 5 years	0.22	0.27	0.22	0.18	0.11	0.212
5 - 10 years	0.13	0.26	0.12	0.09	0.05	0.143

	Cluster Ie East German losers of German reunification	Cluster IIe West German losers of economic transformation	Cluster IIIe Younger men	Cluster IVe Younger women	Cluster Ve Migrants	Total
10 years >	0.07	0.20	0.03	0.03	0.02	0.076
Employment 10 years						
never employed	0.45	0.21	0.29	0.46	0.57	0.356
less than 6 months	0.18	0.14	0.21	0.19	0.17	0.182
6 months to 2 years	0.18	0.24	0.26	0.20	0.16	0.223
2 years >	0.19	0.41	0.24	0.14	0.10	0.239
% of time employment and ALGII. 10 years						
0% to 50%	0.38	0.6	0.5	0.36	0.4	0.49
50% >	0.62	0.40	0.50	0.64	0.61	0.510
Marginal employment. 10 years						
Never in marginal employment	0.29	0.37	0.33	0.24	0.48	0.345
1 to 3 months	0.23	0.24	0.29	0.29	0.26	0.265
3 months >	0.48	0.39	0.38	0.47	0.25	0.390
ALMP. 10 years						
Never in ALMP	0.08	0.07	0.05	0.11	0.13	0.079
< 1 year	0.36	0.44	0.40	0.42	0.58	0.431
1 to 2 years	0.22	0.24	0.25	0.22	0.19	0.230
2 to 3 years	0.17	0.13	0.16	0.15	0.05	0.135
3 to 4 years	0.09	0.06	0.08	0.06	0.02	0.066
5 years >	0.08	0.06	0.07	0.04	0.02	0.059
Time since last employment. 20 years <sup>+</sup>						
employed on 31.12.18	0.00	0.01	0.01	0.02	0.03	0.012
< 5 years	0.54	0.51	0.63	0.57	0.65	0.578
5 to 10 years	0.38	0.38	0.33	0.37	0.28	0.350
10 years >	0.08	0.10	0.03	0.04	0.04	0.060

Note: <sup>+</sup> Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

**Table 3: Descriptive statistics of the clusters found with LCA: participant in \$16i (TaAM)**

Table	Cluster II	Cluster III	Cluster IIII	Cluster IVI	Cluster VI	Cluster VII	Cluster VIII	Total
	East German losers of German reunification	West German losers of structural transformation	Older workers with additional labour market barriers	Middle aged men with additional labour market barriers	Women (re)entering labour market after family break	Women (re)entering labour market after family break. with additional labour market barriers	Failed school-to-work transition	
Cluster size	21.73	33.69	9.87	7.68	6.98	9.40	10.65	100

Table	Cluster II	Cluster III	Cluster IIIi	Cluster IVi	Cluster Vi	Cluster VII Women (re)enter- ing labour market af- ter family break. with addi- tional la- bour mar- ket barriers	Cluster VIII Failed school-to- work tran- sition	Total
Gender								
Women	0.29	0.24	0.57	0.00	0.88	1.00	0.18	0.374
Age in categories								
25-34	0.00	0.01	0.00	0.08	0.25	0.26	0.58	0.112
35-44	0.10	0.18	0.00	0.42	0.47	0.48	0.42	0.237
45-54	0.40	0.46	0.38	0.39	0.29	0.24	0.00	0.352
55 >	0.50	0.36	0.62	0.10	0.00	0.02	0.00	0.299
Age (cont.)	53.74	51.47	55.91	45.12	40.67	40.35	34.97	48.36
Region								
East Germany	1.00	0.00	0.34	0.09	0.43	0.26	0.35	0.349
Vocational education								
Yes	0.84	0.58	0.13	0.29	0.78	0.10	0.20	0.499
Nationality								
Migrant	0.00	0.00	0.40	0.37	0.00	0.36	0.00	0.103
Household type								
Single	0.81	0.92	0.45	0.16	0.00	0.03	0.89	0.641
Single parent with a child under 18	0.01	0.01	0.00	0.08	0.88	0.55	0.00	0.124
Couple without children	0.15	0.07	0.55	0.04	0.01	0.04	0.02	0.120
Couple with children un- der 18	0.03	0.00	0.00	0.72	0.11	0.38	0.10	0.115
Disability status								
Yes	0.07	0.10	0.06	0.06	0.03	0.04	0.05	0.073
Short work experience	0.61	0.47	0.78	0.46	0.46	0.88	0.80	0.604
Cumulated duration in years:								
Employment. 20 years								
never employed	0.24	0.14	0.35	0.12	0.21	0.57	0.33	0.246
less than 2.5 years	0.46	0.36	0.45	0.45	0.45	0.37	0.62	0.435
2.5 - 5 years	0.19	0.28	0.13	0.27	0.25	0.04	0.04	0.195
5 - 10 years	0.09	0.18	0.06	0.12	0.09	0.02	0.01	0.102
10 years >	0.02	0.04	0.01	0.03	0.01	0.00	0.00	0.022
Employment. 10 years								
never employed	0.66	0.52	0.70	0.44	0.53	0.77	0.56	0.590
less than 6 months	0.18	0.21	0.17	0.24	0.19	0.14	0.29	0.203
6 months to 2 years	0.11	0.20	0.10	0.24	0.21	0.07	0.13	0.155
2 years >	0.05	0.07	0.03	0.08	0.07	0.02	0.02	0.052
% of time employment and ALGII. 10 years								
0% to 50%	0.22	0.39	0.2	0.26	0.3	0.19	0.23	0.296
50% >	0.78	0.61	0.80	0.74	0.69	0.81	0.77	0.704



Table	Cluster II	Cluster III	Cluster IIIi	Cluster IVi	Cluster Vi	Cluster VII	Cluster VIII	Total
	East Ger- man los- ers of Ger- man reu- nification	West Ger- man los- ers of structural transfor- mation	Older workers with addi- tional la- bour mar- ket barri- ers	Middle aged men with addi- tional la- bour mar- ket barri- ers	Women (re)enter- ing labour market af- ter family break	Women (re)enter- ing labour market af- ter family break. with addi- tional la- bour mar- ket barri- ers	Failed school-to- work tran- sition	
Marginal employment. 10 years								
Never in marginal em- ployment	0.61	0.59	0.62	0.48	0.47	0.55	0.55	0.572
1 to 3 months	0.19	0.21	0.18	0.24	0.24	0.24	0.26	0.210
3 months >	0.20	0.21	0.19	0.28	0.29	0.21	0.19	0.217
ALMP. 10 years								
Never in ALMP	0.02	0.02	0.03	0.03	0.04	0.06	0.01	0.027
< 1 year	0.14	0.20	0.16	0.31	0.32	0.30	0.18	0.208
1 to 2 years	0.18	0.20	0.15	0.22	0.26	0.25	0.24	0.204
2 to 3 years	0.21	0.19	0.18	0.17	0.19	0.19	0.21	0.194
3 to 4 years	0.19	0.16	0.18	0.12	0.11	0.11	0.17	0.159
5 years >	0.27	0.22	0.30	0.15	0.09	0.08	0.19	0.208
Time since last employ- ment: 20 years <sup>+</sup>								
employed on 31.12.18	0.01	0.01	0.01	0.01	0.01	0.03	0.00	0.010
< 5 years	0.37	0.36	0.38	0.45	0.40	0.50	0.48	0.395
5 to 10 years	0.53	0.51	0.52	0.45	0.51	0.44	0.50	0.504
10 years >	0.09	0.12	0.09	0.09	0.08	0.04	0.02	0.091

Note: <sup>+</sup> Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

**Table 4: Marginal effects of logit model of entering §16i (TaAM) vs §16e (EVL)**

Variable	Marginal effects	95% Confidence interval
<b>Gender</b>		
Women	0.029*	[0.02,0.04]
<b>Age in categories</b>		
25-34	ref.	
35-44	0.085*	[0.07,0.10]
45-54	0.134*	[0.12,0.15]
55 >	0.161*	[0.14,0.18]
<b>Region</b>		
East Germany	-0.060*	[-0.07,-0.05]
<b>Vocational education</b>		
Yes	-0.036*	[-0.05,-0.03]
<b>Nationality</b>		
Migrant	-0.098*	[-0.11,-0.08]
<b>Household type</b>		
Single	ref.	
Single parent with a child under 18	0.049*	[0.04,0.06]
Couple without children	-0.006	[-0.02,0.01]
Couple with children under 18	0.004	[-0.01,0.02]
<b>Disability status</b>		
Yes	0.101*	[0.08,0.12]
<b>Cumulated duration in years:</b>		
<b>Employment, 10 years</b>		
never employed	ref.	
less than 6 months	0.054*	[0.03,0.08]
6 months to 2 years	0.020	[-0.01,0.05]
2 years >	-0.148*	[-0.18,-0.11]
<b>% of time employment and ALGII, 10 years</b>		
0% to 50%	-0.092*	[-0.11,-0.08]
50% >	ref.	
<b>Marginal employment, 10 years</b>		
Never in marginal employment	ref.	
1 to 3 months	-0.064*	[-0.08,-0.05]
3 months >	-0.133*	[-0.14,-0.12]
<b>ALMP, 10 years</b>		
Never in ALMP	ref.	
< 1 year	0.085*	[0.06,0.11]
1 to 2 years	0.166*	[0.14,0.20]
2 to 3 years	0.213*	[0.18,0.24]
3 to 4 years	0.258*	[0.23,0.29]
5 years >	0.274*	[0.24,0.30]
<b>Time since last employment. 20 years</b>		
<b>Never employed, 20 years</b>		
employed on 31.12.18	-0.052	[-0.13,0.03]
< 5 years	-0.060*	[-0.10,-0.02]
5 to 10 years	0.059*	[0.02,0.09]
10 years >	0.105*	[0.08,0.13]
N	26,364	

Note: \*p<0.05. \* Employment is defined as regular non-subsidized contributory employment (full and part-time) excluding mini-jobs. Average across people that were previously employed. People that are working and receiving insufficient income may supplement their income with additional welfare transfers.

Source: Author's calculations.

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# Imprint

## **IAB-Discussion Paper 27|2020**

### **Date of publication**

10 September 2020

### **Publisher**

Institute for Employment Research  
of the Federal Employment Agency  
Regensburger Str. 104  
90478 Nürnberg Germany

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### **ISSN**

2195-2663

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