Employability among refugees and how it is affected by public integration programmes

Vibeke Jakobsen and Frederik Thuesen

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Abstract

When refugees settle in a new country and start searching for a job, labour market research often conceives of the outcome of this search in binary terms as either success or failure. Nevertheless, finding a job in a new country can often be regarded as a process that can be measured as progress through many steps towards improving employability and securing a job. In this paper, we conceptualize this process with inspiration from research on the concept of employability and analyse the extent to which different dimensions in a survey-based concept of refugee employability relate to subsequent employment among newly arrived refugees in Denmark, mainly from Syria and Eritrea. In a second step we investigate the extent to which public Danish integration programmes affect these refugees' potential progress in employability. The analyses exploit up to six waves of survey data collected from 2017 through 2019 measuring newly arrived refugees' employability on a quarterly basis. We find that municipal caseworkers' evaluations of refugee qualifications and goal directedness and the refugees' own assessment of their job faith and goal directedness correlate positively with subsequent employment. The analyses also show that participation in job-oriented programmes benefits the refugees' employability, especially progress in language skills, caseworker assessed qualifications and goal directedness as well as the refugees' self-assessed job faith and goal directedness.

Keywords: Refugees, Employment, Employability, Progress Measurement

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Jakobsen, Vibeke[1]

Thuesen, Frederik[2]

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When refugees settle in a new country and start searching for a job, labour market research often conceives of the outcome of this search in binary terms as either success or failure. Nevertheless, finding a job in a new country can often be regarded as a process that can be measured as progress through many steps towards improving employability and securing a job. In this paper, we conceptualize this process with inspiration from research on the concept of employability and analyse the extent to which different dimensions in a survey-based concept of refugee employability relate to subsequent employment among newly arrived refugees in Denmark, mainly from Syria and Eritrea. In a second step we investigate the extent to which public Danish integration programmes affect these refugees' potential progress in employability. The analyses exploit up to six waves of survey data collected from 2017 through 2019 measuring newly arrived refugees' employability on a quarterly basis. We find that municipal caseworkers' evaluations of refugee qualifications and goal directedness and the refugees' own assessment of their job faith and goal directedness correlate positively with subsequent employment. The analyses also show that participation in job-oriented programmes benefits the refugees' employability, especially progress in language skills, caseworker assessed qualifications and goal directedness as well as the refugees' self-assessed job faith and goal directedness.

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[1] Senior Researcher, VIVE – The Danish Center for Social Science Research, vij@vive.dk
[2] Senior Researcher, VIVE – The Danish Center for Social Science Research, frt@vive.dk

Introduction

The integration of refugees into their host country's labour market is often a lengthy and sinuous process. Refugees may need to develop language skills, acquire job-relevant qualifications, and build social networks that can help them find jobs (Gubrium and Leirvik, 2022; Liversage, 2009a; Wong, 2013). In Denmark and many other countries, refugees receiving unemployment or cash benefits are obliged to participate in active labour markets programmes (ALMPs) and in other integration-oriented interventions seeking to improve their employability, that is, a measure of their personal resources that are likely to improve their chances of securing a job such as language skills, job motivation, qualifications, social networks and knowledge about the labour market. The causal effects of such interventions on refugees' labour market participation and employment rates have been estimated by a rapidly growing body of sociological and economic research in the migration field (Butschek and Walter, 2014; Thuesen et al., 2020). While providing scientifically valuable and policy-relevant knowledge, these analyses do not explain how such interventions might potentially succeed or fail because of their impact or lack of impact on employability-relevant factors such as job motivation, language skills, professional, personal and social competencies, and health. Lack of knowledge on which interventions are most likely to further refugees' employability may impede the ability of professional caseworkers, NGOs and other relevant stakeholders to initiate relevant interventions and provide adequate support for refugees. To improve our understanding of aspects of the integration process relevant to employment and to help welfare professionals provide more adequate support in this process, we need tools that can measure employability and progress in employability.

The concept of employability has received scholarly attention since the 1950s, initially focussing on programmes that sought to strengthen unemployed persons' resources that could promote their employment chances (Feintuch, 1955). Over the years, researchers continued to analyse factors that may help jobseekers and employees obtain and maintain employment and navigate 'protean careers' in increasingly changing labour markets (Hall, 2004), and, more recently, a concept of employability has developed that integrates both the employees' and the employers' perspectives (Fugate et al., 2021; see also Neroorkar, 2022). However, to our knowledge, no research has focussed on how to measure employability among immigrants or refugees, and how various types of interventions may strengthen their employability.

Our paper addresses this knowledge gap by presenting how we have developed and operationalized a survey-based concept of refugee employability. The analyses exploit longitudinal

data stemming from the survey-based Refugee and Immigrant Progress in Employability (RIPE) tool which we constructed to measure newly arrived refugees' progress in employability over time while participating in a municipally run integration programme. The tool consists of two brief questionnaires that the refugee and their municipal caseworker each had to complete on a quarterly basis when meeting at the municipality's jobcentre. We empirically analyse the extent to which we can distinguish between different employability dimensions, and whether these dimensions correlate with subsequent employment. With inspiration from Arendt et al. (2020), we chose this strategy of correlating with subsequent employment to validate the dimensions in our concept of refugee employability because employability is a difficult concept to measure when not measured in relation to employment, one of its primary effects. We also analyse the extent to which various public integration programmes correlate with progress in employability among the members of the group of refugees investigated in this study – refugees and adult beneficiaries of family reunification who arrived in Denmark during the period 2015-2016. In this period, the main influx of such immigrants was from Syria and Eritrea.

Two research questions guide this paper. RQ1: To what extent do the RIPE measures hold predictive validity for future employment and participation in education? We include education as an outcome because host country education is likely to promote longer-term employment among refugees (Arendt et al., 2016). RQ2: To what extent is there a correlation between the refugees' participation in public integration programmes targeting newly arrived refugees and the refugees' progress in employability? The paper proceeds as follows. We briefly review research on immigrant integration into the labour market and on the concept of employability. Second, we introduce the Danish context, the group of refugees in question and the RIPE tool. Third, we provide an overview of our data and the methods. Fourth, we present our results, and fifth discuss our findings and conclude.

Background

Understanding immigrants' progress toward employment

Research on immigrant employment has identified many factors that affect immigrants' labour market outcomes when measured as success in employment, wages and workplace integration. Based on this knowledge of factors that can affect the likelihood of successful labour market outcomes (i.e. 'employability'), we need research studies such as the present one that can develop and validate tools and methods to measure employability.

Factors that can affect immigrants' employability include education level and work experience from the home country and (especially) from the host country (Ballarino and Panichella, 2017; Kogan et al., 2011). Proficiency in the host country language also raises the chances of finding employment (Dustmann and Fabbri, 2003; Lochmann et al., 2019) and for subsequent social integration in the workplace (Thuesen, 2017). Assistance from social networks also often raises immigrants' job chances (Portes and Shafer, 2007; Ryan, 2011), while good mental and physical health in immigrants is also integral to integration in the labour market. Moreover, motivation, perseverance and willingness to take risks may also promote the likelihood of labour market success (Cohen and Haberfeld, 2007). Conversely, lack of relevant qualifications, language skills, and social networks as well as care obligations and poor health may bar some immigrants from finding a job in a short-term perspective, and, for female immigrants, family obligations and child-bearing can affect employment chances negatively (at least in the short run) (Liebig and Tronstad, 2018; Liversage, 2009b)..

In the field of management research, the development and validation of a general concept of employability has long been a research topic (Fugate et al., 2021; Heijde and Van Der Heijden, 2006; Neroorkar, 2022). Fugate et al. have defined employability as "a multidimensional aggregate of career identity, personal adaptability, and social and human capital" (2004, p.32) that "enhances an individual's likelihood of gaining employment" (2004, p.16). Career identity represents "a more or less coherent representation of often diverse and diffuse career experiences and aspirations" (2004, p. 19) including goals, hopes, and fears. Personal adaptability is a person's capacity to meet the demands of the situation based on *inter alia* a propensity for learning, openness to change and new experiences, internal locus of control and generalized self-efficacy. Finally, social capital is the goodwill inherent in social networks, while the core elements in human capital are education and experience. Fugate et al. underscore that employability has no content without its independent, although inter-related, dimensions, that is, employability as an umbrella concept is caused by and has meaning because of its dimensions (2004, p. 25-26).

The human and social capital components in Fugate et al.'s concept of employability resemble some of the employment-enhancing factors identified by the previously described research on immigrant employment. Likewise, Fugate et al.'s concept of career identity as a sense of direction resonates with Cohen and Haberfelds (2007) focus on motivation and perseverance, while Fugate et al.'s notion of the importance of personal adaptability resonates with research that documents the 'trial-and-error' approach many immigrants have to adopt to try to find a (decent)

job (Liversage, 2009a). Still, even though research on immigrant employment touches upon topics similar to those that are central to research on employability, no attempt has yet been made to draw on insights from both of these bodies of research to explore immigrants' employability.

Despite employability having received scholarly attention for several years, little research has focussed on conceptualizing and measuring employability among vulnerable and potentially less readily employable individuals. One exception is a Danish study by Arendt et al. (2020) that sought to validate a set of survey-based employability measures for people that were long-term unemployed by analysing the ability of such employability measures to predict subsequent employment. For their analyses, Arendt et al. constructed eight indices of employability based on a repeated quarterly questionnaire specifically developed to reflect employability of long-term unemployed persons and found that only two of the eight indices were able to predict subsequent employment. These two indices were the total sum score and an index composed of three items measuring health, daily energy and self-efficacy. Health was the most important among these three items. They also found that three types of active labour market programmes (classroom training and counselling, job-training internships and wage subsidy programmes) had significant and positive associations with changes in all the employability indices. To our knowledge, no similar research exists on measurement of employability among immigrants and refugees and their progress in such employability. Still, we find it highly relevant to link research on immigrants' employment to studies of employability and the measurement of such employability, and in the following we attempt to corroborate this claim empirically.

The Danish context and the RIPE tool

Employment levels among immigrants from non-Western countries have been lower than the levels of ethnic Danes and immigrants from Western countries for many years (Jakobsen et al., 2019). This situation has been a cause for public concern, debate and a long series of political initiatives to reduce this employment gap and improve the integration of immigrants in Denmark. In 1999, the first legislation on integration was launched including a fulltime integration programme for refugees and beneficiaries of family reunification during the first years of their settlement (unless they had obtained employment) (Schultz-Nielsen, 2017). The legislation made the municipalities responsible for the provision of this programme, which mainly consisted of language and civic training as well as labour market interventions. The legislation has undergone many modifications over the years; an important modification took place in 2016, when the Danish Parliament passed new legislation

to promote refugee integration with a sharp job-first orientation. The new provisions obliged all Danish municipalities receiving refugees and adult beneficiaries of family reunification to place these persons in on-the-job training immediately upon arrival in the municipality, that is, no later than one month after arrival (Arendt, 2022). The employment rate among non-Western immigrants has risen substantially over the last 20 years in Denmark (DST, 2020). Nonetheless, recent comparative analyses show that Denmark with its job-first strategy tends to trail behind its Nordic peers Norway and Sweden, possibly because these two countries invest more in upskilling and (supplementary) education as approaches to the integration of non-western immigrants into the labour market (Hernes et al., 2022; Joona and Gupta, 2022)

The war in Syria and a relatively large influx of refugees to Europe, including Denmark, during 2014-2016 provided the impetus for the development of the tool that has been developed and assessed in this paper: the Refugee and Immigrant Progress in Employability (RIPE) measurement tool. The development of the tool was part of a Danish state-funded initiative, Successful Integration (SI), launched in 2016 to raise the level of employment among newly arrived refugees and beneficiaries of family reunification in selected Danish municipalities. In 2016, when the SI project started, the rates of employment among ethnic Danish males and females aged 16-64 years were 77 and 74 percent respectively, while the rates among non-Western first-generation immigrant males and females were 55 and 46 percent, respectively.[3] While all 98 Danish municipalities could apply to take part in the SI initiative, only 17 municipalities were selected to take part in the initiative, on the basis of their low non-Western immigrant employment rates compared to the national average.

Researchers from VIVE – The Danish Center for Social Science Research – developed the RIPE tool by building on the questionnaires used by Arendt et al. (2020)[4] for measuring employability among vulnerable cash benefits recipients. For the RIPE tool, the questionnaires were thoroughly revised and adapted to measure employability among newly arrived refugees and adult beneficiaries of family reunification. The revision of the questionnaires was based on the research on factors influencing immigrants' employment chances described in the previous section, and Fugate et al.'s research on employability (2004; see also Fugate *et al.*, 2021). Moreover, we received input and feedback on different versions of the questionnaires from the municipal case workers and managers working in the labour market integration field in the 17 SI municipalities.

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[3] Numbers calculated based on data from Statistics Denmark (RAS200), see www.statistikbanken.dk/statbank5a/default.asp?w=1920

[4] The employability measure analysed in the Arendt et a. (2020) is further described in Væksthuset (2012).

The core of the tool consisted of two questionnaires, one for the refugee and one for the caseworker, each with 11 items intended to measure key dimensions in refugees' employability. The decision to design one questionnaire for the refugee and one for the caseworker was based on the idea that the former might be best at assessing issues such as personal motivation and obstacles to be overcome in everyday life, while the latter might be better at assessing other issues pertaining to the national or local context, for example, how the refugee's competencies fit local employers' demand for labour. The 22 items we developed to measure employability are described in the data and methods section.

For the refugees in the 17 municipalities in the SI project, completing the RIPE questionnaire was a compulsory part of their participation in the integration programme. The refugees were given an introduction letter that advised them to answer the questions based on how they saw their personal situation. The letter also explained that the caseworker would answer another questionnaire with some similar and some diverging questions and that the refugee's answers and caseworker's answers did not have to be identical. Moreover, the letter to the refugees explained that while the caseworker and other caseworkers in the jobcentre would see the refugee's answers, those answers would be anonymous and treated as strictly confidential in the subsequent evaluation of the SI project. The refugee questionnaire and the introduction letter were available in Danish, English, Arabic, Farsi, Somali and Tigrinya. During an initial meeting between the refugee and the caseworker, the caseworker had to complete a questionnaire on background information about the refugee, primarily arrival date in the municipality, integration programme start date, length of schooling and education, highest educational level acquired, and years and types of occupational experience. The refugee had to complete the RIPE questionnaire during a meeting legally required four times a year in the local jobcentre with the help of their caseworker (Act on Integration (AoI), §20)[5], while the caseworker completed the RIPE caseworker questionnaire and ticked off on a list whether or not the refugee had participated in one or more of twelve predefined activities during the last three months or since the last interview.

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[5] All references to AoI refer to LBK no. 1127, 11/10/2017, see www.retsinformation.dk/eli/lta/2017/1127

Data and methods

Data and measures

The empirical analyses rely on survey data derived from the RIPE tool from the fourth quarter of 2017 through to the second quarter of 2019 in the 17 participating municipalities. The municipalities provided us with civil registration numbers for the refugees who had completed one or more RIPE questionnaires, which allowed us to link the survey data to the individual-level information on the refugees from administrative registers at Statistics Denmark.[6] After data cleaning, we had 480 refugee respondents who had participated in more than one RIPE round, which therefore enables us to analyse RIPE over time. For those 480 respondents with 2-6 rounds of RIPE observations, we had a total of 779 observations measuring progress in employability from one round to the next.[7] Due to only a limited number of missing values on the different RIPE items, we have chosen not to impute missing values. Table A1 in the appendix shows that the number of respondents declines over time; the number of respondents with matching caseworker and refugee data (i.e., a caseworker and a refugee questionnaire completed at the same meeting) declined from 480 in round 2 to 104 in rounds 4-6. We argue that it is most likely that the least employable respondents are those with most observations, given that more employable respondents are likely to obtain a job and leave the integration programme. However, we do not view this potentially skewed composition among our respondents as a major problem since RIPE is primarily intended to measure progress in employability among those who are furthest from obtaining a job.

Below we outline the employability dimensions the two RIPE questionnaires were intended to measure.[8] Table 2 and 3 contain all 22 items (refugee questions abbreviated RfQ, caseworker questions CQ), all of which were rated on a scale from 1 to 7. The items examined seven (presumed) employability-relevant dimensions measuring (1) social competencies, (2) personal competencies, (3) professional qualifications, (4) self-confidence and goal directedness, (5) health, (6) language (Danish) skills and (7) job-search intensity. *Social competencies* focussed on the refugee's self-rated collaborative skills (RfQ1) and ability to understand work instructions from a manager (RfQ2) and the caseworker's assessment of the refugee's collaborative skills (CQ1). These items drew on research showing that social intelligence competencies, that is, abilities to use

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[6] The survey data merged with register data are not publicly available as the use of the latter is restricted to authorized users by Danish law.
[7] Concerning data cleaning process, the appendix details principles and results in table A1.
[8] For a more thorough introduction to the thoughts behind these 7 employability dimension and the items intended to operationalize them, see Thuesen et al. (2017)

emotional intelligence about others in an efficient manner, lead to effective performance at work (Emmerling and Boyatzis, 2012), and that collaborative skills matter to employment chances (Rosholm et al., 2017). *Personal competencies* focussed on the refugee's ability to meet on time (RfQ3) and to stay focussed on getting a job (RfQ4) as well as on the caseworker's assessment of whether problems in the everyday life of the refugee distracted the refugee from focussing on getting a job (CQ2) and on the extent to which the refugee arrived on time for meetings (CQ3). These items were inspired by Fugate et al.'s (2004) notion of career orientation as a sense of direction, while the focus on ability to arrive on time drew on input from municipal caseworkers who stressed this ability as important to many employers.

Professional qualifications were investigated through a question for the caseworker concerning the extent to which the refugee had qualifications relevant for the local labour market (CQ4). This item drew on research showing the importance of human capital for refugees' employment chances (Ballarino and Panichella, 2017; Kogan et al., 2011). *Self-confidence and goal directedness* were examined through three refugee items and two caseworker items. The refugee items focussed on self-assessed belief in finding work within six months (RfQ5), self-rated importance of finding a job within six months (RfQ6), and knowledge concerning what might be a realistic job (RfQ7). The caseworker items focussed on the caseworker's belief in the refugee finding work within six months (CQ5) and assessment of the extent to which the refugee had a notion of what might be a realistic job for the refugee (CQ6). These items on self-confidence and goal directedness drew on research on the importance of self-efficacy (Creed et al., 2001) and motivation and perseverance for refugees' job chances (Cohen and Haberfeld, 2007).

Health in relation to taking care of a job was assessed through a single question for the refugees (RfQ8) and the caseworkers (CQ7), and drew on research showing the importance of good health to various employment outcomes (Currie and Madrian, 1999). To assess *language skills* we included items on ability to speak Danish (RfQ9 and CQ8) and to understand Danish (RfQ10 and CQ9). These dimensions drew on research showing the importance of language skills for refugees' labour market outcomes (Dustmann and Fabbri, 2003; Thuesen, 2017). Finally, we assessed *job-search commitment* by asking the refugee about the extent to which they knew how to improve their chances of getting a job (RfQ11) and by asking the caseworker if the refugee was actively searching for a job (CQ10) and participating in activities initiated by the jobcentre (CQ11). These items were inspired by Fugate et al.'s (2004) concept of personal adaptability as a propensity for learning and

by research showing that an active job search increases an unemployed person's employment chances (Amilon, 2010).

Besides the RIPE score for each item on the scale from 1-7, data included various information about the RIPE respondents. From the Danish DREAM register, we have information on degree of employment (employment degree) on a monthly level and information on participation in education on a weekly level. Employment degree is a continuous variable ranging from 0 to 1, where 1 corresponds to fulltime work through the entire month (160.33 working hours, based on a 12-monthly average of the standard Danish annual working hours =1924 hours). From the survey we have information on the refugee's participation in one or more of the twelve jobcentre activities since the last interview (see the section 'characteristics concerning interventions' below). We also have register-based information from the DREAM register on the refugees' participation in different types of intervention. Moreover, we have information on various background characteristics of the RIPE respondents. From the survey, we have information on foreign education, foreign work experience, number of months of residence in Denmark, and country of origin. From the Danish population and family register, we have information on age, gender, marital status (married/ not married), and number of children (0-17 years). Finally, we have information on the date of the RIPE observation and information on which caseworker completed the questionnaire (each caseworker had an identification number).

Analytical strategy

We carry out the analyses in three steps. First, we use common factor analysis with orthogonal rotation to group the 22 RIPE measures into fewer RIPE indices (Fabrigar and Wegener, 2012; Watkins, 2022). Given the absence of previous research concerning dimensions in a refugee-relevant concept of employability, we use exploratory factor analysis on all 22 refugee and caseworker items to investigate the likelihood and composition of such dimensions. We then construct a number of employability indices ('RIPE indices') as sum scales ranging from 1-7, building on the results from this analysis concerning employability dimensions.

Second, we use separate regression models to examine whether these RIPE indices resulting from the factor analysis hold predictive validity for future employment and participation in education respectively (RQ1). In these analyses we include all RIPE indices at the same time to analyse which of these indices have the strongest correlation with employment when controlling for other indices. Moreover, given Fugate et al.'s theory of employability as a "multidimensional

aggregate" (2004, p. 26), that is, as 'a sum of its parts', we also regress employment on each index one at a time to analyse whether each dimension separately correlates with employment or education.

The timeline concerning the measurement used in the analysis is shown in Figure 1.

Figure 1. The timing of measurements in the analysis
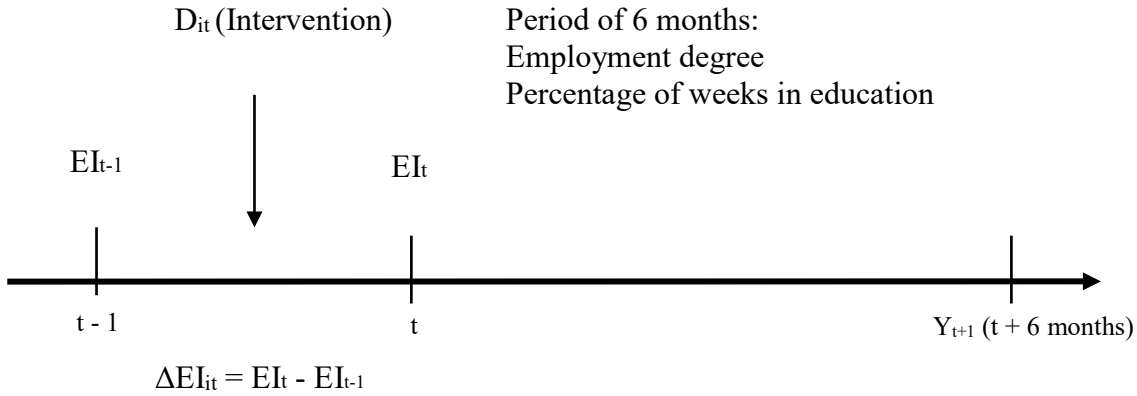
Note: EI = Employability Index

As dependent variables, we use average employment degree over a 6-month period after the RIPE measurement and percentage of weeks in education during the same 6 months (Y_{t+1}). Employment/participation in education is regressed on the different employability indices measured at time t (EI_t). We control for lagged employability (EI_{t-1}) so that the associations with employment/participation in education are driven by *recent changes* in employability. We use linear regression models and present results from both ordinary least squares estimations (OLS) and individual fixed effects estimations (FE), where the FE control for individual-specific attributes (observed and unobserved) that do not vary across time, see equation (1) and (2) respectively.

$$(1) \quad Y_{it+1} = \alpha_1 + \beta_{11}EI_{it} + \beta_{12}EI_{it-1} + \beta_{13}X_{it} + \beta_{14}YEAR_{it} + \beta_{15}S_{it} + e_{1it}$$

$$(2) \quad Y_{it+1} = \alpha_2 + \beta_{21}EI_{it} + \beta_{22}EI_{it-1} + \beta_{23}YEAR_{it} + \beta_{24}S_{it} + \delta_{2i} + \varepsilon_{2it}$$

Since the same persons appear in our data several times, that is, since all persons in our regressions participate in at least two RIPE rounds, we use robust standard errors clustered on individuals. Moreover, we also include caseworker fixed effects to control for individual caseworker differences

in assessment style (S$_{it}$) and year fixed effect to control for the year of RIPE measurement (YEAR$_{it}$). In the OLS estimations we include control variables for individual-level age, gender, marital status, number of children, country of origin, foreign education, foreign work experience, months of residence in Denmark and days between the two RIPE measurements used in calculation of progression (X$_{it}$). The FE include individual fixed effects (δ_i).

Third, in another set of regression models, we examine if there is a correlation between public Danish integration programmes targeting newly arrived refugees and their progress in employability (RQ2). Here the changes in the RIPE indices (ΔEI_{it}) from one round to the next serve as dependent variables, while, for independent variables, we use survey information on the refugee's participation in one or more of the twelve jobcentre activities since their last interview (D$_{it}$) (see the section 'characteristics concerning interventions' below). We exploit the data from the DREAM register on the refugees' participation in different ALMP interventions for a robustness check. We also use linear regression models and present results from both OLS and individual FE, see equation (3) and (4) respectively, and use robust standard errors clustered on individuals.

(3) $\Delta EI_{it} \ = \ \alpha_3 + \beta_{31}D_{it} + \ \beta_{32}EI_{it-1} + \ \beta_{33}X_{it} + \ \beta_{34}YEAR_{it} + \ \ \beta_{35}S_{it} + \ e_{3it}$

(4) $\Delta EI_{it} \ = \ \alpha_4 + \beta_{41}D_{it} + \ \beta_{42}EI_{it-1} + \ \beta_{43}YEAR_{it} + \ \ \beta_{44}S_{it} + \delta_{4i} \ + \ \varepsilon_{4it}$

Results

Firstly, this section outlines key characteristics concerning the respondents, scores on simple RIPE items, and their participation in different integration and labour market programmes. We then report the findings from a factor analysis concerning employability dimensions and findings from the regressions concerning correlations between employability indeces and employment and concerning correlations between the integration programmes and progress in employability.

Characteristics concerning respondents

Table 1 shows background characteristics of the refugee respondents as well as some figures on their employment and education outcomes in Denmark. Panel A shows background characteristics of the 480 refugee respondents with at least two RIPE registrations. We record time-varying variables at the time of the second RIPE registration. Note that these statistics are not representative

of all the refugees arriving in the 17 municipalities during period 2014-2016, when most of our respondents arrived.

Table 1. Respondent characteristics and employment/education after RIPE

Panel A. RIPE respondent characteristics	Mean (SD)
Women	0.54
Age	
18-29 years old	0.31
30-40 years old	0.36
41-65 years old	0.29
Age (years)	35.6 (9.6)
Married	0.48
Children	
Children (0-17 years old)	0.59
0-6-year-old children	0.38
7-12-year-old children	0.30
13-17-year-old children	0.23
Country of origin	
Syria	0.66
Eritrea	0.15
Other countries	0.19
Foreign work experience	
Foreign work experience	0.50
No foreign work experience	0.35
No information	0.14
Foreign work experience (years)*	10.2 (8.1)
Foreign education	
Foreign education: Primary or lower secondary education	0.37
Foreign education: Upper secondary or further education	0.23
No foreign education	0.179
No information	0.223
Foreign education (number of years)**	9.7 (3.5)
Duration of residence in Denmark (months)	28.9 (12.8)
Time between 1st and 2nd round RIPE measurements (days)	149.9 (97.1)
N (respondents)	480
Panel B. Employment degree and education 6 months after RIPE	
Employment degree ***	0.10 (0.21)
Education***	0.05 (0.17)
N (observations)	779

Notes: Only respondents with at least two matching citizen and caseworker registrations. Age, marital status and number of children vary over time. In this table we measure these variables at the time of the second RIPE registration.
*Individuals with (information on) foreign work experience
**Individuals with (information on) foreign education
***Average for the 6 months after the measurement of RIPE

Refugees who quickly found a job are less likely to have two RIPE measurements, which explains the slight overweight of women among the respondents, since male refugees typically find their first job faster than female refugees (Liebig and Tronstad, 2018).

On average the respondents are 36 years old, almost 50 percent are married, and almost 60 percent have children (0-17 years old). Most of the respondents, 66 percent, originate from Syria, with Eritrea coming in second at 15 percent. The respondents had spent an average of 29 months in Denmark, implying that most respondents had arrived in Denmark during the interval 2014-2016. Concerning foreign education, most of respondents are not highly educated. Fifty percent have some work experience, and those 50 percent have an average of 10 years of experience. Finally, table 1 shows an average of 149 days between the 1st and the 2nd round of RIPE registrations.

Panel B shows the extent to which the respondents have been employed or participated in education during a 6-month period after each RIPE measurement. On average our respondents have an employment degree of 10 percent and have participated in education 5 percent of the weeks during each 6-month period following the 779 RIPE measurements. Hence, employment is more common than participation in education among our respondents following meetings at the jobcentre. This finding is in line with the primary target of the job-first approach that dominates current Danish integration policies (Arendt, 2022).

Employability

Table 2 and 3 summarize average first RIPE scores for refugee and caseworker observations, respectively, based on all 975 observations with 1st observation data, as well as the mean RIPE change between all rounds.

Table 2. Refugee RIPE mean scores (1ˢᵗ round) and mean change (across rounds).

Label	Question	Mean RIPE score (1ˢᵗ round)*	Mean RIPE change*[1]
RfQ1: Collaborative skills	How good are you at completing tasks together with others?	5.81 (1.53)	0.10 (1.63)
RfQ2: Understanding instructions	How good are you at understanding and carrying out an instruction given by a manager?	5.49 (1.62)	0.14 (1.63)
RfQ3: Punctuality - arriving on time	How good are you at meeting on time?	6.39 (1.22)	0.00 (1.24)
RfQ4: Keeping job focus	How easy is it for you to be focused on getting a job?	4.58 (2.06)	0.22 (1.99)
RfQ5: Belief in job within 6 months	Do you see yourself in a job within the next 6 months?	4.10 (2.09)	0.21 (1.96)
RfQ6: Job Importance 6 months	How important is it to you that you find a job within the next 6 months?	5.75 (1.90)	0.05 (1.76)
RfQ7: Job realism	Do you know what kind of work you will be able to get, realistically speaking?	4.51 (2.07)	0.24 (2.05)
RfQ8: Health in relation to job	How good is your health in terms of being able to manage a job?	5.06 (2.06)	0.12 (1.51)
RfQ9: Speaking Danish	How good are you at speaking Danish?	3.40 (1.39)	0.30 (1.11)
RfQ10: Understanding Danish	How good are you at understanding Danish?	4.02 (1.49)	0.33 (1.26)
RfQ11: How to improve job chances	Do you know what to do to improve your chances of getting a job?	4.66 (2.10)	0.22 (2.01)
N (observations)		975	779

Note: *Scale 1-7. [1] Mean RIPE change from one round to the next for rounds 1-7.

For refugees, table 2 shows that collaborative skills, ability to understand instructions and to arrive on time, a perception that finding a job within six months is important and self-rated health are all highly rated (>5) in the first observation data. The ability to keep job focus, the belief in finding a job within six months, knowledge on a realistic job and on how to improve one's job chances are rated lower (4-5), while self-rated language skills are rated lowest (3-4).

Table 3 shows that to a large extent the caseworker assessment means from the first set of RIPE measurements mirror the refugees' self-assessments. The caseworkers also assess the refugees' collaborative skills, ability to arrive on time, health in relation to fulfilling a job, and active participation at a relatively high level (5-6). They rate everyday life problems as a job barrier and job realism at a lower level (4-5) and the same applies to qualifications in relation to the local labour market, belief in the refugee finding a job within six months and active job search (3-4). Like the refugees, the caseworkers also rate language skills in the low end of the distribution of the 1ˢᵗ RIPE measurements (3-4).

Table 3. Caseworker RIPE mean scores (1st round) and mean change (across rounds).

Label	Question	Mean RIPE score (1st round)*	Mean RIPE change*[1]
CQ1: Collaborative skills	How would you rate the citizens' ability to collaborate with others?	5.38 (1.50)	0.18 (1.34)
CQ2: Everyday problems a barrier	To what extent do problems in the everyday life of the citizen represent obstacles to her/ his ability to focus on getting a job?	4.79 (1.97)	0.18 (1.64)
CQ3: Punctuality - arriving on time	How good is the citizen at meeting on time?	5.47 (1.60)	0.07 (1.423)
CQ4: Relevant qualifications	To what extent does the citizen possess professional qualifications relevant in relation to the local labour market?	3.75 (1.68)	0.34 (1.29)
CQ5: Belief in job within six months	To what extent do you see the citizen in a job within the next 6 months?	3.92 (1.94)	0.30 (1.48)
CQ6: Job realism	To what extent does the citizen hold an idea of which job is realistic for her/ him to get?	4.38 (1.82)	0.33 (1.65)
CQ7: Health in relation to job	How good is the citizen's health in terms of taking care of a job?	5.47 (1.75)	0.10 (1.16)
CQ8: Speaking Danish	How good is the citizen at speaking Danish?	3.31 (1.44)	0.31 (0.94)
CQ9: Understanding Danish	How good is the citizen at understanding Danish?	3.73 (1.45)	0.32 (0.99)
CQ10: Active Job Search	To what extent is the citizen active and committed in their job search?	3.34 (2.02)	0.32 (1.801)
CQ11: Active participation	To what extent does the citizen participate in the activities initiated by the jobcentre?	5.51 (1.58)	0.10 (1.34)
N (observations)		975	779

Note: *Scale 1-7. [1] Mean RIPE-change from one round to the next for rounds 1-7.

In terms of progress, table 2 and 3 show that for all RIPE measures, the mean RIPE changes are positive, that is, on average the respondents experience progress on all dimensions of employability measured by RIPE. Progress is especially large in terms of language skills (RfQ9, 10; CQ8, 9) and in terms of the refugees' self-rated ability to keep focussed on getting a job (RfQ4), belief in getting a job within six months (RfQ5), job realism (RfQ7), and knowledge on how to improve job chances (RfQ11). Similarly, from the caseworkers' perspective, the largest progress is in relation to relevant qualifications (CQ4), belief in a job within 6 months (CQ4), job realism (CQ6) and active job search (CQ10). Overall, language skills, professional qualifications, self-confidence and goal

directedness, and job search commitment are the employability dimensions that make the largest progress.

Characteristics concerning programmes

Table 4, panel A contains a numbered list of the programmes that the unemployed migrants could participate in at the jobcentre and language schools between two RIPE observations. We developed the list based on Danish legislation in the integration field (especially AoI, §§21-24) and in consultation with managers and caseworkers from the 17 SI jobcentres.

Table 4. Share of refugees who have participated in different types of active labour market programmes and language training (specific and aggregate categories).

A	Specific programmes	Share
1	On-the-job training at a private enterprise	0.44
2	On-the-job-training at a public enterprise	0.23
3	Language training	0.80
4	Job search assistance	0.09
5	Subsidized employment	0.05
6	Mentor	0.09
7	Upgrading of occupational skills	0.02
8	Upgrading of basic skills	0.06
9	General course on the Danish labour market	0.08
10	Training on coping with everyday life challenges	0.03
11	Elucidation/ treatment of/ assistance for coping with health issues	0.09
12	Other	0.10
B	**Aggregate labour market programme categories***	
I	Job-oriented intervention (type 1,2,4-6)	0.72
II	Upgrading of skills (type 7-9)	0.15
III	Social and health-oriented interventions (type 10,11)	0.11
	N (observations)	779

Note: *Please note that '3. language training' is not included in any of the aggregate categories since it is not regarded as a labour market programme in the narrow sense of Danish legislation.

According to Danish integration legislation, job-oriented programmes as well as language training are the primary means to promote labour market-oriented integration of newly arrived refugees and beneficiaries of family reunification who have been granted asylum. Several interventions in table 4 are general ALMPs, that is, general programmes also used for the native population (see also Butschek and Walter, 2014; Thuesen et al., 2020). Moreover, our list includes language training (No 3) since, in Denmark, such training is an integral element of the legally instituted overall

integration programme that all newly arrived unemployed refugees must attend (AoI, §21). The list also includes two programmes sometimes deployed in the jobcentres: training on coping with everyday life challenges (No 10) and elucidation/ treatment of/ assistance for coping with health issues (No 11). Other (No 12) can be any other programme not fitting into the first eleven categories.

For analytical purposes, we have constructed three aggregate categories (cat.) (see panel B in table 4) grouping together programmes according to whether they are of an immediately job-oriented type, focus on upgrading of skills, or have a social and health-oriented focus. Hence, cat. I., job-oriented intervention, includes on-the-job training, subsidized job, job search assistance, and mentor. A total of 72 percent of respondents had participated in this category of programme. Cat. II includes upgrading of skills and the general course on the Danish labour market. Cat. III covers programmes promoting enhanced coping with everyday life challenges and with health issues. Only 15 percent and 11 percent had participated in cat. II and III programmes, respectively. In terms of the register-based information on participation in AMPLs (see table A8), we also find that participation in on-the-job training at a private or public enterprise is the dominant form of intervention. Moreover, these register data also show a high level of participation in 'formal education and language training', similar to the high level of participation reflected in the survey category 'language training' in table 4.

Factor analysis and employability indices

We have conducted an explorative principal factor analysis with an orthogonal rotation based on the full set of 22 caseworker and refugee items to investigate the extent to which the items measure the same underlying employability dimensions. The scree plot in the appendix (figure A1) shows the results from the unrotated factor solution; three factors have eigenvalues above 1 and two just below 1. The scree plot also shows that the eigenvalues flatten from the sixth factor and onwards; hence, using the 'elbow criterion' we might want to retain five factors (Fabrigar and Wegener, 2012; Watkins, 2022). Parallel analysis (PA, see table A2) as well as a minimum average partial analysis (MAP, see table A3) support our decision to retain 5 factors (Goretzko et al., 2021). We rotate our factor solution using orthogonal varimax rotation; in the resulting table A4 we have marked items with loadings above 0.45 on each of the 5 factors with green.[9] We construct 5 indices

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[9] As a robustness check, we have rotated our factor solution using an oblique rotation (promax). The results are essentially the same as the results from the varimax rotation (results available from the authors upon request).

corresponding to these 5 factors based on the three to four items loading above 0.45 on each of these factors, that is, sum scales ranging from 1-7 that average the score of each index over these items.

Figure 2. Employability indices based on factor analysis
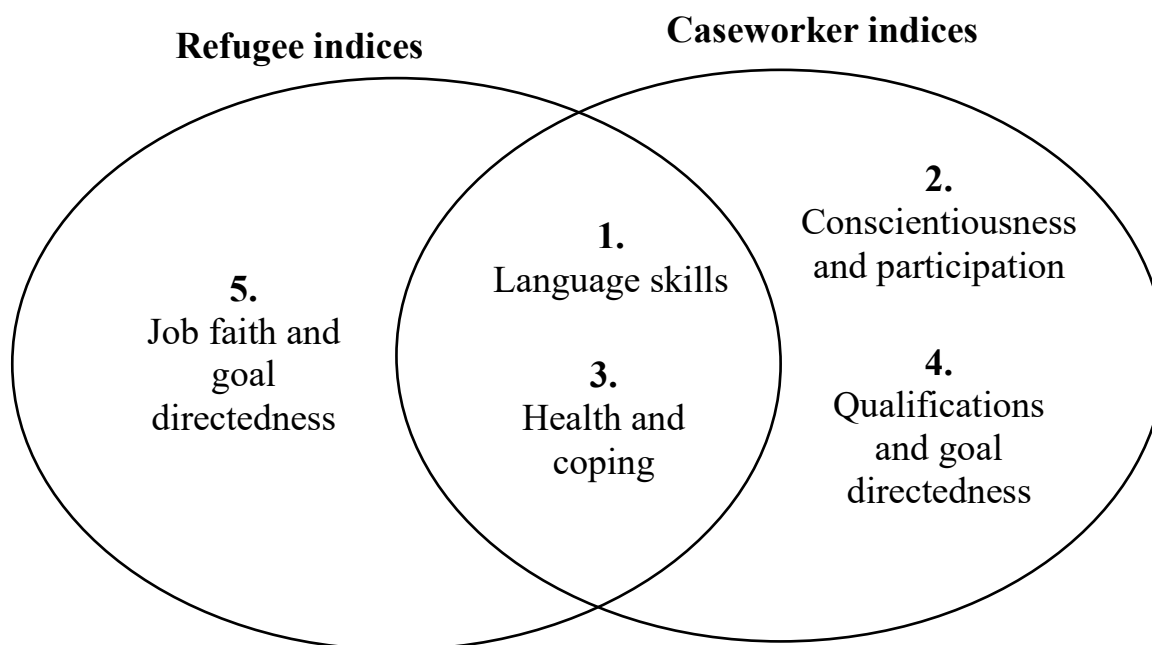
Figure 2 illustrates the results from the factor analysis naming the five indices we have constructed based on this analysis and the ranking (through numbering) of the factors according to principal factor solution. Figure 2 illustrates that items stemming from both the caseworker and the refugee questionnaire define indices 1 and 3, while indices 2 and 4 draw solely on caseworker items and index 5 draws solely on refugee items.

We can briefly characterize the five indices as follows. Index 1: Language skills – builds on all four items from the refugee and caseworker questionnaires intended to measure ability to understand and speak Danish. Index 2: Conscientiousness and participation – builds on three items from the caseworker questionnaire concerning the caseworkers' evaluation of the refugees' collaborative skills, active participation in jobcentre activities and ability to arrive on time at the jobcentre or at a workplace. Index 3: Health and coping – like index 1, this index builds on both a caseworker and a refugee item concerning health in relation to doing a job, while also including caseworker assessment on whether the refugee has problems in everyday life that are a barrier to

finding a job. Index 4: Qualifications and goal directedness – builds on four caseworker items assessing whether the refugee a) possesses relevant qualifications, b) will be employed within the next six months, c) has a realistic idea of a potential job, and d) is actively searching for a job. Index 5: Job faith and goal directedness – draws on four refugee items concerning whether the refugee a) regards finding a job within six months important, b) sees themself in a job within six months, c) possesses knowledge concerning a realistic job, and d) is capable of keeping focus on obtaining a job.

Table 5. Mean index scores, 1st round, and mean change between rounds

	Mean index score measured at the first RIPE round	Mean change in RIPE score between rounds (progression)
RIPE indices		
Language skills	3.61	0.31
	(1.29)	(0.81)
Conscientiousness and participation	5.45	0.11
	(1.39)	(1.09)
Health and coping	5.10	0.14
	(1.69)	(1.07)
Qualifications and goal directedness	3.85	0.33
	(1.53)	(1.11)
Job faith and goal directedness	4.73	0.18
	(1.60)	(1.29)
N	975	779

Table 5 shows that the mean index scores from the first round are lowest for the language skills and the qualifications and goal directness index and highest for the conscientiousness and participation index. Conversely, progress in the mean scores between rounds is lowest for conscientiousness and participation and highest for the language skills and qualifications and goal directedness indices.

The predictive validity of the employability indices on employment and education

Table 6 contains the results of OLS and FE regression analyses where change in employment degree and participation in education are regressed on employability. We focus on the association that is potentially driven by recent changes in employability as we control for lagged employability (i.e., the level of the employability indices at the previous measurement, EI_{t-1}). Our five employability indices are all entered in the regression *at the same time*.

Prior to commenting on table 6, we wish to point out that we have also run five regression analyses in which we have entered the five indices one at a time in both OLS and FE analyses with employment and education as outcomes (see tables A6-A9). The FE analysis concerning employment shows that the health and coping, the qualifications and goal directedness and the job faith and goal directedness indices have significant and positive coefficients for subsequent employment degree (see table A7).

Table 6. Employment degree and participation in education regressed on progress in employability indices. OLS and fixed effects regressions.

	Employment degree, (Average over 6 months)		The percentage of weeks in education	
	OLS	FE	OLS	FE
Indices:				
(1) Language skills	-0.021*	-0.033*	0.031***	0.014
(2) Conscientiousness and participation	0.007	0.009	0.011*	0.008
(3) Health and coping	0.003	0.008	0.007	-0.008
(4) Qualifications and goal directedness	0.025***	0.023*	0.004	0.005
(5) Job faith and goal directedness	0.014**	0.002	-0.020***	-0.004
N	739	739	739	739
R^2	0.396	0.410	0.286	0.164

Table A5 in the appendix contains results from the full model, including standard errors.
* p<0,10, ** p<0,05, *** p<0,01
Please note that N=739 is smaller than N=779 in table 5 because of missing values on RIPE items.

Concerning employment, table 6 shows, in column 1 and 2, that the association between progress in the language skills index (1) and employment degree is significant and negative; something that could be due to some refugees focussing more on learning Danish and therefore less on finding a job. Other research has shown that in a short-term perspective, language courses have no effect or even a negative impact on refugee employment, but on the mid-term range, language courses have a positive effect on employment (Kanas and Kosyakova, 2023; Rotger, 2011). Table 6 also contains significant and positive coefficients for both FE and OLS regressions on the caseworker index qualifications and goal directedness and employment, which contains items such as the caseworker's evaluation of whether the refugee possesses qualifications relevant for the local labour market, and whether the caseworker sees the refugee in a job within the next six months. We also find a significant and positive coefficient on the refugee index job faith and goal directedness, but only for the OLS regression—that is, this indicates that the following matter positively: a refugee's own notion that a job is important, belief in finding a job, clarity of perception of what a realistic

job looks like, and ability to focus on finding a job. The two other indices, conscientiousness and participation (2) and health and coping (3), do not correlate significantly with employment.

Concerning education, column 3 and 4 in table 6 show the association between progress in the RIPE indices and participation in education. These columns show that the association between the language skills index (1) and participation in education is significant and positive for the OLS coefficient but not for the FE coefficient. As mentioned above, we have also run regressions where we entered the indices one at a time in relation to education as an outcome (tables A8-9). When doing so, we only find that the language skills index has a significant and positive coefficient in a FE regression with participation in education as an outcome. In table 6 above, we also find a marginally significant and positive OLS coefficient for conscientiousness and participation (2) in relation to participation in education, but no significant coefficient in the FE analysis. Conversely, the refugee index job faith and goal directedness (5) relates negatively to participation in education in the OLS analysis. The remaining indices, health and coping (3) and qualifications and goal directedness (4), are insignificantly correlated with participation in education.

Correlations between interventions and employability

We use the five employability indices as dependent variables in FE and OLS regression analyses where aggregate jobcentre interventions (cat. I, II, III) as well as language training (intervention no. 3) serve as the independent variables. We include the health and coping index in the analysis despite our previous analysis not finding any correlation between this index and employment or education, since previous research among vulnerable cash-benefits recipients found health to be a strong predictor of subsequent employment (Arendt et al., 2020). Table 7 shows the parameter estimates and significance levels pertaining to our independent variables (see table A10 and A11 for the full models).

Table 7. Changes in employability indices (Δ) regressed on interventions. OLS and FE regressions.

	(1) ΔLanguage Skills		(2) ΔConscientiousness and Participation		(3) ΔHealth and Coping		(4) ΔQualifications and Goal Directedness		(5) ΔJob Faith and Goal Directedness	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Interventions #										
Job oriented	0.170**	-0.015	0.289***	0.240*	0.322***	0.244*	0.428***	0.330**	0.565***	0.180
	(0.066)	(0.092)	(0.085)	(0.131)	(0.099)	(0.142)	(0.098)	(0.132)	(0.115)	(0.157)
Upgrading skills	0.081	-0.069	0.105	-0.151	0.234**	-0.067	0.240**	0.015	0.124	-0.054
	(0.086)	(0.149)	(0.103)	(0.189)	(0.118)	(0.157)	(0.116)	(0.171)	(0.137)	(0.176)
Social and health oriented	-0.160	-0.542***	-0.356*	-0.077	-0.672***	-0.714***	-0.352*	-0.418*	-0.131	-0.258
	(0.155)	(0.156)	(0.208)	(0.316)	(0.178)	(0.242)	(0.204)	(0.236)	(0.227)	(0.227)
Language training	0.097	0.152	-0.061	-0.331	-0.074	-0.284	-0.072	-0.239	0.036	0.035
	(0.083)	(0.160)	(0.117)	(0.226)	(0.111)	(0.177)	(0.112)	(0.217)	(0.134)	(0.211)
Constant	1.015***	3.387***	2.404***	6.316***	1.608***	5.930***	1.522***	4.565***	2.546***	6.119***
	(0.313)	(0.337)	(0.489)	(0.545)	(0.418)	(0.450)	(0.460)	(0.286)	(0.518)	(0.406)
N	767	767	766	766	769	769	772	772	773	773
R^2	0.303	0.575	0.344	0.666	0.294	0.649	0.320	0.676	0.346	0.690

Δ indicates: the change in score from one round of RIPE measurement to the next.
Table A10 and A.11 in the appendix contains results from the full model, including standard errors.
* p<0,10, ** p<0,05, *** p<0,01
Please note that N varies because of missing values on different RIPE items on which the indices are based.

Concerning job-oriented interventions (Cat. I), we find a significant positive correlation with all our employability indices, although the coefficient is only highly significant for the FE regressions in relation to the qualifications and goal directedness index (4) and marginally significant in relation to the conscientiousness and participation (2) and health and coping (3) indices. Hence, participation in job-oriented programmes correlates highly with progress in terms of different aspects of employability according to both the caseworkers and the refugees themselves. The FE regression where we include all 12 interventions shows the same, in the sense that job-training at a private workplace correlates positively with subsequent progress on the qualifications and goal directedness index (4), but negatively with language skills progress (1). On the other hand, subsidized employment correlates positively with language skills progress (1) and progress in relation to conscientiousness and participation (2) (see table A13). Analyses based on register data that we use for robustness checks point in the same direction in the sense that OLS regressions find that respondents who have participated in on-the-job training in a private enterprise (the most common type of on-the-job training) have positive coefficients for indices 2, 4, 5 and that respondents who have participated in subsidized employment have positive coefficients for index 2 (see table A14). However, when we look at our FE regressions using the same register data, we only find a significant and positive coefficient on subsidized employment in relation to consciousness and participation (2), but insignificant, although positive, coefficients on the private/public job-training interventions in relation to index 4 and 5 (see table A15). This could be due to a lack of statistical power, that is, fewer observations in each of the public/private job-training categories than when we run the analyses using the aggregate category 'I. job-oriented interventions.'

Concerning upgrading of skills interventions (cat. II), we find almost no significant correlations with our employment indices apart from weakly significant OLS correlations with the health and coping index (3) and with the qualifications and goal directedness index (4). However, looking at individual intervention categories in table A13, in our FE analyses we find significant and positive correlations between upgrading of occupational skills and qualifications and goal directedness (4) and job faith and goal directedness (5). Hence, upgrading of occupational skills, that is, possession of relevant qualifications and goal directedness, appears to strengthen a refugees' employability in the eyes of both the caseworkers and the refugees themselves. We also find a positive correlation between upgrading of basic skills and health and coping (4).

Concerning the social and health-oriented interventions (cat. III), table 7 shows significant and negative correlation in relation to three of our indices, in particular highly significant negative FE and

OLS coefficients for the outcome health and coping (3). Moreover, we find a highly significantly negative FE coefficient for the outcome language skills (1) and a weakly significant negative FE coefficient for qualifications and goal directedness (4) as well as a weakly significant negative OLS coefficient for conscientiousness and participation (2). A priori, we would expect a positive correlation between social and health-oriented interventions in the jobcentre and refugee health and health coping. One possible explanation for the negative results might be reverse causality, that is, that poor or deteriorating health incites caseworkers to set in motion a social and health-oriented intervention that fails to lead to any significant positive progress in the refugees' health situation. We should remember that the intervention 'elucidation/ treatment of/ assistance for coping with health issue' might entail, as the name indicates, primarily an *elucidation* of health problems that were potentially hidden previously, for example, post-traumatic stress disorder (PTSD). Hence, once these problems become manifest, both the refugee and the caseworker may focus less on otherwise primary goals of the integration programme, that is, learning the Danish language and finding a job, and more on recovery. That might help explain why we also see negative FE coefficients on the language skills (1) and the qualifications and conscientiousness indices (4).

Finally, concerning language training (3), slightly surprisingly, we find only insignificant, although still positive, OLS and FE coefficients in relation to the index measuring progress in language skills (1). Our OLS and FE regressions using DREAM data (table A14 and A15) point in different directions on this issue, since the OLS regression also finds a positive but insignificant coefficient on formal education and language training in relation to progress in language skills, while the FE regression finds a negative but insignificant coefficient. However, since the register data category 'Formal education and language training' is itself an aggregate intervention category measuring not only language training but also other types of educational activities, this intervention category may contain too much 'noise' to serve as a good indicator of language training. That could explain the diverging results in comparing the (insignificant) OLS and FE results in relation to this category from the registers.

Discussion

The purpose of this paper was to analyse the link between the dimensions in a refugee-relevant concept of employability and subsequent employment and participation in education (RQ1) as well as the link between public Danish integration interventions targeting newly arrived refugees, mainly

refugees and beneficiaries of family reunification from Syria and Eritrea, and their potential progress in employability (RQ2). Below we discuss our findings relating to each of these questions.

The link between employability, employment and education

Concerning RQ1, exploratory factor analysis on the data produced by the refugees and the caseworkers using the RIPE tool shows that most of the 22 items from the two questionnaires load on one of five factors. We have chosen to term these five factors (1) *language skills,* (2) *conscientiousness and participation,* (3) *health and coping,* (4) *qualifications and goal directedness,* and (5) *job faith and goal directedness*. Given our expectations concerning the seven measurable dimensions in our refugee-relevant concept of employability, our results contain both partial confirmations of these expectations and some surprises. Taking the partial confirmations first, the factor analysis clearly identifies *language skills* as a distinguishable employability dimension; all four refugee and caseworker items (concerning understanding and speaking Danish) load highly onto this factor. Research shows that level of host country language skills matters for refugees' labour market integration (Dustmann and Fabbri, 2003; Lochmann et al., 2019). However, when we regress employment degree on the language skills index based on the results from the factor analysis, we find a negative correlation, in both OLS and FE regressions, between language skills and short-term employment. Still, other research has shown that interventions seeking to enhance refugees' language skills to promote their employment chances only pay off in the medium or long term (Rotger, 2011). Therefore, language skills may still be a relevant dimension in a refugee concept of employability, despite this negative result concerning short-term employment. Moreover, our regression analysis finds a positive (OLS) correlation between language skills and participation in education; a likely interpretation is that refugees focussed on making progress in relation to learning a new host country language may also focus on other activities likely to strengthen their 'human capital', such as host country education. However, this result is less statistically certain given that we only find a significant coefficient in our OLS analysis.

The factor analysis also finds a clear *health and coping* dimension. As two of the three items included in this dimension relate directly to health, this finding might appear as a partial confirmation of our expectation that health matters for refugees' ability to fulfil a job. This expectation drew on research on refugees' health and labour market performance (Børsch et al., 2018; Liebig and Tronstad, 2018) and on a study that identified a strong correlation between vulnerable cash benefits recipients' health as a dimension in their employability and their

employment chances (Arendt et al., 2020). However, when controlling for the other four employability indices, the regression analysis finds no correlations between our health index and employment degree or participation in education. Given previous research, we still find it highly likely that good physical and mental health matters positively for refugees' employment chances, but our results, based on data from a relatively limited sample of refugees, indicate that other employability factors matter more for employment than health.

Our factor analysis also identifies a factor that we have termed *conscientiousness and participation*. Three items from the caseworker survey, collaborative skills, ability to arrive on time on time and active participation, loaded onto this factor; each of these items were added to the survey to measure, respectively, social competencies, personal competencies and job search commitment. Hence, this factor brings together some items that we initially thought of as belonging to separate employability dimensions, although social and personal competencies could both be seen as contributing to what Fugate et al. (2004) term 'personal adaptability'. Our regression analysis finds no correlation between the corresponding index and employment but a weak correlation with participation in education. Hence, *participation* and *learning* might be key words here, as we find that an ability to participate in jobcentre activities (and to collaborate and arrive on time) correlates with an ability to participate in education. Although such participation and learning might not result in short-term employment, we still find that consciousness and participation is a relevant dimension in a refugee concept of employability in so far as host country education, in a longer-term perspective, is likely to promote employment (Arendt et al., 2016).

The final two indices – the caseworker-based index on *qualifications and goal directedness* and the refugee-based index on *job faith and goal directedness* – both include closely related items focussing on possession of qualifications, knowledge about the labour market and employment-related self-confidence. To a relatively high extent, these two indices correspond to our expectations that a concept of employability should include notions of career identity (Fugate et al., 2004), motivation and perseverance (Cohen and Haberfeld, 2007), and possession of human capital. Moreover, for these two indices, our regression analyses find significant and positive correlations with employment degree, especially the qualifications and goal directedness index where both the OLS and the FE analyses find a significant and positive coefficient. For the index job faith and goal directedness, we find a significant and positive OLS coefficient in relation to employment and a significant but negative OLS coefficient in relation to participation in education. This could indicate

that if a refugee is focussed on gaining employment, they will be less focussed on obtaining more education; however, this result is statistically more uncertain.

The link between interventions and employability

Concerning RQ2, we find a significant and positive correlation between job-oriented interventions (cat. I) and progress in relation to three of our indices, namely consciousness and participation, health and coping, and in particular qualifications and goal directedness. This is a main result from our analyses, and in so far as the index qualifications and goal directedness is concerned, our results point in the same direction as research indicating that ALMPs, especially wage-subsidized jobs (Butschek and Walter, 2014) and on-the-job-training (Arendt, 2022), matter positively for unemployed refugees' employment chances. Moreover, the positive coefficient on the correlation between job-oriented interventions and conscientiousness and participation could be interpreted as a motivation effect, that is, that unemployed refugees having participated in a job-training internship in a private or public workplace become more motivated for participating in the jobcentre activities in general because such activities make more sense after experiencing what is required in a concrete workplace.

We also note that our findings indicate that upgrading of skills (cat. II), a much less used type of intervention for this group of unemployed refugees, has only weakly positive (OLS) coefficients for health and coping and qualifications and goal directedness. However, looking at the 12 individual interventions, we find positive FE correlations between upgrading of occupational skills and both the qualifications and goal directedness and the job faith and goal directedness indices. We should note here that German researchers have found that different types of short-term labour market training targeting refugees have mixed employment results—programmes enhancing occupation-specific knowledge being the most effective in contrast to programmes providing more general skills (Thomsen et al., 2013). These findings by Thomsen et al. support our findings that upgrading occupational skills enhance employability in the eyes of both caseworkers and refugees.

Surprisingly, in both the OLS and the FE analyses, we find insignificant but still positive coefficients pertaining to the index language training and progress in language skills, while we find a positive OLS coefficient on job-oriented interventions and language skills. Almost 80 percent of our participants receive language training from one RIPE round to the next. One explanation for the positive correlation between job-oriented interventions and language skills might point to the respondent's relatively low level of schooling from their country of origin implying that learning a

new language in a practical context, for example, while taking part in on-the-job-training, rather than in a school context, for example, at a language school, has a greater pay-off among members of this specific group of refugees. However, a small-scale study has shown that refugees are often isolated without much contact to their Danish colleagues during such internships and lack opportunities to practice their language skills in this context (Bramm and Kirilova, 2018; Lønsmann, 2020). Hence, our results call for more research on how language school vs. workplaces affect the acquisition of a new host country language among different groups of refugees.

Finally, slightly puzzlingly, we find a significant positive OLS coefficient on progress in health and coping when regressed on the job-oriented interventions (cat. I), but significant and negative OLS and FE coefficients when regressed on social and health-oriented interventions (cat. III). The positive coefficient on the job-oriented interventions in relation to health and coping might relate to the possibility that doing (practical) work in a workplace context provides structure and meaning to everyday life as experienced by most unemployed, relatively newly arrived refugees trying to come to terms with life in a new and foreign host country (Täubig, 2019). Other research on so-called individual placement and support interventions (IPS) targeting persons with psychiatric diagnoses has also pointed to beneficial mental health effects from going to work (Christensen et al., 2019). Concerning the negative correlation between social and health-oriented interventions and health and coping, our interpretation is that these interventions, targeting merely 9 percent of our respondents (see table 4), are (at best) insufficient in relation to addressing the health problems among some refugees potentially affected by somatic illnesses, for example PTSD. Caseworkers may initiate such interventions when they become aware of a refugee's ill health as a barrier to employment. However, such jobcentre-based initiatives may not be adequate and efficient at addressing the underlying problems. Such an interpretation would be in line with other research pointing to the difficulties in devising healthcare that truly addresses newly arrived refugees' healthcare needs (Trueba et al., 2023; Wylie et al., 2018) and research on problems affecting communication and coordination between jobcentres, GPs and psychiatric treatment (Christoffersen et al., 2023).

Conclusion

The aim of this study was to analyse the extent to which dimensions in a refugee-relevant concept of employability based on RIPE survey data hold predictive validity for future employment and participation in education. Factor analysis identified five employability dimensions in our data, and we subsequently constructed five employability indices on the basis on this analysis. Three of these indices, namely health and coping, qualifications and goal directedness and job faith and goal directedness, correlate with subsequent employment degree in a fixed effects analysis when we enter the indices one at a time in different FE regression analysis. If we enter all five of the indices in a fixed effects analysis, only the caseworker index on refugee qualifications and goal directedness correlates positively with subsequent employment degree. When we look at education as an outcome, only language skills correlate positively in fixed effects regression with participation in education and only when we run different regressions entering the five indices one at a time in separate models. Summing up, a refugee-focussed concept of employability as a 'multidimensional aggregate' (cf. Fugate et al. 2004) should include items to assess both a refugee's language skills, health, and qualifications and goal directedness (as seen by both the caseworkers and the refugee). However, a parsimonious concept of refugee employability might simply focus on caseworkers' evaluation of a refugee's qualifications and goal directedness given this is the only index emerging from our FE analyses as relevant for subsequent employment.

Moreover, we investigated potential correlations between public Danish integration interventions targeting newly arrived refugees and their progress in employability as measured by all of our five indices. We found that participation in job-oriented programmes benefits the refugees' employability as measured by three of our employability indices: qualifications and goal directedness in particular, but also the consciousness and participation and the health and coping indices. Research on refugee employability is still at an early stage, and our results call for further research. Nonetheless, we recommend to managers and caseworkers in the integration field to consider using tools to measure employability progress among some groups of unemployed refugees, as such tools might help conceptualize where progress is being made and where more efforts may be required, especially if employment appears as a distant goal.

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Appendix

Data cleaning: Principles and results

Table A1 shows the number of observations we have from each round of the survey before and after data cleaning. The data were cleaned according to the following principles:

- If a citizen or a caseworker has filled out two questionnaires during the same month, we only retain one (the latest).
- We only retain survey data if we dispose of a matching set of refugee and caseworker answers (i.e. for the same refugee) recorded during the same month.
- We drop respondents who have an emigration date from Denmark during the period 2015-2019 (irrespective of whether they re-immigrate).
- We drop respondents without an immigration date or information in the Statistics Denmark registers.

Table A1. Number of observations from each round (before and after data cleaning).

	Observations before data cleaning		Observations after data cleaning
	Citizens	Caseworkers	(citizen + caseworker)
Round:			
1	1.150	1.145	975
2	631	617	480
3	282	265	195
4-6	140	137	104
Total	2.203	2.164	1.754
Total (>1 observation)	1.053	1.019	779

Figure A1. Scree plot – eigenvalues. Common factor analysis with all 22 RIPE items, unrotated (N=1698)

Scree plot of eigenvalues after factor
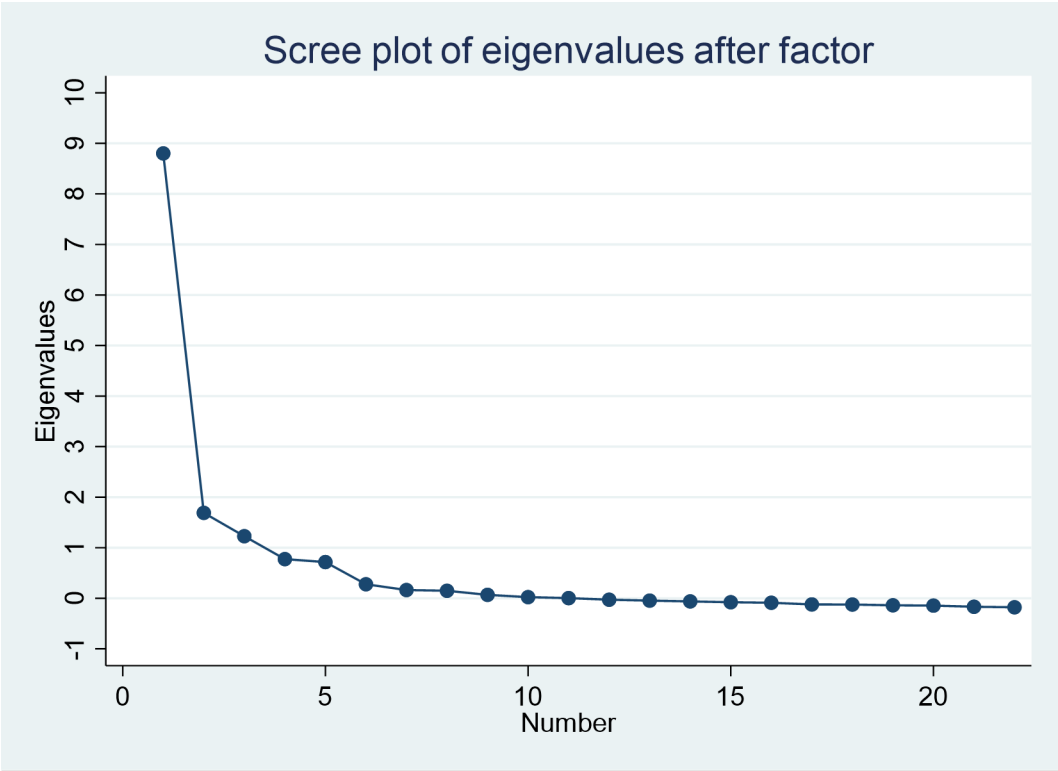
Table A2. Parallel analysis (PA) from principal factor solution for RIPE items

	FA	PA	Dif
1	8.80	0.22	8.58
2	1.69	0.19	1.50
3	1.23	0.16	1.07
4	0.78	0.14	0.64
5	0.72	0.12	0.60
6	0.28	0.10	0.18
7	0.16	0.08	0.08
8	0.15	0.06	0.08
9	0.07	0.05	0.02
10	0.02	0.03	-0.01
11	0.00	0.02	-0.01
12	-0.03	0.00	-0.03
13	-0.05	-0.02	-0.03
14	-0.06	-0.03	-0.03
15	-0.08	-0.05	-0.03
16	-0.09	-0.06	-0.03
17	-0.12	-0.08	-0.04
18	-0.12	-0.09	-0.03
19	-0.14	-0.11	-0.03
20	-0.14	-0.13	-0.01
21	-0.17	-0.15	-0.02
22	-0.18	-0.18	0.00

N = 1698

Note: Eigenvalues averaged over 500 replications

Table A3. Minimum average partial (MAP) correlations from principal factor solution for RIPE items

M=0	f0	0.1632
m=1	f1	0.0325
m=2	f2	0.0302
m=3	f3	0.0252
m=4	f4	0.0242
m=5	f5	0.0240
m=6	f6	0.0283
m=7	f7	0.0322
m=8	f8	0.0381
m=9	f9	0.0473
m=10	f10	0.0554
m=11	f11	0.0697
m=12	f12	0.0830
m=13	f13	0.0964
m=14	f14	0.1157
m=15	f15	0.1429
m=16	f16	0.1670
m=17	f17	0.2273
m=18	f18	0.2940
m=19	f19	0.3886
m=20	f20	0.5167
m=21	f21	1.0000

Table A4. Factors emerging from the analysis of the employability questionnaires

Variable	1: 'Language skills'	2: 'Conscientiousness and participation'	3: 'Health and coping'	4: 'Qualifications and goal directedness'	5: 'Job faith and goal directedness'
RfQ1: Collaborative Skills	0.15	0.27	0.23	0.12	0.30
RfQ2: Understand instructions	0.26	0.24	0.21	0.11	0.20
RfQ3: Meet on time	0.13	0.35	0.13	0.04	0.17
RfQ4: Keep job focus	0.20	0.18	0.36	0.24	0.50
RfQ5: Belief in job within six months	0.17	0.11	0.33	0.38	0.59
RfQ6: Job important six months	0.11	0.12	0.22	0.29	0.53
RfQ7: Job realism	0.20	0.14	0.18	0.28	0.46
RfQ8: Health in relation to job	0.21	0.23	0.73	0.11	0.24
RfQ9: Speaking Danish	0.76	0.11	0.16	0.05	0.21
RfQ10: Understanding Danish	0.73	0.12	0.15	0.05	0.22
RfQ11: How to improve job chances	0.26	0.11	0.31	0.18	0.36
CQ1: Collaborative skills	0.23	0.62	0.17	0.29	0.01
CQ2: Everyday problems a barrier	0.20	0.34	0.57	0.24	0.15
CQ3: Arriving on time	0.14	0.81	0.18	0.10	0.09
CQ4: Relevant qualifications	0.28	0.16	0.09	0.60	0.16
CQ5: Belief in job within six months	0.29	0.21	0.35	0.64	0.26
CQ6: Job realism	0.28	0.34	0.17	0.54	0.21
CQ7: Health in relation to job	0.18	0.24	0.78	0.17	0.10
CQ8: Speaking Danish	0.88	0.15	0.12	0.17	0.02
CQ9: Understanding Danish	0.88	0.13	0.12	0.20	0.02
CQ10: Active job search	0.30	0.22	0.26	0.49	0.27
CQ11: Active participation	0.17	0.83	0.22	0.12	0.09

Note. Loadings > 0.45 in green. Green items are used for subsequent construction of indices.

Table A.5. Employment degree and percentage of week in education regressed on employability indices (caseworker fixed effects). Linear regression without and with individual fixed effect (OLS and FE).

	Employment degree, (Average over 6 months)		The percentage of weeks in education	
	No individual fixed effect	With individual fixed effect	No individual fixed effect	With individual fixed effect
Indices:				
Language skills	-0.021*	-0.033*	0.031***	0.014
	(0.012)	(0.018)	(0.010)	(0.011)
Language skills, lagged	0.012	0.008	0.026***	0.013
	(0.011)	(0.013)	(0.008)	(0.009)
Conscientiousness and participation	0.007	0.009	0.011*	0.008
	(0.009)	(0.009)	(0.007)	(0.008)
Conscientiousness and participation, lagged	-0.016*	0.002	0.011**	-0.001
	(0.008)	(0.007)	(0.005)	(0.006)
Health and coping	0.003	0.008	0.007	-0.008
	(0.007)	(0.009)	(0.007)	(0.010)
Health and coping, lagged	-0.001	0.017	-0.004	-0.010
	(0.008)	(0.011)	(0.007)	(0.010)
Qualifications and goal directedness	0.025***	0.023*	0.004	0.005
	(0.009)	(0.012)	(0.007)	(0.009)
Qualifications and goal directedness, lagged	0.019**	0.010	-0.008	0.008
	(0.009)	(0.010)	(0.009)	(0.008)
Job faith and goal directedness	0.014**	0.002	-0.020***	-0.004
	(0.007)	(0.007)	(0.008)	(0.009)
Job faith and goal directedness, lagged	0.004	-0.003	-0.009	0.003
	(0.006)	(0.007)	(0.006)	(0.007)
Gender[#]:				
Women	-0.097***		0.008	
	(0.023)		(0.020)	
Age[#]:				
18-29 years old	-0.013		-0.029	
	(0.024)		(0.020)	
41-65 years old	-0.051**		-0.034*	
	(0.025)		(0.018)	
Marital status[#]:				
Married	-0.017		0.038**	
	(0.018)		(0.015)	
Children[#]:				
0-6-year-old children	-0.035*		-0.003	
	(0.020)		(0.018)	
7-12-year-old children	0.011		-0.015	
	(0.018)		(0.015)	
13-17-year-old children	0.000		0.003	
	(0.025)		(0.020)	
Country of origin[#]:				
Eritrea	0.031		-0.045**	
	(0.031)		(0.022)	
Other countries	-0.005		-0.031*	
	(0.027)		(0.017)	
Foreign work experience[#]:				
No foreign work experience	0.022		-0.002	
	(0.021)		(0.022)	
No information on foreign work experience	-0.022		0.043	
	(0.041)		(0.028)	
Foreign education[#]:				
Upper secondary or further education	-0.022		0.018	
	(0.024)		(0.021)	
No foreign education	0.002		0.035**	
	(0.027)		(0.017)	
No information on foreign education	-0.019		0.002	
	(0.030)		(0.019)	
Duration of residence in Denmark				
Months	0.001*		-0.001**	

	(1)	(2)	(3)	(4)
	(0.001)		(0.001)	
Time of measurement of RIPE:				
Days	0.000		0.000	
	(0.000)		(0.000)	
Year of measurement of RIPE#				
2018	-0.015	0.076	0.003	-0.004
	(0.032)	(0.053)	(0.027)	(0.019)
2019	-0.009	0.130**	-0.002	0.012
	(0.041)	(0.058)	(0.032)	(0.023)
Constant	-0.048	-0.381***	-0.100	-0.028
	(0.115)	(0.097)	(0.069)	(0.115)
N	739	739	739	739
R^2	0.396	0.410	0.286	0.164

Standard errors in parentheses.

#Reference person: is a 30-40-year-old unmarried man, who has no children in the mentioned age group, country of origin is Syria, has foreign work experience, has a primary or lower upper foreign education, time of measurement of RIPE is the year 2017

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.6. Employment degree regressed on employability indices included one at a time (caseworker fixed effects). Linear regression (OLS).

	(1)	(2)	(3)	(4)	(5)
Language skills	0.006				
	(0.011)				
Language skills, lagged	0.019*				
	(0.011)				
Conscientiousness and participation		0.028***			
		(0.008)			
Conscientiousness and participation, lagged		-0.001			
		(0.008)			
Health and coping			0.016**		
			(0.007)		
Health and coping, lagged			0.013*		
			(0.007)		
Qualifications and goal directedness				0.028***	
				(0.007)	
Qualifications and goal directedness, lagged				0.019***	
				(0.007)	
Job faith and goal directedness					0.024***
					(0.006)
Job faith and goal directedness, lagged					0.017***
					(0.005)
Control variables included	Yes	Yes	Yes	Yes	Yes
Constant	0.174	0.075	0.058	-0.029	-0.019
	(0.112)	(0.112)	(0.112)	(0.115)	(0.105)
N	767	766	769	772	773
R^2	0.328	0.342	0.351	0.373	0.362

Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A.7. Employment degree regressed on employability indices included one at a time (caseworker fixed effects). Linear regression with individual fixed effect (FE).

	(1)	(2)	(3)	(4)	(5)
Language skills	-0.012				
	(0.014)				
Language skills, lagged	0.017				
	(0.011)				
Conscientiousness and participation		0.015**			
		(0.008)			
Conscientiousness and participation, lagged		0.013*			
		(0.007)			
Health and coping			0.015**		
			(0.006)		
Health and coping, lagged			0.024**		
			(0.010)		
Qualifications and goal directedness				0.022***	
				(0.008)	
Qualifications and goal directedness, lagged				0.016**	
				(0.008)	
Job faith and goal directedness					0.008
					(0.005)
Job faith and goal directedness, lagged					0.011*
					(0.006)
Control variables included[1]	Yes	Yes	Yes	Yes	Yes
Constant	0.002	-0.224***	-0.134	-0.151**	-0.230***
	(0.060)	(0.070)	(0.086)	(0.063)	(0.069)
N	767	766	769	772	773
R^2	0.368	0.374	0.383	0.378	0.365

1) Year dummies

Standard errors in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.8. Percentage of week in education regressed on employability indices included one at a time (caseworker fixed effects). Linear regression (OLS).

	(1)	(2)	(3)	(4)	(5)
Language skills	0.037***				
	(0.010)				
Language skills, lagged	0.016				
	(0.010)				
Conscientiousness and participation		0.010**			
		(0.005)			
Conscientiousness and participation, lagged		0.012**			
		(0.006)			
Health and coping			0.007		
			(0.006)		
Health and coping, lagged			-0.000		
			(0.006)		
Qualifications and goal directedness				0.014*	
				(0.007)	
Qualifications and goal directedness, lagged				0.000	
				(0.008)	
Job faith and goal directedness					-0.004
					(0.006)
Job faith and goal directedness, lagged					-0.001
					(0.006)
Control variables included	Yes	Yes	Yes	Yes	Yes
Constant	-0.167***	-0.138**	-0.053	-0.080	0.029
	(0.064)	(0.070)	(0.067)	(0.071)	(0.075)
N	767	766	769	772	773
R^2	0.240	0.203	0.175	0.180	0.171

Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A.9. Percentage of week in education regressed on employability indices included one at a time (caseworker fixed effects). Linear regression with individual fixed effect (FE).

	(1)	(2)	(3)	(4)	(5)
Language skills	0.020**				
	(0.010)				
Language skills, lagged	0.021**				
	(0.009)				
Conscientiousness and participation		0.010			
		(0.008)			
Conscientiousness and participation, lagged		0.005			
		(0.006)			
Health and coping			-0.005		
			(0.010)		
Health and coping, lagged			0.005		
			(0.008)		
Qualifications and goal directedness				0.009	
				(0.010)	
Qualifications and goal directedness, lagged				0.011*	
				(0.006)	
Job faith and goal directedness					0.005
					(0.009)
Job faith and goal directedness, lagged					0.011*
					(0.006)
Control variables included[1]	Yes	Yes	Yes	Yes	Yes
Constant	-0.102*	-0.034	0.027	-0.055	-0.041
	(0.053)	(0.073)	(0.076)	(0.054)	(0.064)
N	767	766	769	772	773
R^2	0.181	0.179	0.160	0.135	0.166

1) Year dummies
Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A.10. Employability progress (Δ) regressed on interventions (3, I-III) (caseworker fixed effects). Linear regression without individual fixed effect (OLS).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
Interventions[#]					
Job oriented	0.170**	0.289***	0.322***	0.428***	0.565***
	(0.066)	(0.085)	(0.099)	(0.098)	(0.115)
Upgrading skills	0.081	0.105	0.234**	0.240**	0.124
	(0.086)	(0.103)	(0.118)	(0.116)	(0.137)
Social and health oriented	-0.160	-0.356*	-0.672***	-0.352*	-0.131
	(0.155)	(0.208)	(0.178)	(0.204)	(0.227)
Language training	0.097	-0.061	-0.074	-0.072	0.036
	(0.083)	(0.117)	(0.111)	(0.112)	(0.134)
Employability indices					
Language Skills	-0.334***				
	(0.031)				
Conscientiousness and participation		-0.423***			
		(0.039)			
Health and coping			-0.330***		
			(0.030)		
Qualifications and goal directedness				-0.393***	
				(0.036)	
Job faith and goal directedness					-0.536***
					(0.040)
Gender[#]					
Women	0.067	0.051	-0.113	-0.296***	-0.390***
	(0.072)	(0.091)	(0.102)	(0.109)	(0.129)
Age[#]					
18-29 years old	0.076	-0.071	-0.054	-0.034	-0.085
	(0.075)	(0.098)	(0.086)	(0.103)	(0.121)
41-65 years old	-0.150*	-0.048	-0.168	-0.162	-0.185
	(0.081)	(0.119)	(0.121)	(0.112)	(0.134)
Marital Status[#]					
Married	0.034	0.180**	-0.081	0.043	0.051
	(0.066)	(0.082)	(0.083)	(0.087)	(0.102)
Children[#]					
0-6-year-old children	-0.017	-0.091	-0.055	-0.109	-0.081
	(0.066)	(0.091)	(0.092)	(0.093)	(0.102)
7-12-year-old children	0.043	0.070	0.095	0.057	0.155
	(0.065)	(0.088)	(0.096)	(0.088)	(0.109)
13-17-year-old children	-0.155*	-0.060	-0.088	-0.040	-0.058
	(0.083)	(0.104)	(0.114)	(0.112)	(0.137)
Country of origin[#]					
Eritrea	-0.022	0.025	0.121	0.185	0.169
	(0.094)	(0.098)	(0.111)	(0.114)	(0.134)
Other countries	0.170*	0.102	-0.110	0.286**	0.126
	(0.091)	(0.103)	(0.110)	(0.119)	(0.138)
Foreign work experience[#]					
No foreign work experience	-0.157*	-0.112	-0.025	-0.171	-0.149
	(0.084)	(0.095)	(0.107)	(0.113)	(0.131)
No information on foreign work experience	-0.074	0.126	0.212	0.100	0.160
	(0.131)	(0.177)	(0.165)	(0.184)	(0.200)
Foreign education[#]					
Upper secondary or further education	0.171**	0.034	-0.132	-0.003	0.069
	(0.081)	(0.100)	(0.099)	(0.105)	(0.124)
No foreign education	-0.233**	-0.240**	-0.287**	-0.236*	-0.109

	(0.092)	(0.119)	(0.120)	(0.121)	(0.137)
No information on foreign education	0.031	-0.158	-0.185	-0.069	0.144
	(0.099)	(0.158)	(0.137)	(0.147)	(0.157)
Duration of residence in Denmark					
Months	0.005*	-0.006	-0.002	-0.003	-0.002
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Time between the two RIPE-measurements					
Days	0.001***	0.000	-0.001*	0.001*	0.001*
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Year of measurement of RIPE[#]					
2018	-0.025	-0.301	0.311	-0.095	0.283
	(0.182)	(0.210)	(0.232)	(0.214)	(0.249)
2019	-0.121	-0.319	0.214	-0.449*	0.400
	(0.223)	(0.247)	(0.273)	(0.245)	(0.285)
Constant	1.015***	2.404***	1.608***	1.522***	2.546***
	(0.313)	(0.489)	(0.418)	(0.460)	(0.518)
N	767	766	769	772	773
R^2	0.303	0.344	0.294	0.320	0.346

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, is a 30-40-year-old unmarried man, has no children in the mentioned age group, country of origin is Syria, has foreign work experience, has a primary or lower upper foreign education, time of measurement of RIPE is the year 2017.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.11. Employability progress (Δ) regressed on interventions (3, I-III) (caseworker fixed effects). Linear regression with individual fixed effect (FE).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
Interventions[#]					
Job oriented	-0.015	0.240*	0.244*	0.330**	0.180
	(0.092)	(0.131)	(0.142)	(0.132)	(0.157)
Upgrading skills	-0.069	-0.151	-0.067	0.015	-0.054
	(0.149)	(0.189)	(0.157)	(0.171)	(0.176)
Social and health oriented	-0.542***	-0.077	-0.714***	-0.418*	-0.258
	(0.156)	(0.316)	(0.242)	(0.236)	(0.227)
Language training	0.152	-0.331	-0.284	-0.239	0.035
	(0.160)	(0.226)	(0.177)	(0.217)	(0.211)
Employability indices lagged					
Language Skills	-0.974***				
	(0.069)				
Conscientiousness and participation		-1.098***			
		(0.102)			
Health and coping			-1.161***		
			(0.059)		
Qualifications and goal directedness				-1.143***	
				(0.054)	
Job faith and goal directedness					-1.236***
					(0.062)
Year of measurement of RIPE[#]					
2018	0.231	-0.452	0.076	0.236	0.023
	(0.261)	(0.463)	(0.283)	(0.228)	(0.335)
2019	0.352	-0.724	0.107	0.187	0.327
	(0.290)	(0.539)	(0.297)	(0.289)	(0.400)
Constant	3.387***	6.316***	5.930***	4.565***	6.119***
	(0.337)	(0.545)	(0.450)	(0.286)	(0.406)
Observations	767	766	769	772	773
R^2	0.575	0.666	0.649	0.676	0.690

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, time of measurement of RIPE is the year 2017.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.12. Employability progress (Δ) regressed on interventions (1-12) (caseworker fixed effects). Linear regression (OLS).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
Interventions[#]					
On-the-job training at a private enterprise	0.091	0.225**	0.179*	0.375***	0.459***
	(0.069)	(0.092)	(0.091)	(0.093)	(0.108)
On-the-job-training at a public enterprise	0.095	0.185*	0.394***	0.377***	0.344***
	(0.075)	(0.101)	(0.119)	(0.106)	(0.125)
Language training	0.130	-0.030	-0.068	-0.048	0.078
	(0.084)	(0.119)	(0.113)	(0.113)	(0.134)
Job search assistance	0.230*	-0.011	0.074	0.168	0.317**
	(0.124)	(0.136)	(0.151)	(0.159)	(0.147)
Subsidized employment	0.401**	0.720***	0.367*	0.492**	0.614***
	(0.180)	(0.169)	(0.209)	(0.192)	(0.206)
Mentor	0.252*	0.416**	0.104	0.234	0.178
	(0.152)	(0.200)	(0.233)	(0.251)	(0.285)
Upgrading of occupational skills	0.128	0.600**	0.369	0.878***	0.534**
	(0.224)	(0.262)	(0.241)	(0.240)	(0.209)
Upgrading of basic skills	0.037	0.142	0.386**	-0.001	-0.474*
	(0.140)	(0.143)	(0.186)	(0.193)	(0.250)
General course on the Danish labour market	0.139	-0.070	0.071	0.117	0.341**
	(0.118)	(0.143)	(0.185)	(0.156)	(0.171)
Training on coping with everyday life challenges	-0.223	-0.210	-0.380	-0.105	0.150
	(0.146)	(0.215)	(0.242)	(0.247)	(0.278)
Elucidation/ treatment of/ assistance for coping with health issues	-0.011	-0.162	-0.559***	-0.272	-0.211
	(0.214)	(0.250)	(0.209)	(0.218)	(0.250)
Other	0.216**	-0.003	0.095	0.164	0.186
	(0.090)	(0.125)	(0.139)	(0.139)	(0.177)
Employability indices					
Language skills	-0.337***				
	(0.032)				
Conscientiousness and participation		-0.438***			
		(0.041)			
Health and coping			-0.337***		
			(0.031)		
Qualifications and goal directedness				-0.406***	
				(0.036)	
Job faith and goal directedness					-0.548***
					(0.041)
Gender[#]					
Women	0.108	0.105	-0.115	-0.250**	-0.322**
	(0.073)	(0.092)	(0.103)	(0.111)	(0.130)
Age[#]					
18-29 years old	0.080	-0.089	-0.041	-0.046	-0.110
	(0.077)	(0.095)	(0.087)	(0.100)	(0.117)
41-65 years old	-0.145*	-0.033	-0.161	-0.140	-0.167
	(0.082)	(0.117)	(0.121)	(0.112)	(0.135)
Marital Status[#]					
Married	0.041	0.185**	-0.085	0.029	0.036

	(0.066)	(0.083)	(0.086)	(0.088)	(0.102)
Children[#]					
0-6-year-old children	-0.008	-0.061	-0.058	-0.081	-0.051
	(0.066)	(0.089)	(0.091)	(0.092)	(0.101)
7-12-year-old children	0.045	0.073	0.098	0.048	0.141
	(0.065)	(0.088)	(0.096)	(0.087)	(0.107)
13-17-year-old children	-0.154*	-0.047	-0.071	-0.041	-0.049
	(0.082)	(0.104)	(0.115)	(0.113)	(0.139)
Country of origin[#]					
Eritrea	-0.045	0.031	0.109	0.170	0.136
	(0.098)	(0.100)	(0.115)	(0.115)	(0.135)
Other countries	0.171*	0.106	-0.128	0.260**	0.102
	(0.091)	(0.105)	(0.109)	(0.118)	(0.140)
Foreign work experience[#]					
No foreign work experience	-0.170**	-0.093	0.001	-0.155	-0.151
	(0.086)	(0.099)	(0.108)	(0.115)	(0.130)
No information on foreign work experience	-0.081	0.144	0.231	0.121	0.175
	(0.135)	(0.175)	(0.161)	(0.182)	(0.198)
Foreign education[#]					
Upper secondary or further education	0.177**	0.056	-0.110	0.028	0.080
	(0.082)	(0.099)	(0.098)	(0.104)	(0.125)
No foreign education	-0.233**	-0.237**	-0.302**	-0.236*	-0.101
	(0.092)	(0.118)	(0.122)	(0.120)	(0.134)
No information on foreign education	0.040	-0.137	-0.160	-0.042	0.153
	(0.101)	(0.155)	(0.133)	(0.143)	(0.153)
Duration of residence in Denmark					
Months	0.006**	-0.007*	-0.002	-0.003	-0.002
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Time between the two RIPE measurements					
Days	0.001***	0.001	-0.001*	0.001*	0.001**
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Year of measurement of RIPE[#]					
2018	-0.025	-0.329	0.332	-0.126	0.198
	(0.183)	(0.210)	(0.231)	(0.217)	(0.249)
2019	-0.121	-0.335	0.227	-0.459*	0.322
	(0.220)	(0.248)	(0.274)	(0.248)	(0.284)
Constant	0.915***	2.504***	1.694***	1.541***	2.570***
	(0.342)	(0.513)	(0.435)	(0.486)	(0.545)
N	767	766	769	772	773
R^2	0.318	0.365	0.298	0.338	0.361

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, is a 30-40-year-old unmarried man, has no children in the mentioned age group, country of origin is Syria, has foreign work experience, has a primary or lower upper foreign education, time of measurement of RIPE is the year 2017.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.13. Employability progress (Δ) regressed on interventions (1-12) (caseworker fixed effects). Linear regression with individual fixed effect (FE).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
Interventions[#]					
On-the-job training at a private enterprise	-0.167*	0.044	0.125	0.206*	0.055
	(0.088)	(0.134)	(0.137)	(0.122)	(0.128)
On-the-job-training at a public enterprise	-0.053	0.033	0.052	0.207	-0.061
	(0.097)	(0.149)	(0.243)	(0.185)	(0.216)
Language training	0.164	-0.313	-0.262	-0.287	0.009
	(0.159)	(0.226)	(0.199)	(0.217)	(0.208)
Job search assistance	0.095	-0.067	-0.073	0.269	0.103
	(0.188)	(0.185)	(0.220)	(0.235)	(0.182)
Subsidized employment	0.542***	0.561***	0.117	0.525**	0.209
	(0.193)	(0.188)	(0.202)	(0.238)	(0.231)
Mentor	0.268	0.468	0.087	0.370	0.467
	(0.203)	(0.320)	(0.209)	(0.358)	(0.429)
Upgrading of occupational skills	-0.043	0.466	0.057	1.091**	1.110***
	(0.460)	(0.476)	(0.493)	(0.496)	(0.244)
Upgrading of basic skills	0.127	0.547	0.647**	-0.134	-0.248
	(0.196)	(0.454)	(0.260)	(0.349)	(0.316)
General course on the Danish labour market	-0.060	-0.205	-0.226	-0.018	-0.043
	(0.180)	(0.190)	(0.189)	(0.191)	(0.203)
Training on coping with everyday life challenges	-0.166	-0.605**	-0.486*	-0.238	-0.471
	(0.149)	(0.308)	(0.279)	(0.313)	(0.332)
Elucidation/ treatment of/ assistance for coping with health issues	-0.625***	0.121	-0.617**	-0.480*	-0.096
	(0.170)	(0.387)	(0.295)	(0.254)	(0.218)
Other	0.070	0.025	0.015	0.110	0.110
	(0.134)	(0.153)	(0.162)	(0.164)	(0.204)
Employability indices					
Language skills	-0.959***				
	(0.069)				
Conscientiousness and Participation		-1.097***			
		(0.097)			
Health and coping			-1.164***		
			(0.062)		
Qualifications and goal directedness				-1.162***	
				(0.052)	
Job faith and goal directedness					-1.235***
					(0.059)
Year of measurement of RIPE[#]					
2018	0.238	-0.392	0.107	0.211	0.016
	(0.277)	(0.443)	(0.291)	(0.230)	(0.344)
2019	0.338	-0.632	0.161	0.176	0.382
	(0.303)	(0.507)	(0.306)	(0.293)	(0.400)
Constant	3.540***	6.233***	6.252***	4.079***	6.382***
	(0.337)	(0.575)	(0.501)	(0.311)	(0.393)
N	767	766	769	772	773

R^2	0.601	0.681	0.649	0.689	0.701

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, time of measurement of RIPE is the year 2017.

* p<0.10, ** p<0.05, *** p<0.01

Table A.14. Employability progress (Δ) regressed on interventions (measured using DREAM-data) (caseworker fixed effects). Linear regression (OLS).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
ALMP-dummies[#]					
Subsidized employment	-0.078	0.317**	-0.145	0.069	0.201
	(0.174)	(0.132)	(0.166)	(0.170)	(0.175)
On-the-job training, private	0.036	0.239***	0.105	0.206**	0.236**
	(0.062)	(0.088)	(0.080)	(0.090)	(0.102)
On-the-job training, public	0.062	0.155*	0.099	0.326***	0.177
	(0.074)	(0.090)	(0.100)	(0.095)	(0.124)
Guidance and classroom training	-0.037	-0.096	0.034	0.065	0.172
	(0.122)	(0.161)	(0.137)	(0.157)	(0.163)
Formal education and language training	0.029	-0.030	0.001	0.035	-0.074
	(0.069)	(0.091)	(0.087)	(0.089)	(0.107)
Employability indices					
Language skills	-0.326***				
	(0.032)				
Conscientiousness and participation		-0.416***			
		(0.040)			
Health and coping			-0.302***		
			(0.031)		
Qualifications and goal-directedness				-0.365***	
				(0.037)	
Job faith and goal-directedness					-0.513***
					(0.044)
Gender[#]					
Women	0.059	0.049	-0.137	-0.326***	-0.347***
	(0.072)	(0.095)	(0.103)	(0.112)	(0.134)
Age[#]					
18-29 years old	0.076	-0.079	-0.059	-0.031	-0.105
	(0.077)	(0.099)	(0.090)	(0.102)	(0.124)
41-65 years old	-0.161**	-0.058	-0.186	-0.166	-0.185
	(0.082)	(0.117)	(0.123)	(0.115)	(0.138)
Marital status[#]					
Married	0.035	0.205**	-0.063	0.062	0.061
	(0.066)	(0.086)	(0.086)	(0.090)	(0.103)
Children[#]					
0-6-year-old children	-0.029	-0.117	-0.092	-0.146	-0.107
	(0.067)	(0.092)	(0.094)	(0.092)	(0.102)
7-12-year-old children	0.050	0.104	0.116	0.071	0.171
	(0.066)	(0.087)	(0.096)	(0.088)	(0.112)
13-17-year-old children	-0.144*	-0.045	-0.047	-0.011	-0.065
	(0.082)	(0.105)	(0.117)	(0.117)	(0.143)
Country or origin[#]					
Eritrea	-0.006	0.029	0.136	0.208*	0.186
	(0.094)	(0.101)	(0.112)	(0.114)	(0.139)
Other countries	0.182**	0.116	-0.093	0.311***	0.134
	(0.091)	(0.105)	(0.114)	(0.119)	(0.143)
Foreign work experience[#]					
No foreign work experience	-0.182**	-0.117	-0.067	-0.167	-0.175
	(0.083)	(0.100)	(0.107)	(0.113)	(0.132)
No information on foreign work	-0.100	0.130	0.157	0.055	0.123

experience					
	(0.131)	(0.176)	(0.171)	(0.182)	(0.201)
Foreign education[#]					
Upper secondary or further education	0.163**	0.041	-0.131	0.014	0.064
	(0.079)	(0.097)	(0.098)	(0.103)	(0.123)
No foreign education	-0.223**	-0.216*	-0.243*	-0.201	-0.104
	(0.093)	(0.125)	(0.126)	(0.124)	(0.140)
No information on foreign education	0.048	-0.158	-0.127	-0.029	0.132
	(0.102)	(0.152)	(0.146)	(0.143)	(0.156)
Duration of residence in Denmark					
Months	0.005	-0.006	-0.001	-0.003	-0.004
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Time between the two RIPE measurements					
Days	0.001**	0.000	-0.001*	0.001	0.001
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Year of measurement of RIPE[#]					
2018	-0.033	-0.349*	0.301	-0.118	0.252
	(0.178)	(0.204)	(0.224)	(0.205)	(0.242)
2019	-0.122	-0.346	0.251	-0.456*	0.369
	(0.218)	(0.245)	(0.266)	(0.241)	(0.277)
Constant	1.174***	2.374***	1.496***	1.375***	2.743***
	(0.323)	(0.488)	(0.416)	(0.487)	(0.527)
N	767	766	769	772	773
R^2	0.293	0.343	0.266	0.303	0.325

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, is a 30-40-year-old unmarried man, has no children in the mentioned age group, country of origin is Syria, has foreign work experience, has a primary or lower upper foreign education, time of measurement of RIPE is the year 2017

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.15. Employability progress (Δ) regressed on interventions (measured using DREAM data) (caseworker fixed effects). Linear regression with individual fixed effect (FE).

	(1) ΔLanguage Skills	(2) ΔConscientiousness and Participation	(3) ΔHealth and Coping	(4) ΔQualifications and Goal-Directedness	(5) ΔJob Faith and Goal Directedness
ALMP-dummies[#]					
Subsidized employment	-0.150	0.388***	-0.432**	-0.057	-0.027
	(0.254)	(0.149)	(0.220)	(0.244)	(0.219)
On-the-job training, private	-0.027	0.090	0.060	0.104	0.044
	(0.090)	(0.127)	(0.130)	(0.116)	(0.104)
On-the-job training, public	-0.010	-0.163	-0.175	0.166	0.125
	(0.143)	(0.174)	(0.213)	(0.178)	(0.194)
Guidance and classroom training	-0.069	-0.041	-0.059	0.012	0.197
	(0.191)	(0.261)	(0.170)	(0.285)	(0.269)
Formal education and language training	-0.086	-0.181	-0.266*	-0.240*	-0.385***
	(0.106)	(0.161)	(0.148)	(0.122)	(0.130)
Employability indices					
Language skills	-0.960***				
	(0.068)				
Conscientiousness and participation		-1.096***			
		(0.102)			
Health and coping			-1.119***		
			(0.060)		
Qualifications and goal-directedness				-1.118***	
				(0.060)	
Job faith and goal-directedness					-1.227***
					(0.060)
Year of measurement of RIPE[#]					
2018	0.251	-0.474	0.128	0.229	0.118
	(0.264)	(0.447)	(0.273)	(0.230)	(0.324)
2019	0.370	-0.714	0.256	0.269	0.460
	(0.289)	(0.525)	(0.299)	(0.279)	(0.389)
Constant	3.457***	6.253***	6.186***	4.499***	6.551***
	(0.332)	(0.575)	(0.433)	(0.291)	(0.424)
N	767	766	769	772	773
R^2	0.560	0.664	0.641	0.667	0.697

Δ indicates: the change in score from one round of RIPE measurement to the next.

Standard errors in parentheses

[#]Reference person: has not received the mentioned intervention, time of measurement of RIPE is the year 2017

* $p<0.10$, ** $p<0.05$, *** $p<0.01$