

Labour Market Integration Programmes for Refugees in Austria:

Do they Really Work and for Whom?

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Abstract

In this study, we evaluate the effectiveness of the participation of refugees in integration programmes intended to help them gain employment. The specific programmes considered are the Competence Check programme and the Integration Year programme that were introduced in Austria around the time of the 2015 crisis, when refugees poured from the Middle East into the EU. The study is based on the fourth and fifth waves of a survey (FIMAS) of refugees from Afghanistan, Iraq, Iran and Syria in Austria, and it uses matching models to evaluate the effects on employment of participation in those two programmes. More specifically, it applies multivariate matching methods that ensure better balancing properties between the control and the treated groups. We find especially positive effects of the programmes on the employability of women, the poorly educated, younger and older age cohorts. These programmes thus seem to work specifically for those that find themselves in a more vulnerable labour market situation.

Keywords: refugees, matching methods, multivariate distance matching, labour market integration, labour market policies

JEL classification: J68, H43, C13

CONTENTS

Abstract.....	5
1. Introduction.....	11
2. Literature review	13
3. Data source and main characteristics of participants and non-participants	15
3.1. Data	15
3.2. Main characteristics of participants and non-participants	16
4. Methodology.....	19
5. Estimation results	21
5.1. Results concerning the impact on employment of completing the Competence Check	22
5.2. Results concerning the impact on employment of completing the Integration Year	25
6. Main findings and conclusions	27
References	28
Annex A	31
Annex B.....	34
B1 Density balancing plots	34
B2 Common support statistics.....	39

TABLES AND FIGURES

Table 1 / Selected descriptive statistics for participants and non-participants, by integration programme.....	17
Table 2 / Estimation results for the effect on employment of completing the Competence Check	24
Table 3 / Estimation results for the effect on labour market participation of completing the Integration Year	26
Box 1 / Selected labour market integration programmes for refugees and asylum seekers.....	13
Table A.1 / Probability of completing the Competence Check (KCH) or the Integration Year (IY).....	32
Table A.2 / Probability of being employed (OLS estimates).....	33
Figure B1.1 / Density balancing plots, completed Competence Check (KCH), total and by gender.....	34
Figure B1.2 / Density balancing plots, completed Competence Check (KCH), breakdown by education and gender	35
Figure B1.3 / Density plots of propensity scores, completed Competence Check (KCH), breakdown by age categories.....	35
Figure B1.4 / Density plots of propensity scores, completed Competence Check (KCH), breakdown by age category and gender	36
Figure B1.5 / Density plots of propensity scores, completed Integration Year (IY), total and by gender	36
Figure B1.6 / Density plots of propensity scores, completed Integration Year (IY), breakdown by gender and education	37
Figure B1.7 / Density plots of propensity scores, completed integration year (IY), breakdown by age category	37
Figure B1.8 / Density plots of propensity scores, completed Integration Year (IY), breakdown by age category and gender	38
Figure B2.1 / Common support statistics (standardised difference and variance ratio) - Competence Check, total sample	39
Figure B2.2 / Common support statistics (standardised difference and variance ratio) - Competence Check, females	40
Figure B2.3 / Common support statistics (standardised difference and variance ratio) - Competence Check, males	40
Figure B2.4 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated.....	41
Figure B2.5 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated females	41
Figure B2.6 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated males	42
Figure B2.7 / Common support statistics (standardised difference and variance ratio) - Competence Check, age group 25-34	42

Figure B2.8 / Common support statistics (standardised difference and variance ratio) - Competence Check, females aged 25-34.....	43
Figure B2.9 / Common support statistics (standardised difference and variance ratio) - Competence Check, males aged 25-34.....	43
Figure B2.10 / Common support statistics (standardised difference and variance ratio) - Integration Year, total sample.....	44
Figure B2.11 / Common support statistics (standardised difference and variance ratio) - Integration Year, females	44
Figure B2.12 / Common support statistics (standardised difference and variance ratio) - Integration Year, males	45
Figure B2.13 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated.....	45
Figure B2.14 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated females	46
Figure B2.15 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated males	46
Figure B2.16 / Common support statistics (standardised difference and variance ratio) - Integration Year, age group 35-44.....	47
Figure B2.17 / Common support statistics (standardised difference and variance ratio) - Integration Year, females aged 35-44	47
Figure B2.18 / Common support statistics (standardised difference and variance ratio) - Integration Year, males aged 35-44	48
Figure B2.19 / Common support statistics (standardised difference and variance ratio) - Integration Year, age group 45-65.....	48
Figure B2.20 / Common support statistics (standardised difference and variance ratio) - Integration Year, females aged 45-65	49
Figure B2.21 / Common support statistics (standardised difference and variance ratio) - Integration Year, males aged 45-65	49

1. Introduction

The effectiveness of labour market integration programmes tailored to migrants (and more recently refugees) is a highly relevant topic for policy makers, as well as in the academic community (Alho, 2021; Anderson, 2013; Anger et al., 2022; Bacher et al., 2020; Hernes et al., 2022; de Lange et al., 2021). In the EU context – and especially in Austria – several policy actions and active labour market policies have been introduced with the goal of helping refugees find a pathway into the labour market of the host country. Given Austria's long experience of accepting and hosting refugees – from Hungary and Czechoslovakia in the late 1950s and the 1960s; from Bosnia in the early 1990s; from Afghanistan and Syria over the last decade; and more recently from Ukraine – it is of paramount importance to evaluate the effectiveness of such recent policies.

It was especially the wave of refugees from 2015 onward following the crisis in North Africa and the Middle East that lent urgency to the need to come up with a number of policy actions and support programmes to facilitate the entry into the labour market of refugees and to assist them in getting a job that fits their skill levels and at the same time meets the labour market needs of Austria. A number of schemes, one of them called Competence Check (KCH), were introduced with the goal of assessing the skills and qualifications of refugees, determining what they needed to acquire or to improve their professional skills and equipping them with those skills that are in demand on the local labour market. In addition, other programmes, such as Voluntary Integration Year (IY), focus on skills assessment and work and training programmes that are open not only to refugees who have already been granted asylum (from 2014 onwards), but also to asylum seekers (Ortlieb et al., 2021; Mara and Vidovic, 2021).

The effectiveness of labour market integration programmes for refugees is challenged by the interplay of several issues in the host country and the refugees' country of origin. The destination country's macroeconomic context and the approach followed by its policy makers regarding the labour market integration of refugees are essential in determining their path towards integration. Furthermore, essential prerequisites for the successful integration of refugees include their socio-demographic characteristics, their skills and qualifications profiles, and their physical and psychological readiness for entering and adjusting to the host country's labour market.

The evaluation of labour market integration programmes tailored to refugees has already been assessed (Ortlieb et al., 2021; Mara and Vidovic, 2021; Bacher et al., 2020). The focus of these studies has been on assessing the labour market access of refugees simply by looking at the probability of their entering the labour market, depending on a set of individual characteristics, destination country features and participation in different labour market integration programmes – without, however, properly applying policy evaluation techniques.

We differ from these studies by following a distinct approach – namely, matching methods – to evaluating the effectiveness of two of the integration programmes implemented in Austria. The study relies on the use of a large-scale database covering a number of waves of a survey of refugees in Austria, specifically those that arrived in Austria from 2010 onwards. We focus on an assessment and

evaluation of the role of two integration programmes – i.e. the Competence Check (KCH) and Voluntary Integration Year (IY; referred to in the following as Integration Year) – both of which were designed to assist refugees into employment. These schemes are assessed in terms of their effectiveness with regard to different subgroups, such as those distinguished by gender, age and level of education.

Our study finds that these integration programmes have been particularly useful in assisting the most vulnerable refugees into the labour market: women, the youngest and older age cohorts, and those refugees with a low level of education. By contrast, for those with a medium or a high level of education, the integration programmes have failed to improve their employment chances.

The remainder of the paper is organised as follows. In the next section we present a literature review and some features of the labour market integration of refugees in Austria and, in a wider context, in the EU. In section 3 we present some of the main features of the database used for our analysis and some stylised facts about the sample used to evaluate the programmes. We proceed in section 4 with a presentation of the methodology used in the study, the matching techniques, plus a justification for our choice of matching methods and some caveats that must be taken into account when employing such methods. Section 5 presents the main findings for the different subgroups, as highlighted above. The final section offers a conclusion and discusses some policy implications that emerge from this analysis.

2. Literature review

Austria is among the EU countries with the highest number of migrants and refugees in relation to the size of its population. Furthermore, over recent years Austria has continued to take in a large number of migrants and refugees. The arrival of over 80,000 asylum seekers in 2015, in the wake of the Syrian war, presented a fresh challenge for Austrian policy makers in terms of hosting and assisting refugees in settling and building a decent life in Austria. Thus, further support and tailor-made integration programmes for refugees and asylum seekers were introduced. As in other EU countries that have been affected by a huge influx of refugees, new integration programmes were introduced that especially target their access to employment and their overall adjustment to the host country (Martin et al., 2016; Eurofound, 2019). In line with other important EU destination countries for refugees, the focus of the integration programmes was not only on employment, but also on education, training and skills acquisition. Financial support for the settlement and integration of refugees rose markedly, and several new integration programmes were launched, such as the Competence Check by the Public Employment Service (PES/AMS); the Voluntary Integration Year; also German language courses aimed specifically at refugees (Güngör, 2017) and nationwide apprenticeship placement (see Box 1).

BOX 1 / SELECTED LABOUR MARKET INTEGRATION PROGRAMMES FOR REFUGEES AND ASYLUM SEEKERS

Competence Check: The Competence Check (KCH) is a tool used to assess the skills, qualifications and linguistic knowledge of recognised refugees, whose competences are not apparent from their documents. It is offered in the mother tongue of the refugees involved (e.g. Farsi/Dari, Arabic, Russian and French) and in German for those with sufficient German language skills; it takes 5-7 weeks to complete. The aim of the Competence Check is to recognise existing skills and qualifications, and to determine any additional need for qualifications. It also provides refugees with information about employment and the Austrian education system. Between August 2015 and December 2018, Competence Checks were carried out among 18,667 unemployed recognised refugees, of whom 14,362 (77%) were men and 4,315 (23%) were women. More than half of those interviewed originated from Syria, 20% were from Afghanistan, 8% from Iraq, 7% from Iran and 14% from other countries (European Union, 2017; Gatterbauer, 2018).

Voluntary Integration Year: From 2016, the possibility of undertaking a voluntary integration year (freiwilliges Integrationsjahr – IY) has been open to those people who have been granted refugee status or subsidiary protection status, who have held that status for a maximum of two years and who have claimed the needs-based minimum income (Pfeffer, 2017). In parallel, the obligatory Integration Year Act (Integrationsjahrgesetz – IJG) became effective from September 2017. This law focuses on the provision of active labour market policy measures for refugees; also it was envisaged that those asylum seekers who are highly likely to be granted asylum should be able to access labour market policy measures, including work training programmes, from January 2018 onwards.¹

¹ https://www.ams.at/content/dam/download/integrationsjahr/001_EN_Integrationsjahr.pdf

In consequence, the literature regarding the labour market integration of refugees in Austria expanded very quickly. The focus has been on understanding and assessing how rapidly the process of labour market integration and settlement proceeds in the destination country. Considerable effort has been expended on several research questions concerning the main determinants of labour market integration; the extent to which the skills and qualification levels of refugees are adequate for the Austrian labour market; and how social affinities, migration networks and cultural characteristics can play a role in the process of adjusting to the Austrian labour market (Verwiebe et al., 2019; Ludolph, 2023; Konle-Seidl, 2018; Pfeffer, 2017; Heilemann, 2022). Several studies have focused on the role that different programmes have played in helping refugees enter the labour market. Attention has also been devoted to health-related issues – both physical and mental health – and how this could be another important determinant for the path to integration and successful access to the labour market, given the fact that recent refugees have come from conflict areas affected by war and from distant countries (Kohlenberger et al., 2019; Walther et al., 2020). Challenges faced in the host country include the achievement of recognised refugee status and the recognition of qualifications previously attained (Falkenhain et al., 2021). The relevance of these factors has been confirmed not only in the context of Austria, but also in other EU countries that have faced a large influx of refugees (De Sario, 2021; Kapsalis et al., 2021; Schwenken, 2021; Godino Pons and Barrientos, 2021; Orav, 2022; Bredgaard and Thomsen, 2018; Hillmann and Toğral Koca, 2021).

The accumulated knowledge from these studies suggests that language courses especially – but also other integration programmes – may be beneficial for refugees and their labour market outcomes (Brücker et al., 2014; Struck, 2019; Aigner and Bešić, 2023).

Studies have shown that highly skilled refugees also face important challenges in gaining entry to the host country's labour market. In Germany, health professionals awarded refugee status have faced many structural and institutional barriers; recommendations made in this context have included offering them job-specific language courses and additional courses that address formal and cultural aspects of work, in order to ease integration at work, especially in the early phases (Khan-Gökkaya and Moesko, 2021; Alho, 2021).

The labour market integration of refugees varies considerably for the different subgroups across countries: one reason for this is that integration policies already vary at entry for different target groups, so that some countries offer free language courses right at the beginning, while in others refugees must pay for such courses; some countries offer housing and labour market training assistance, while others offer just the former and not the latter assistance (Bevelander, 2020; van Riemsdijk and Axelsson, 2021).

While most of the studies have looked at labour market outcomes and have analysed the main determinants, less coverage has been devoted to evaluation of the effectiveness of specific integration programmes and to the role that different support measures can play in successful labour market integration. Thus, such questions as the extent to which participation in integration programmes boosts the employment chances of refugees, the magnitude of the effect for different subgroups and what would be the counterfactual if people did not participate in such programmes remain less well researched.

This study attempts to address some of these issues by comparing the difference in outcomes for those who attend such programmes and those who do not, in order to evaluate the role of integration programmes. We use a quasi-experimental approach to evaluate the effectiveness of labour market integration programmes by applying matching techniques for defining and estimating the different treatment effects of such programmes.

3. Data source and main characteristics of participants and non-participants

3.1. DATA

The dataset used for evaluating the effectiveness of labour market integration programmes is the FIMAS survey, which is a large-scale survey of recognised refugees and persons with subsidiary protection status, mostly from Syria, Afghanistan, Iraq and Iran, aged between 15 and 64, and resident in Austria. It is designed as a longitudinal dataset with a one-year reinterview interval, which allows integration processes to be studied over time. Currently, five survey waves are available. The current analysis uses waves four and five, which were conducted in all nine Austrian provinces between October and December 2020 and between January and March 2022, respectively. Both were carried out by the International Centre for Migration Policy Development, in cooperation with the Vienna Institute for International Economic Studies (wiiw).

The survey draws on three different sources:² (i) random sampling of asylum seekers and beneficiaries of subsidiary protection who are (or were previously) registered with the Austrian Public Employment Service (AMS), drawing on AMS client data; interviewees were selected through random sampling, stratified by province and citizenship; (ii) face-to-face interviews, self-administered questionnaires, telephone interviews or online questionnaires; with the onset of the Covid-19 crisis, computer-assisted web interview (CAWI) and computer-assisted telephone interview (CATI) became the sole interview modes; (iii) respondents from previous surveys, who were invited to participate again and who form the panel part of the FIMAS survey; interviewees received a shopping voucher worth EUR 5-10, depending on whether they were participating for the first time or had already participated in previous surveys.

In each FIMAS survey, a special module is devoted to the assessment of integration programmes for refugees. The aim is to collect information about the type of integration programmes targeted at recent refugees – e.g. special attention is paid to integration programmes that seek to facilitate their access to employment, such as those mentioned in Box 1. Specifically, using a battery of questions, the FIMAS surveys collect information on education (both prior to arrival and in Austria); recognition of qualifications and further training or participation in educational programmes; participation in German language courses; participation in integration courses (as well as the duration of attendance on such courses, failure or the successful completion of such courses); and subjective assessments of the challenges and opportunities provided by the courses, etc. The richness of the information collected through the FIMAS surveys offers a unique opportunity to analyse the effectiveness of integration programmes, especially as concerns the labour market integration of refugees. As highlighted in the previous section, we will focus on two specific support programmes: the Competence Check and Integration Year (for details, see Box 1 above).

² Further details on the survey methodology (target group, sample, survey instrument, data collection phase, data cleaning and weighting) are provided in the research reports on waves four and five (see Baumgartner et al., 2021; Baumgartner et al., 2023).

3.2. MAIN CHARACTERISTICS OF PARTICIPANTS AND NON-PARTICIPANTS

In Table 1 below, the main characteristics of participants (those who completed the KCH and IY) and non-participants are presented. The information includes detailed information about their socio-demographic characteristics, such as age, gender, marital status, number of children, country of origin and level of education before moving to Austria. Further details are reported on the duration of their stay in Austria (in years and months), province of residence in Austria, health status, level of German and English language skills, experience of employment in Austria (whether the person is in paid or voluntary employment, and how long it took them to find their first job).

A brief comparison of the two groups shows that those refugees who have completed the KCH tend to be slightly older than those who have not: on average, those who have completed the KCH are aged 33, while those who have not participated in the programme are 31 on average. In terms of gender, the data show a much higher share of men among participants (65%); among non-participants, men accounted for 58%. As concerns marital status, the difference between participants and non-participants is not that great: 44% of participants were married, as were 46% of non-participants. Among those who attended the programme, 55% had children, whereas among non-participants the figure was 52%. Moreover, among participants the proportion of those with one child was higher than among non-participants, whereas among non-participants the frequency of those with more than three children was much higher. Refugees who participated in the programme were mainly from Syria (44%), Iran (31%) and Afghanistan (16%), while the remaining 9% originated from other countries. Among non-participants the proportion of Syrian refugees was in excess of 55%, while the share of Iranians was much lower (15%). Participants also reported higher educational levels: 36% of participants had a high level of education, while among non-participants the share was 24%. Also, the share of those with a medium level of education was slightly higher among participants. Meanwhile, 41% of non-participants had a low level of education – far more than among participants (29%).

In terms of time spent in the host country, the comparison suggests that participation in KCH was more frequent among those who had been in the host country for at least five years, while non-participation was slightly higher among those who had been in the destination country for less than three years. Similarly, when we compare the length of time spent in the country in terms of the number of months, those who participated had been in the host country for slightly longer than those who did not participate. Among participants, residence in Vienna (63%) was far more frequent than in other regions; among non-participants, the distribution across regions was less skewed. When it comes to health status, participants reported being in much better health than non-participants: while 91% of participants reported being in good health, among non-participants the figure was only 72%. Participants had much better German and English language skills than non-participants. With respect to experience of working in Austria, participation in the labour market was much higher among KCH participants: 65% reported being employed in any capacity (i.e. paid or unpaid) and 55% being in paid employment; among non-participants, only 55% were employed in any capacity and 47% were in paid employment. Also, participants reported having had more rapid entry to employment or their first job in Austria than non-participants.

Table 1 / Selected descriptive statistics for participants and non-participants, by integration programme

Variable	Competence Check (KCH)						Integration Year (IY)					
	Participants			Non-participants			Participants			Non-participants		
	Obs	Mean	SD	Obs	Mean	SD	Obs	Mean	SD	Obs	Mean	SD
Age	897	32.81	8.989	5592	31.24	10.049	600	34.22	9.957	5889	31.17	9.877
Gender (Female=1)	897	0.35	0.477	5592	0.42	0.493	600	0.37	0.482	5889	0.41	0.492
Being married	897	0.44	0.497	5592	0.46	0.498	600	0.51	0.500	5889	0.45	0.497
Having children	897	0.55	0.498	5592	0.52	0.500	600	0.48	0.500	5889	0.53	0.499
Having 1 child	897	0.15	0.358	5592	0.11	0.313	600	0.11	0.317	5889	0.12	0.320
Having 2 children	897	0.15	0.357	5592	0.15	0.353	600	0.13	0.335	5889	0.15	0.356
Having 3 children	897	0.15	0.357	5592	0.15	0.353	600	0.13	0.335	5889	0.15	0.356
Having more than 3 children	897	0.13	0.341	5592	0.20	0.403	600	0.25	0.435	5889	0.19	0.390
Origin: Syria	897	0.44	0.496	5592	0.55	0.497	600	0.56	0.496	5889	0.53	0.499
Origin: Afghanistan	897	0.16	0.369	5592	0.20	0.398	600	0.12	0.327	5889	0.20	0.399
Origin: Iran	897	0.31	0.463	5592	0.15	0.360	600	0.17	0.376	5889	0.18	0.380
Low level of education	880	0.29	0.455	5375	0.41	0.491	583	0.30	0.459	5672	0.40	0.490
Medium level of education	880	0.30	0.458	5375	0.26	0.437	583	0.31	0.464	5672	0.26	0.437
High level of education	880	0.36	0.479	5375	0.24	0.427	583	0.34	0.473	5672	0.25	0.432
1 year of stay in AT	897	0.01	0.094	5592	0.03	0.175	600	0.02	0.134	5889	0.03	0.169
2 years of stay	897	0.00	0.000	5592	0.00	0.000	600	0.00	0.000	5889	0.00	0.000
3 years of stay	897	0.02	0.136	5592	0.03	0.170	600	0.02	0.140	5889	0.03	0.168
4 years of stay	897	0.04	0.191	5592	0.05	0.221	600	0.06	0.228	5889	0.05	0.216
5 years of stay	897	0.15	0.356	5592	0.15	0.353	600	0.14	0.346	5889	0.15	0.354
6 years of stay	897	0.29	0.455	5592	0.27	0.445	600	0.29	0.456	5889	0.27	0.446
7 years of stay	897	0.27	0.443	5592	0.24	0.424	600	0.29	0.454	5889	0.24	0.424
8 years of stay	897	0.16	0.363	5592	0.12	0.329	600	0.12	0.323	5889	0.13	0.335
9 years of stay	897	0.00	0.000	5592	0.00	0.000	600	0.00	0.000	5889	0.00	0.000
Duration of stay, months	867	75.44	29.341	5171	73.95	38.919	570	72.89	30.249	5468	74.29	38.388
Resides: Vienna	897	0.63	0.483	5592	0.41	0.492	600	0.46	0.499	5889	0.44	0.496
Resides: Upper Austria	897	0.07	0.252	5592	0.10	0.299	600	0.06	0.231	5889	0.10	0.298
Resides: Lower Austria	897	0.05	0.225	5592	0.09	0.292	600	0.08	0.266	5889	0.09	0.286
Resides: Salzburg	897	0.03	0.177	5592	0.08	0.267	600	0.08	0.269	5889	0.07	0.256
Health status: good	897	0.91	0.282	5592	0.72	0.448	600	0.89	0.311	5889	0.73	0.442
Low level of German language skills	897	0.01	0.082	5592	0.02	0.154	600	0.01	0.107	5889	0.02	0.150
Satisfactory level of German language skills	897	0.09	0.290	5592	0.17	0.374	600	0.11	0.315	5889	0.16	0.368
Good level of German language skills	897	0.41	0.492	5592	0.41	0.491	600	0.46	0.499	5889	0.40	0.490
Very good level of German language skills	897	0.49	0.500	5592	0.40	0.490	600	0.42	0.494	5889	0.41	0.492
Low level of English language skills	897	0.13	0.337	5592	0.23	0.422	600	0.18	0.386	5889	0.22	0.415
Satisfactory level of English language skills	897	0.25	0.431	5592	0.27	0.444	600	0.28	0.450	5889	0.26	0.441
Good level of English language skills	897	0.33	0.470	5592	0.27	0.444	600	0.31	0.461	5889	0.28	0.447
Very good level of English language skills	897	0.29	0.454	5592	0.20	0.403	600	0.22	0.412	5889	0.22	0.411
Being employed	897	0.64	0.480	5592	0.55	0.498	600	0.66	0.473	5889	0.55	0.497
Being in paid employment	897	0.55	0.498	5592	0.47	0.499	600	0.54	0.499	5889	0.48	0.499
Got the first job within two years of arrival	897	0.63	1.886	5592	0.68	2.180	600	0.60	1.930	5889	0.68	2.162

Source: FIMAS waves 4 and 5, own elaboration.

A similar comparison between those who had completed the IY programme and those who had not indicates that participants were relatively older than non-participants: the former group was aged on average 34 years, whereas non-participants were 31 on average. Among participants, women accounted for 37%, but among non-participants that figure was somewhat higher (41%). Furthermore, the share of those who were married was higher among participants (51%) than among non-participants (45%). Among non-participants, 53% had children, while that was the case for only 48% of participants. However, a greater proportion of participants than non-participants had more than three children. The breakdown by country of origin shows that Syrian refugees accounted for 56% of participants, followed by 12% of Afghans, 17% of Iranians and the rest from other countries. Among non-participants, the share of Syrian refugees was slightly lower, at 53%, and consequently the shares of the other countries were higher. Participants were better educated than non-participants. Some differences also emerge concerning the length of time spent in the country: participants accounted for a higher share of those who had spent longer in the host country – for example, 58% had spent either six or seven years in the country, compared to 51% of non-participants. Though taking the average number of months spent in the host country, non-participants had spent longer (74.29 months vs 72.89 months for participants), suggesting that on average participation in the IY programme may have been more frequent among recent migrants. The data also indicate a clear difference between participants and non-participants in terms of their health: 89% of participants reported being in good health, compared to only 73% of non-participants. Participants reported having a much better command of the German language, though as concerns English language skills the differences were only moderate. Furthermore, a higher share of participants than non-participants reported being employed in either voluntary or paid work: 66% of participants were in employment (paid or voluntary), while the figure was 55% among non-participants. Moreover, 54% of participants were in paid employment, compared to 48% of non-participants. Finally, another interesting difference between participants and non-participants concerns the length of time it took them to find their first job in Austria: while 68% of non-participants got their first job within two years of arrival in Austria, among participants the figure was 60% – i.e. participants in our sample had been less successful in entering the labour market.

4. Methodology

Methodologically, we use matching methods to analyse the causal effects of getting a ‘treatment’ – in our context treatment refers to ‘participation in a specific integration programme’, specifically the Competence Check (KCH) and the Integration Year (IY) – on the probability of being employed. The idea behind this approach is that the difference in outcomes for participants *with* and *without* treatment can be attributed to specific integration programmes.

We define a ‘treatment group’ as one that includes refugees who have participated and successfully completed an integration programme. The ‘control group’ refers to refugees who have neither participated in nor completed such a programme. The treatment indicator D_i takes the value 1 if individual i received treatment and 0 otherwise. Refugees with similar characteristics – both with and without treatment – are compared with respect to their employment outcome. We capture the effects of treatment in terms of average gains from treatment for those who actually received treatment. In this respect, the average treatment effect on the treated (ATT) is defined as follows:

$$\begin{aligned} ATT &= E(Y_1 - Y_0 \mid D = 1) \\ &= E(Y_1 \mid D = 1) - E(Y_0 \mid D = 0) \end{aligned}$$

where Y_1 and Y_0 are the outcomes ‘with’ and ‘without’ treatment, respectively. In our case, the outcome is the probability of being employed. More specifically, the probability of individual i being employed ‘with’ and ‘without’ treatment is estimated through discrete choice modelling as follows:

$$P_k(EMP = 1 \mid X) = \Phi(x_{it}, y_{it-1}, Y_t), \quad (1)$$

where P_k refers to the probability of being employed (both paid and voluntary employment included) with treatment ($k = 1$) or without treatment ($k = 0$) and Φ is the normal cumulative distribution function.

We can also define the average treatment effects ATE. ATE provides the average treatment effect on the *total population* – i.e. the counter-factual situation in which the total refugee population (in the survey sample) is treated. The ATE is defined as follows:

$$\begin{aligned} ATE &= E(Y_1 - Y_0 \mid X) \\ &= E(Y_1 \mid X) - E(Y_0 \mid X) \end{aligned}$$

One of the fundamental assumptions that need to be satisfied for matching methods to be performed is the so-called *conditional independence assumption*. It requires that both the set of observable covariates (such as individual demographic characteristics, educational attainment, marital status or family characteristics – which we will include in x_{it}) and the set of pre-treatment characteristics (such as educational attainment or training prior to migration, e.g. language skills in English – which we will

include in y_{it-1}) should be unaffected by treatment.³ Furthermore, a number of controls which capture differences across the integration programmes are included in Y_t , such as the location of residence in Austria, German language skills, or the length of stay in Austria determined by the number of years spent in the host country. Another condition that must be considered while evaluating the effects of a given programme is the *common support* or overlap for participants and non-participants: this implies that a common set of characteristics which define the outcome for participants should also be observed for non-participants. To ensure that we have a proper common support or overlap among participants and non-participants, it is important to analyse the density distribution of the propensity score for both participants and non-participants, which we present in Annex B. Another issue that we must consider is the *matching quality*: we must ensure that we are able to balance the distribution of the main covariates for both participants and non-participants. The idea is to check and compare whether there is a substantial difference between treated participants and matched non-participants after matching of the propensity scores. One way of doing this is to assess the balancing properties – such as the standardised bias, as suggested in Rosenbaum and Rubin (1983) – and the variance ratio for treated and control groups before and after matching. A well-balanced and matched sample is assured if the standardised differences are close to 0, or below 0.25, or if the variance ratios are close to 1. We present this in Annex B.

For evaluation of the effectiveness of a given integration programme, the timing is crucial: in the literature this is often referred as the lock-in effect, which is likely to occur if gaining employment is postponed due to participation in such integration programmes (Caliendo and Kopeinig, 2008). Therefore, to avoid such lock-in effects we only consider participants who have completed the integration programmes that we are considering.

³ Another key assumption in this context is the so-called stable unit treatment value assumption (SUTVA), which states that the treatment status of any unit does not affect the potential outcomes of the other units (non-interference).

5. Estimation results

As a first step in the analysis, we must make sure that our matching approach is plausible. We employ a number of steps in choosing the proper matching method and the set of covariates that will affect labour market performance (gaining employment), as well as participation in one of the two integration programmes under consideration. As is standard in the literature, completion of an integration programme is estimated using a logit model. Hence, given the relevant differences in outcomes for various subgroups, we first estimate the outcome of gaining employment and further differentiate by gender and the integration programme. The estimation results are presented in Table A.1 and Table A.2 in the Annex. Columns (1)-(3) of Table A.1 show the probability of completing the KCH integration programme for the total sample, as well as separately for men and for women. Columns (4)-(6) show the findings for the IY programme, again for the total sample and broken down by gender.

The estimation results show that, for most of the covariates, the effects seem to have the same sign for both women and men, though the size of the coefficient and the level of significance do differ between men and women and from programme to programme. For example, men in the age group 25-34 are more likely than women in the same age group to complete the KCH, while the opposite is true of older age cohorts. This is likely because of the greater involvement of women in childcare, particularly in the age group 25-34. The results for KCH suggest that men have a higher probability of completing the programme than women, whereas for IY no significant gender differences were detected. Being married or having children show less robust results, though men who have two children or more are more likely than women to have completed the KCH. By contrast, both men and women with more than two children are less likely to have completed the IY (though the effect is greater among women) than those with fewer children. As concerns education, the findings indicate that persons with medium and high levels of education are more likely to have completed the KCH than those with a low level of education; in terms of size this effect is higher among men than among women. However, if we look at IY, we find the opposite is the case: here the findings show positive and significant effects for women, but not for men. The findings about the country of origin of refugees suggest that women from Syria are less likely to complete KCH than are women from other countries of origin, while women from Iran are the most likely. With respect to men, we find that those from Afghanistan and Iran are more likely to complete KCH, and in terms of magnitude the effect would seem to be greater among men from Iran. When it comes to IY, the results show that completion of IY is less likely among men from Syria, Afghanistan and Iran than from other countries, but the effect is more pronounced among Iranians. Therefore, judging by these two integration programmes there would seem to be considerable differences in terms of the completion of KCH and IY according to the country of origin of migrants. Being in good health seems to matter for the completion of these integration programmes, with the effect higher for men than for women. German language skills are relevant for the completion of either of the integration programmes, and the effect is much stronger for women than for men. The results also indicate that those refugees who have spent longer in the country are more likely to have completed an integration programme, particularly KCH. As for IY, we find that among women this is especially true of those who have spent between four and seven years in the country.

The estimation results in Table A.2 clearly indicate that KCH is positively associated with labour market performance, especially in the case of men. Meanwhile IY seems to play a positive role in gaining employment, especially among women.

Using simple regression models, we are able to establish whether participation in the integration programmes is important and facilitates employment. Through the matching methods, the goal is to find out whether the labour market outcome for a given individual is affected by the completion of such a programme. For estimation of the propensity score of the outcomes, we must choose between different matching methods. As emphasised in the literature, propensity score matching often suffers from imbalances; rather than using random sampling or complete randomisation, a better approach would be to undertake matching using covariates that are close, but not necessarily equal (King and Nielsen, 2019). Especially if the number of covariates is large, it is more difficult to find exact matching, and thus many observations will not be considered in the estimation of propensity scores. Instead, Jann (2017) suggests using multivariate distance matching or fully blocked randomisation. This approach relies on a distance matrix that measures the proximity of covariates in a multivariate space, and leads to lower data imbalance and less model dependence.

Accordingly, after running the balance and common support diagnostics for different subgroups (i.e. gender, age and education) we assess and report the propensity score estimation results and the matching quality for ATE (average treatment effect) and ATT (average treatment effect on the treated) in Tables 2-3 for each integration programme. The difference between these two effects is that ATT captures the average treatment effect on those treated, while ATE captures the average treatment effect on the *total population* – i.e. the counter-factual situation in which the total refugee population (in the survey sample) is treated. The *common support or overlap* for the treated and the control group is ensured for several subgroups across both integration programmes, as observed in Figures B1.1-B1.8 and Figures B2.1-B2.21 in Annex B. Specifically, Figures B1.1-B1.8 show that the density function of the propensity score for the treated and control groups have quite a good overlap assured by automatic bandwidth selection for kernel matching (Jann, 2017). The matching quality is ensured if the balancing properties, such as the standardised bias and the variance ratio of covariates (which we present in Figures B2.1-B2.21), are close to 0 and 1, respectively. As highlighted by Jann (2017), lack of overlap is more important than lack of balance: in the context of balance, a standardised difference above 0.25 implies that there could be model specification issues. The standardised bias and variance ratios presented in Figures B2.1-B2.21 indicate that for different covariates in different subgroups we have some cases where the standardised difference is greater than 0.25. Under such conditions, this could result in the propensity scores and the treatment effects being insignificant. We discuss such differences in more detail when we present the estimation results for different programmes and different sub-samples.

5.1. RESULTS CONCERNING THE IMPACT ON EMPLOYMENT OF COMPLETING THE COMPETENCE CHECK

We first discuss the findings concerning the impact on labour market performance of completing the Competence Check. The results have been obtained by applying multivariate distance matching (MDM).⁴ The estimation results presented in Table 2 show the probabilities of gaining employment with

⁴ The Stata command 'kmatch ipw' which uses inverse probability weighting has been used for the estimation of treatment effects and propensity scores; as suggested by Jann (2017), this provides more robust results.

and without treatment (Y_1 and Y_0 , respectively) and the treatment effects ATE and ATT for completion of the KCH. As highlighted above (footnote 3), the average treatment effect can be calculated if the stable unit treatment value assumption (SUTVA) is satisfied, meaning that the treatment effect on each individual is independent of the treatment effect on other individuals. The estimation results are presented for the total sample, as well as separately for different subgroups broken down by gender (male/female), level of education (low/medium/high), age group (19-24/25-34/35-44/45-65) and, as far as possible, combinations of gender and age group.

As shown in Table 2, the ATE is positive and significant for the total sample, as well as for both men and women, although the effect is larger for women than for men. As such, the probability of gaining employment after completing the KCH increases by 8.5 percentage points for women and by 6.4 percentage points for men, although men in general have a much higher probability of being employed, compared to women (see discussion above). Hence, our findings support the view that although men have a better chance of gaining employment than women, completion of the KCH is more beneficial for women than for men. This is particularly true for ATE: for ATT we find no significant effect of completing the KCH, suggesting that there are no particular differences in outcomes among participants and non-participants with similar characteristics.

The breakdown by level of education also points to some positive effects, especially for those with a low level of education, both as concerns ATE and ATT. By contrast, we find no significant effect on those with a medium or a high level of education. When the results are further broken down by gender, we find that the positive effect on those with a low level of education is mainly driven by women, both as concerns ATE and ATT. There are no significant effects for men. Thus, completing the Competence Check increases the probability of a woman with a low level of education getting a job by 11 percentage points, from 31% to 42%. Hence, our results suggest that completing the KCH may help especially poorly educated women in gaining employment.

When it comes to age, the estimation results for the different age groups indicate that ATT is positive and marginally significant for the age group 25-34, and the breakdown by gender within this age group indicates positive and significant effects for men, but not for women. By contrast, as concerns ATE we find a positive and significant effect for both men and women in the age group 25-34, which suggests that young individuals aged 25-34 may benefit more than younger cohorts aged 19-24 or older cohorts aged 35-44. Also, in this context women seem to benefit more than men, though men have a higher probability of being employed. Interestingly, the older age group 45-65 has positive and significant ATEs for both women and men. This suggests that alongside young refugees, the oldest may benefit from completing an integration programme that helps them evaluate their professional qualifications and improve their skills in line with the labour market needs of the host country.⁵

Overall, the findings regarding the KCH programme, which involves evaluation of the competences and skills of refugees, and which orients and prepares them for the specific requirements of the host country's labour market, indicate that it is particularly beneficial for those groups that have a weaker labour market position, such as women, the relatively young and older age cohorts.

⁵ We should mention, however, that the number of observations for the older age groups in our sample was quite low and the fit of the matching procedures was rather low for this age group (see Figures B1.3 and B1.4 in the Annex); also later for testing the effectiveness of IY, see Figures B1.7 and B1.8.

Table 2 / Estimation results for the effect on employment of completing the Competence Check

	ATE	Y1(ATE)	Y0(ATE)	ATT	Y1(ATT)	Y0(ATT)	N						
Total sample	0.070***	(0.0229)	0.566***	(0.0221)	0.496***	(0.00680)	0.028	(0.0182)	0.570***	(0.0167)	0.543***	(0.0114)	6,255
Females	0.085**	(0.0368)	0.417***	(0.0356)	0.333***	(0.0100)	0.016	(0.0314)	0.399***	(0.0280)	0.383***	(0.0186)	2,549
Males	0.064**	(0.0256)	0.671***	(0.0243)	0.607***	(0.00874)	0.037	(0.0227)	0.662***	(0.0197)	0.625***	(0.0140)	3,706
Low educated	0.084**	(0.0390)	0.535***	(0.0378)	0.450***	(0.0106)	0.069**	(0.0339)	0.549***	(0.0310)	0.480***	(0.0199)	2,447
Medium educated	0.037	(0.0343)	0.552***	(0.0325)	0.515***	(0.0135)	0.038	(0.0341)	0.589***	(0.0303)	0.551***	(0.0227)	1,640
High educated	0.036	(0.0315)	0.596***	(0.0292)	0.560***	(0.0136)	-0.002	(0.0308)	0.594***	(0.0278)	0.596***	(0.0199)	1,603
Low educated females	0.116***	(0.0438)	0.421***	(0.0412)	0.305***	(0.0154)	0.105*	(0.0565)	0.386***	(0.0519)	0.282***	(0.0297)	1,016
Low educated males	0.059	(0.0429)	0.620***	(0.0408)	0.561***	(0.0141)	0.057	(0.0436)	0.633***	(0.0371)	0.577***	(0.0265)	1,431
Age: 19-24	0.038	(0.0444)	0.471***	(0.0428)	0.434***	(0.0132)	0.036	(0.0418)	0.458***	(0.0385)	0.422***	(0.0237)	1,573
Age: 25-34	0.057	(0.0356)	0.611***	(0.0342)	0.554***	(0.0120)	0.047*	(0.0286)	0.652***	(0.0255)	0.605***	(0.0191)	2,055
Age: 35-44	0.052	(0.0412)	0.606***	(0.0394)	0.554***	(0.0136)	-0.014	(0.0357)	0.574***	(0.0308)	0.588***	(0.0229)	1,592
Age: 25-34 & female	0.128**	(0.0592)	0.468***	(0.0562)	0.340***	(0.0189)	-0.003	(0.0580)	0.402***	(0.0512)	0.405***	(0.0346)	743
Age: 25-34 & male	0.077**	(0.0349)	0.753***	(0.0322)	0.676***	(0.0146)	0.068**	(0.0334)	0.742***	(0.0273)	0.674***	(0.0227)	1,312
Age: 45-65	0.180***	(0.0543)	0.631***	(0.0510)	0.451***	(0.0204)	-0.028	(0.0584)	0.474***	(0.0513)	0.502***	(0.0382)	683
Age: 45-65 & female	0.256**	(0.112)	0.584***	(0.104)	0.328***	(0.0373)	0.018	(0.0989)	0.421***	(0.0803)	0.403***	(0.0661)	245
Age: 45-65 & male	0.200***	(0.0695)	0.711***	(0.0649)	0.511***	(0.0252)	-0.048	(0.0727)	0.509***	(0.0663)	0.557***	(0.0512)	438

Note: ATE refers to the average treatment effect, ATT to the average effect on the treated; Y1 and Y0 to the probability of being in employment with and without treatment, respectively; and N to the (sub)sample size. Standard errors in parentheses, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

5.2. RESULTS CONCERNING THE IMPACT ON EMPLOYMENT OF COMPLETING THE INTEGRATION YEAR

The propensity score results reported in Table 3 below point to positive treatment effects, both as concerns ATE and ATT. Specifically, the estimation results for the total sample, as well as separately for men and women, show that the probability of obtaining employment is overall positively affected by the completion of the IY. However, the breakdown then shows that this is true for women, but not for men. Specifically, the ATE and ATT for women indicate that their chances of employment increase by 16 and 11 percentage points, respectively.

As with the KCH, the treatment effects for sub-samples by level of education show that those with a low level of education benefit most, and among those with a low level of education it is women who are the main beneficiaries of the IY.

Estimation (ATT) results by age category indicate that it is especially younger persons in the age cohort 19-24 who benefit most and who are more likely to get a job after completing the IY – 16 percentage points more likely. Though a positive and significant ATT is observed generally, the effect is higher for women, who benefit from a 20 percentage point increase (as against only a 12 percentage point increase for men). The ATE effects, however, seem to be insignificant for both men and women.

In contrast, the (ATE) results indicate that it is especially the older age cohorts aged 35-44 and 45-65 – both men and women – who are likely to benefit and who experience a greater probability of obtaining employment. It is in the age group 45-65 (both men and women) that the effect is greatest, positive and significant. However, the number of observations for this age group is relatively small and the matching fit is also weak (see also footnote 5).

The results with regard to the IY thus confirm that those who benefit most from the programme tend to be those who are more disadvantaged in the labour market, such as women, the poorly educated and older age cohorts, which tend to have lower employment rates than other subgroups (but again see footnote 5).

As such these findings suggest that the completion of the Integration Year may serve as a useful support scheme for helping especially women, but also the poorly educated, into employment. Besides, the scheme assists not only the younger age cohort (19-24) which is about to enter the labour market, but also older age cohorts, which need to adjust to and integrate into the new labour market that they encounter in the host country.

Table 3 / Estimation results for the effect on labour market participation of completing the Integration Year

	ATE	Y1(ATE)	Y0(ATE)	ATT	Y1(ATT)	Y0(ATT)	N
Total sample	0.066*** (0.0240)	0.561*** (0.0233)	0.494*** (0.00659)	0.053** (0.0211)	0.583*** (0.0204)	0.530*** (0.0113)	6,255
Females	0.155*** (0.0374)	0.481*** (0.0365)	0.326*** (0.00967)	0.107*** (0.0366)	0.460*** (0.0342)	0.353*** (0.0159)	2,549
Males	0.039 (0.0281)	0.650*** (0.0271)	0.611*** (0.00839)	0.017 (0.0260)	0.654*** (0.0247)	0.637*** (0.0133)	3,706
Low educated	0.133*** (0.0387)	0.580*** (0.0376)	0.447*** (0.0104)	0.147*** (0.0405)	0.625*** (0.0365)	0.478*** (0.0214)	2,447
Medium educated	0.015 (0.0355)	0.534*** (0.0340)	0.519*** (0.0130)	0.013 (0.0374)	0.566*** (0.0368)	0.553*** (0.0209)	1,640
High educated	0.031 (0.0335)	0.588*** (0.0317)	0.558*** (0.0131)	0.017 (0.0357)	0.566*** (0.0354)	0.550*** (0.0211)	1,603
Low educated females	0.229*** (0.0867)	0.522*** (0.0853)	0.293*** (0.0150)	0.325*** (0.0633)	0.594*** (0.0614)	0.268*** (0.0257)	1,016
Low educated males	0.063 (0.0417)	0.625*** (0.0396)	0.562*** (0.0136)	0.038 (0.0506)	0.643*** (0.0453)	0.605*** (0.0259)	1,431
Age: 19-24	0.061 (0.0414)	0.498*** (0.0398)	0.438*** (0.0136)	0.156*** (0.0497)	0.574*** (0.0492)	0.418*** (0.0234)	1,573
Age: 19-24 & female	0.020 (0.0686)	0.341*** (0.0669)	0.321*** (0.0191)	0.199*** (0.0733)	0.533*** (0.0744)	0.335*** (0.0389)	707
Age: 19-24 & male	-0.002 (0.0559)	0.528*** (0.0524)	0.530*** (0.0185)	0.122* (0.0695)	0.607*** (0.0653)	0.485*** (0.0328)	866
Age: 25-34	0.021 (0.0346)	0.582*** (0.0335)	0.561*** (0.0114)	0.009 (0.0338)	0.607*** (0.0340)	0.598*** (0.0193)	2,055
Age: 25-34 & female	0.053 (0.0595)	0.392*** (0.0573)	0.339*** (0.0184)	0.006 (0.0623)	0.368*** (0.0585)	0.362*** (0.0299)	743
Age: 25-34 & male	0.032 (0.0383)	0.721*** (0.0363)	0.689*** (0.0134)	0.007 (0.0405)	0.725*** (0.0380)	0.718*** (0.0190)	1,312
Age: 35-44	0.033 (0.0398)	0.578*** (0.0382)	0.545*** (0.0131)	0.060 (0.0385)	0.633*** (0.0371)	0.573*** (0.0211)	1,592
Age: 35-44 & female	0.215*** (0.0798)	0.588*** (0.0773)	0.373*** (0.0196)	0.102 (0.0743)	0.492*** (0.0641)	0.390*** (0.0345)	664
Age: 35-44 & male	0.063* (0.0379)	0.733*** (0.0344)	0.670*** (0.0163)	0.018 (0.0492)	0.713*** (0.0436)	0.695*** (0.0254)	928
Age: 45-65	0.042 (0.0521)	0.489*** (0.0491)	0.447*** (0.0204)	-0.003 (0.0590)	0.459*** (0.0504)	0.462*** (0.0349)	683
Age: 45-65 & female	0.325*** (0.0972)	0.665*** (0.0959)	0.341*** (0.0341)	0.060 (0.105)	0.441*** (0.0853)	0.381*** (0.0644)	245
Age: 45-65 & male	0.140** (0.0671)	0.644*** (0.0618)	0.504*** (0.0271)	-0.047 (0.0777)	0.469*** (0.0624)	0.516*** (0.0479)	438

Note: ATE refers to the average treatment effect, ATT to the average effect on the treated; Y1 and Y0 to the probability of being in employment with and without treatment, respectively; and N to the (sub)sample size. Standard errors in parentheses, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

6. Main findings and conclusions

The aim of this study has been to evaluate the effect of participation in integration programmes, in terms of participants getting into employment. To this end, we evaluated two specific programmes: the Competence Check (KCH) and the Integration Year (IY). These have been very important in the Austrian context, and were introduced specifically around 2015, when people fleeing Middle Eastern countries led to a refugee crisis in the EU.

We conduct our analysis using a novel survey-based dataset (FIMAS), which includes quite detailed information about refugees from Afghanistan, Iran, Iraq and Syria, covering their socio-demographic characteristics, their educational profile and employment history, and also their participation in active labour market integration schemes. Using the information available from the FIMAS database about the employment history of refugees and their participation in integration programmes, we were able to estimate the effects of such programmes on the probability that the refugees would find employment, both for the total sample and for different subgroups, broken down by gender, age and level of education.

We employed matching methods to evaluate the effects of KCH and IY on employment: specifically, we used multivariate distance matching, which ensures better balancing properties between the control and the treated groups. The estimation of propensity scores for the total sample and for different subgroups produced interesting results, which could have important policy implications, especially as concerns the labour market integration of refugees. We find especially positive effects for women and particularly those with a low level of education; meanwhile the effects for men are less robust across the different levels of education. For most subgroups broken down by age and gender, we also find that women benefit more than men. While younger age cohorts have derived advantage especially from the Integration Year, the oldest age cohorts have benefited from participation in both KCH and IY.

The positive findings concerning the effects of the integration programmes on the employability of women, the poorly educated and older age cohorts suggest that such programmes do work and support especially those groups that are particularly disadvantaged in the labour market and in gaining access to a job. On the other hand, we find no significant results for those with higher levels of education; consequently, we cannot say that these programmes have been addressing the needs of this group. Rather, the programmes seem to work especially well for those in a more vulnerable labour market position. If medium- and high-skilled refugees are to be helped into employment, schemes will have to be tailored to the needs of those subgroups, in line with the requirements of the Austrian labour market.

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Annex A

Table A.1 / Probability of completing the Competence Check (KCH) or the Integration Year (IY)

	Completed KCH Total sample (1)	Completed KCH Females (2)	Completed KCH Males (3)	Completed IY Total sample (4)	Completed IY Females (5)	Completed IY Males (6)
Gender (female=1)	-0.406*** (0.0847)			-0.0949 (0.0970)		
Age group: 25-34	0.779*** (0.122)	0.543* (0.218)	0.872*** (0.152)	0.587*** (0.147)	0.566* (0.251)	0.550** (0.187)
Age group: 35-44	0.884*** (0.150)	1.030*** (0.253)	0.743*** (0.190)	0.701*** (0.176)	0.573* (0.291)	0.695** (0.227)
Age group: 45-54	0.880*** (0.196)	1.143*** (0.320)	0.726** (0.251)	1.099*** (0.212)	1.230*** (0.346)	0.992*** (0.272)
Age group: 55-65	1.135*** (0.317)	1.346** (0.493)	0.929* (0.421)	1.370*** (0.317)	1.337** (0.519)	1.336** (0.410)
Being married (yes=1)	-0.0978 (0.107)	-0.100 (0.163)	-0.0753 (0.147)	-0.111 (0.126)	-0.324* (0.190)	0.00920 (0.173)
Having kids (yes=1)	0.237 (0.152)	0.179 (0.247)	0.233 (0.200)	-0.154 (0.164)	-0.141 (0.264)	-0.153 (0.215)
Have one child (yes=1)	0.274* (0.153)	0.380 (0.232)	0.0655 (0.212)	-0.317* (0.172)	-0.380 (0.265)	-0.336 (0.234)
Have two children (yes=1)	0.169 (0.141)	-0.122 (0.231)	0.367* (0.181)	-0.470** (0.154)	-0.566* (0.248)	-0.419* (0.198)
Medium level of education	0.366*** (0.103)	0.344* (0.179)	0.418** (0.128)	0.263* (0.117)	0.428* (0.199)	0.186 (0.145)
High level of education	0.312** (0.111)	0.252 (0.191)	0.343* (0.139)	0.154 (0.126)	0.459* (0.217)	-0.00314 (0.157)
Origin: Syria	-0.0916 (0.140)	-0.461* (0.233)	0.0996 (0.177)	-0.462*** (0.135)	-0.368 (0.242)	-0.551*** (0.165)
Origin: Afghanistan	0.338* (0.164)	-0.0505 (0.275)	0.593** (0.207)	-0.679*** (0.180)	-0.401 (0.310)	-0.829*** (0.225)
Origin: Iran	0.808*** (0.152)	0.661** (0.242)	0.870*** (0.198)	-0.593*** (0.167)	-0.123 (0.275)	-0.897*** (0.223)
Resides in Vienna	1.027*** (0.0966)	0.607*** (0.162)	1.261*** (0.121)	0.00553 (0.104)	-0.0141 (0.180)	-0.000686 (0.129)
Resides in Upper Austria	0.131 (0.161)	-0.161 (0.276)	0.309 (0.200)	-0.632** (0.197)	-0.544* (0.322)	-0.663** (0.253)
Resides in Lower Austria	-0.200 (0.180)	-0.840** (0.313)	0.157 (0.223)	-0.362* (0.179)	-0.418 (0.286)	-0.308 (0.232)
Resides in Salzburg	-0.352* (0.212)	-0.131 (0.365)	-0.416 (0.262)	-0.0124 (0.181)	0.438 (0.303)	-0.214 (0.228)
Health status: very good	1.045*** (0.138)	0.969*** (0.226)	1.125*** (0.178)	1.058*** (0.157)	0.759** (0.246)	1.290*** (0.211)
Health Status: good	1.208*** (0.134)	1.126*** (0.212)	1.282*** (0.176)	1.104*** (0.151)	0.877*** (0.225)	1.277*** (0.207)
Health Status: satisfactory	1.301*** (0.157)	1.060*** (0.249)	1.510*** (0.205)	1.302*** (0.181)	0.901** (0.283)	1.584*** (0.243)
German language skills: satisfactory	-0.572 (0.444)	1.298 (1.041)	0.253 (0.500)	0.293 (0.417)	-0.295 (0.581)	0.669 (0.622)
German language skills: good	1.146** (0.434)	1.794* (1.030)	0.918* (0.485)	0.809* (0.405)	0.193 (0.556)	1.236* (0.609)
German language skills: very good	1.519*** (0.435)	2.170* (1.031)	1.285** (0.487)	0.871* (0.409)	0.250 (0.562)	1.309* (0.614)
Duration of stay: at least 3 years	0.0959 (0.299)	-0.282 (0.524)	0.441 (0.376)	0.101 (0.340)	-0.289 (0.585)	0.484 (0.426)
Duration of stay: at least 4 years	0.299 (0.235)	0.256 (0.352)	0.428 (0.332)	0.618* (0.245)	0.841* (0.362)	0.410 (0.375)
Duration of stay: at least 5 years	0.622*** (0.166)	0.750** (0.277)	0.572** (0.211)	0.381* (0.193)	0.842** (0.315)	0.0394 (0.259)
Duration of stay: at least 6 years	0.640*** (0.151)	0.860** (0.268)	0.543** (0.185)	0.397* (0.173)	0.730* (0.311)	0.265 (0.210)
Duration of stay: at least 7 years	0.636*** (0.152)	0.713** (0.264)	0.618** (0.189)	0.507** (0.174)	0.678* (0.306)	0.450* (0.213)
Duration of stay: at least 8 years	0.495** (0.166)	0.625* (0.288)	0.400* (0.206)	0.192 (0.200)	-0.436 (0.417)	0.353 (0.235)
Constant	-6.036*** (0.514)	-6.440*** (1.123)	-6.183*** (0.598)	-4.168*** (0.494)	-3.808*** (0.727)	-4.537*** (0.704)
No. of observations	6,255	2,549	3,706	6,255	2,549	3,706
R ²	0.1283	0.1348	0.1365	0.0616	0.0720	0.0707

Note: Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$. Raw coefficients are presented.

Table A.2 / Probability of being employed (OLS estimates)

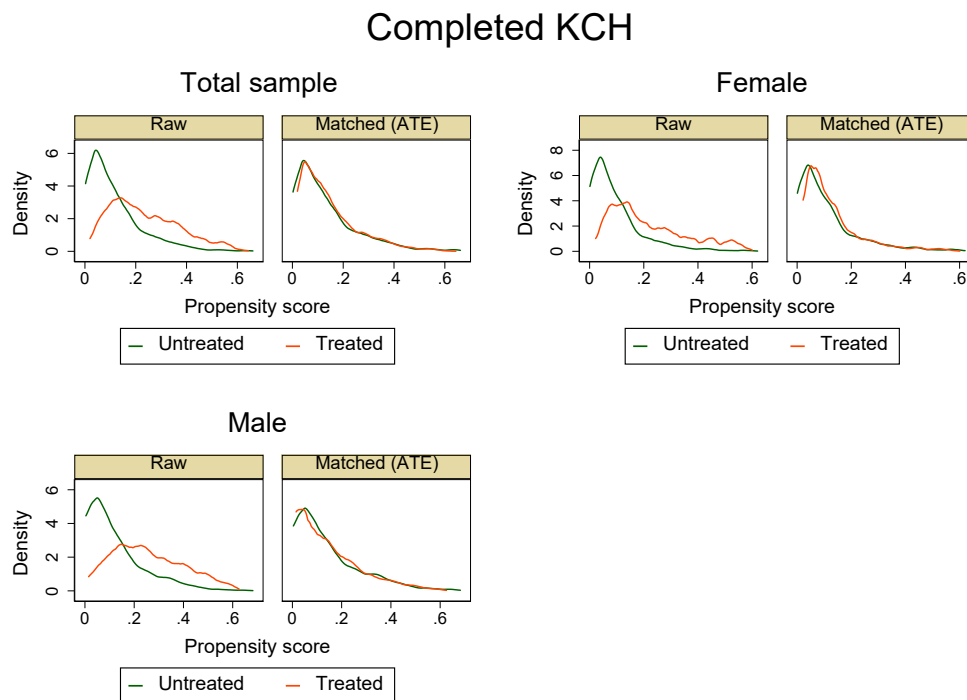
	Being employed Total sample (1)	Being employed Females (2)	Being employed Males (3)	Being employed Total sample (4)	Being employed Females (5)	Being employed Males (6)
Completed KCH	0.0358** (0.0177)	0.0247 (0.0303)	0.0462** (0.0218)			
Completed IY				0.0587*** (0.0208)	0.117*** (0.0354)	0.0214 (0.0254)
Gender (female=1)	-0.242*** (0.0125)			-0.243*** (0.0125)		
Age group: 25-34	0.108*** (0.0180)	0.0951*** (0.0290)	0.121*** (0.0234)	0.108*** (0.0179)	0.0917*** (0.0289)	0.125*** (0.0233)
Age group: 35-44	0.161*** (0.0224)	0.187*** (0.0341)	0.131*** (0.0298)	0.161*** (0.0223)	0.185*** (0.0339)	0.134*** (0.0297)
Age group: 45-65	0.0909*** (0.0281)	0.190*** (0.0428)	0.00480 (0.0369)	0.0890*** (0.0280)	0.182*** (0.0425)	0.00709 (0.0369)
Being married (yes=1)	0.00483 (0.0164)	-0.0285 (0.0239)	0.0268 (0.0226)	0.00493 (0.0164)	-0.0259 (0.0239)	0.0263 (0.0226)
Having children (yes=1)	0.151*** (0.0221)	0.213*** (0.0337)	0.0916*** (0.0291)	0.153*** (0.0220)	0.215*** (0.0336)	0.0931*** (0.0291)
Having one child (yes=1)	0.0645*** (0.0226)	0.0525 (0.0323)	0.0905*** (0.0314)	0.0673*** (0.0225)	0.0572* (0.0322)	0.0915*** (0.0314)
Having two children (yes=1)	0.0750*** (0.0201)	0.0952*** (0.0298)	0.0609** (0.0271)	0.0779*** (0.0202)	0.0996*** (0.0298)	0.0636** (0.0271)
Medium level of education	0.0271* (0.0151)	0.0219 (0.0233)	0.0343* (0.0196)	0.0272* (0.0151)	0.0190 (0.0233)	0.0361* (0.0196)
High level of education	0.0474*** (0.0167)	0.0685** (0.0270)	0.0358* (0.0213)	0.0478*** (0.0167)	0.0650** (0.0269)	0.0377* (0.0213)
Origin: Syria	-0.00156 (0.0202)	-0.0223 (0.0322)	0.0127 (0.0257)	0.000723 (0.0203)	-0.0198 (0.0320)	0.0144 (0.0258)
Origin: Afghanistan	0.0730*** (0.0240)	0.0318 (0.0374)	0.0969*** (0.0309)	0.0775*** (0.0240)	0.0349 (0.0372)	0.101*** (0.0310)
Origin: Iran	0.0389 (0.0240)	0.0114 (0.0369)	0.0676** (0.0313)	0.0458* (0.0239)	0.0149 (0.0367)	0.0745** (0.0312)
Resides in Vienna	-0.149*** (0.0141)	-0.0891*** (0.0225)	-0.190*** (0.0182)	-0.145*** (0.0140)	-0.0874*** (0.0224)	-0.183*** (0.0179)
Resides in Upper Austria	0.0473** (0.0218)	0.124*** (0.0354)	-0.00759 (0.0273)	0.0502** (0.0218)	0.128*** (0.0353)	-0.00534 (0.0273)
Resides in Lower Austria	-0.0150 (0.0227)	0.0481 (0.0342)	-0.0497* (0.0300)	-0.0139 (0.0227)	0.0503 (0.0339)	-0.0487 (0.0301)
Resides in Salzburg	0.0660*** (0.0243)	0.178*** (0.0439)	0.0114 (0.0286)	0.0653*** (0.0244)	0.174*** (0.0444)	0.0105 (0.0286)
Health status: very good	0.0520*** (0.0163)	0.0425* (0.0255)	0.0569*** (0.0212)	0.0511*** (0.0163)	0.0392 (0.0254)	0.0592*** (0.0212)
Health status: good	0.0492*** (0.0156)	0.0411* (0.0234)	0.0492** (0.0208)	0.0486*** (0.0156)	0.0367 (0.0233)	0.0525** (0.0208)
Health status: satisfactory	0.0142 (0.0218)	0.0349 (0.0322)	-0.00812 (0.0293)	0.0132 (0.0217)	0.0305 (0.0321)	-0.00381 (0.0293)
German language skills: very good	0.155*** (0.0385)	0.0937* (0.0490)	0.186*** (0.0551)	0.155*** (0.0385)	0.0965** (0.0482)	0.186*** (0.0551)
German language skills: good	0.232*** (0.0375)	0.175*** (0.0482)	0.258*** (0.0537)	0.231*** (0.0375)	0.175*** (0.0474)	0.261*** (0.0537)
German language skills: satisfactory	0.272*** (0.0382)	0.255*** (0.0493)	0.270*** (0.0546)	0.273*** (0.0381)	0.255*** (0.0484)	0.274*** (0.0545)
Duration of stay: at least 3 years	-0.0869** (0.0343)	-0.115*** (0.0446)	-0.0953* (0.0552)	-0.0868** (0.0343)	-0.114** (0.0446)	-0.0942* (0.0552)
Duration of stay: at least 4 years	0.00561 (0.0302)	-0.0388 (0.0396)	0.0237 (0.0479)	0.00399 (0.0302)	-0.0452 (0.0395)	0.0250 (0.0479)
Duration of stay: at least 5 years	0.0351 (0.0225)	0.0183 (0.0320)	0.0488 (0.0312)	0.0358 (0.0225)	0.0134 (0.0319)	0.0514* (0.0312)
Duration of stay: at least 6 years	0.0810*** (0.0198)	-0.0153 (0.0308)	0.143*** (0.0256)	0.0815*** (0.0198)	-0.188 (0.0307)	0.145*** (0.0257)
Duration of stay: at least 7 years	0.159*** (0.0204)	0.108*** (0.0312)	0.203*** (0.0267)	0.159*** (0.0204)	0.105*** (0.0312)	0.205*** (0.0267)
Duration of stay: at least 8 years	0.203*** (0.0234)	0.153*** (0.0385)	0.234*** (0.0296)	0.205*** (0.0234)	0.156*** (0.0384)	0.235*** (0.0295)
Constant	0.0711 (0.0515)	-0.137* (0.0706)	0.0680 (0.0699)	0.0635 (0.0514)	-0.142** (0.0701)	0.0560 (0.0696)
No. of observations	6,255	2,549	3,706	6,255	2,549	3,706
R ²	0.169	0.108	0.126	0.170	0.113	0.125

Note: Robust standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01.

Annex B

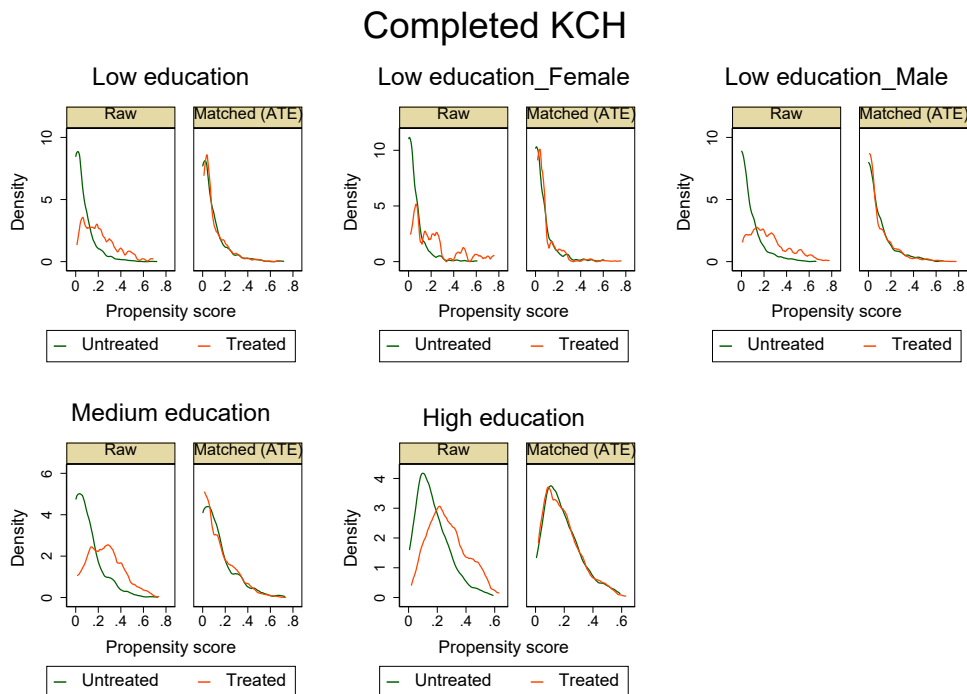
B1 DENSITY BALANCING PLOTS

Figure B1.1 / Density balancing plots, completed Competence Check (KCH), total and by gender



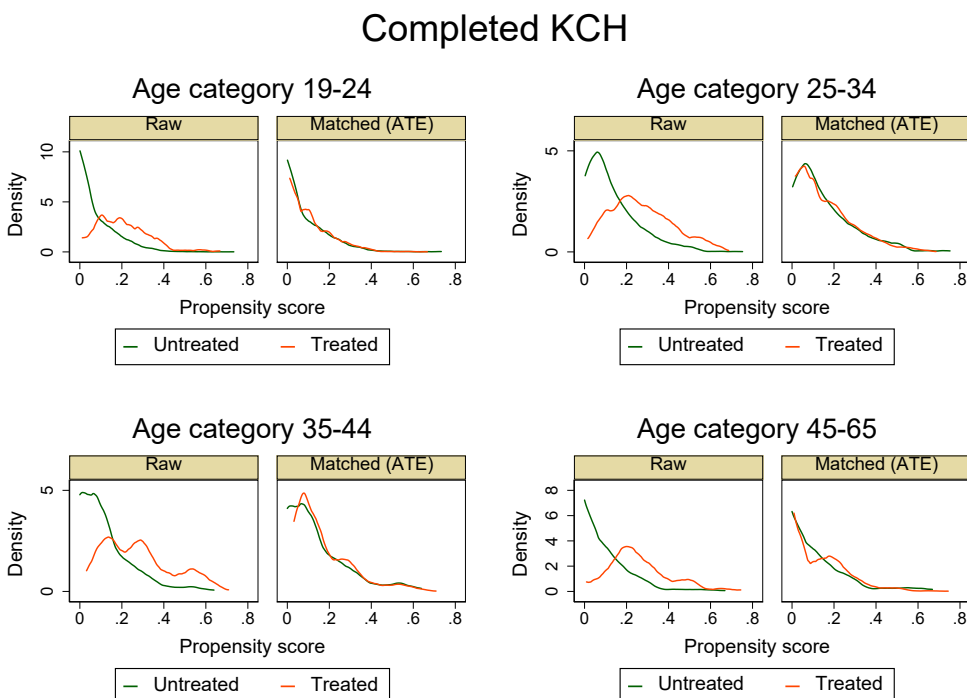
Note: Multivariate distance estimation of propensity score, kmatch ipw command in Stata used for the estimation.

Figure B1.2 / Density balancing plots, completed Competence Check (KCH), breakdown by education and gender



Note: Multivariate distance estimation of propensity score, `kmatch ipw` command in Stata used for the estimation.

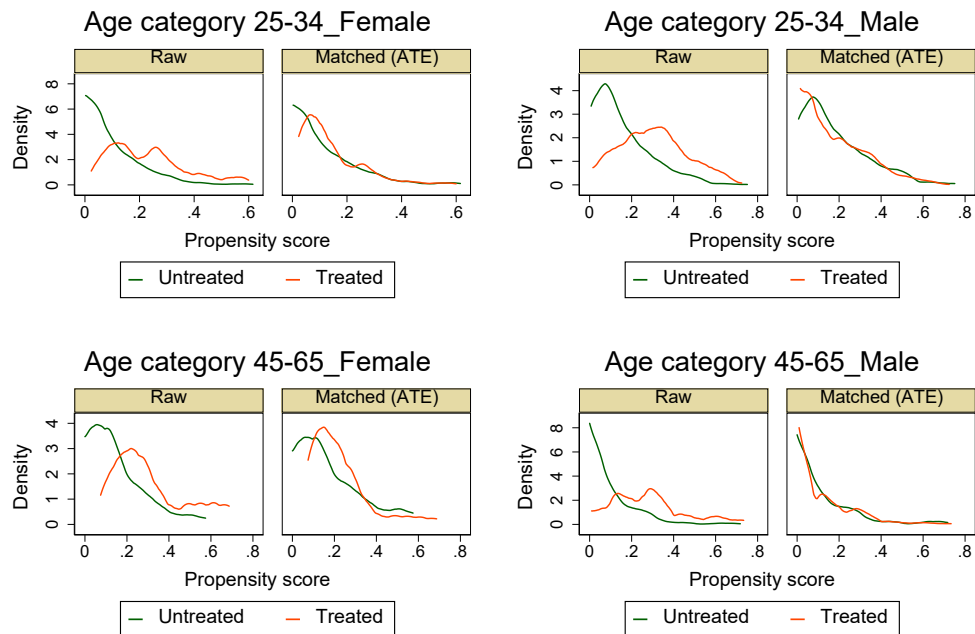
Figure B1.3 / Density plots of propensity scores, completed Competence Check (KCH), breakdown by age categories



Note: Multivariate distance estimation of propensity score, `kmatch ipw` command in Stata used for the estimation.

Figure B1.4 / Density plots of propensity scores, completed Competence Check (KCH), breakdown by age category and gender

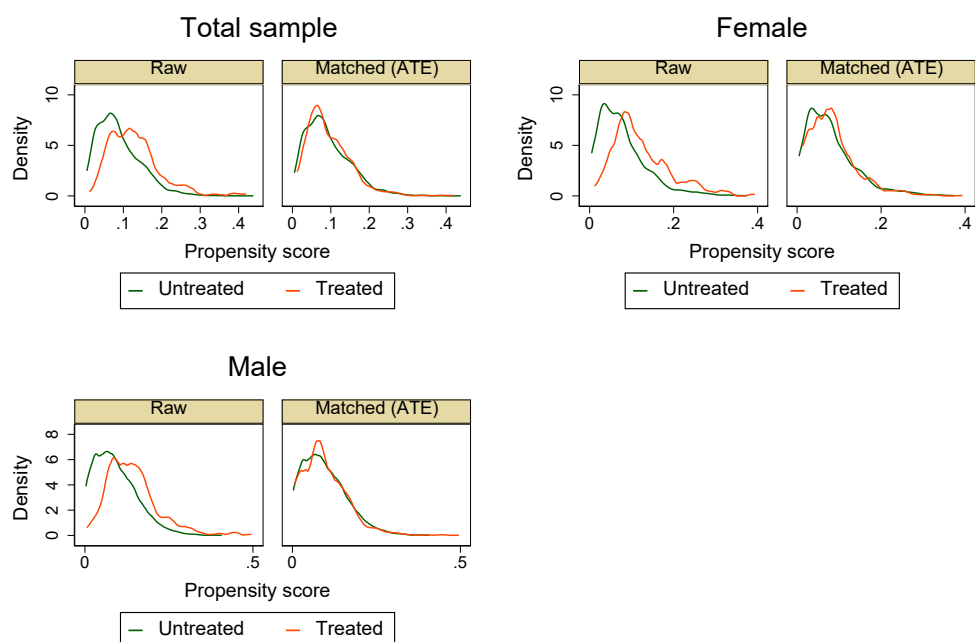
Completed KCH



Note: Multivariate distance estimation of propensity score, `kmatch ipw` command in Stata used for the estimation.

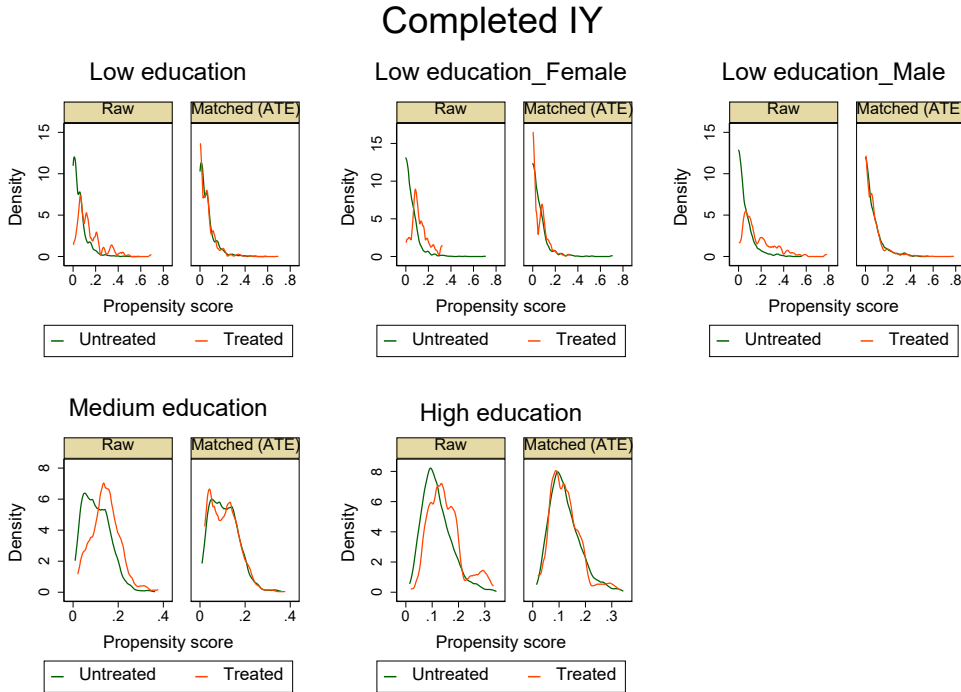
Figure B1.5 / Density plots of propensity scores, completed Integration Year (IY), total and by gender

Completed IY



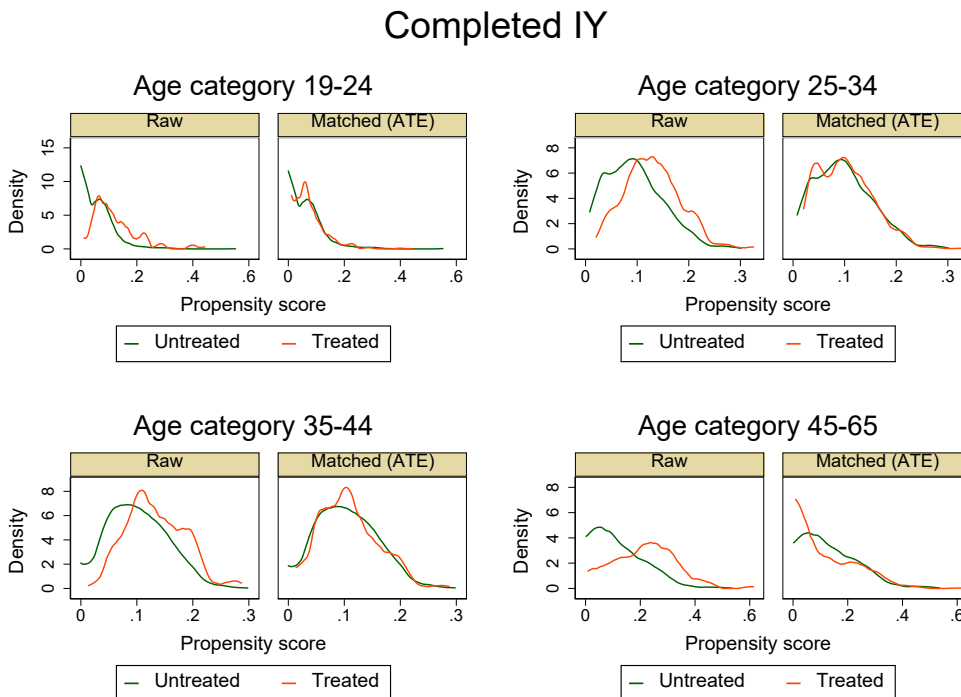
Note: Multivariate distance estimation of propensity score, `kmatch ipw` command in Stata used for the estimation.

Figure B1.6 / Density plots of propensity scores, completed Integration Year (IY), breakdown by gender and education



Note: Multivariate distance estimation of propensity score, kmatch ipw command in Stata used for the estimation.

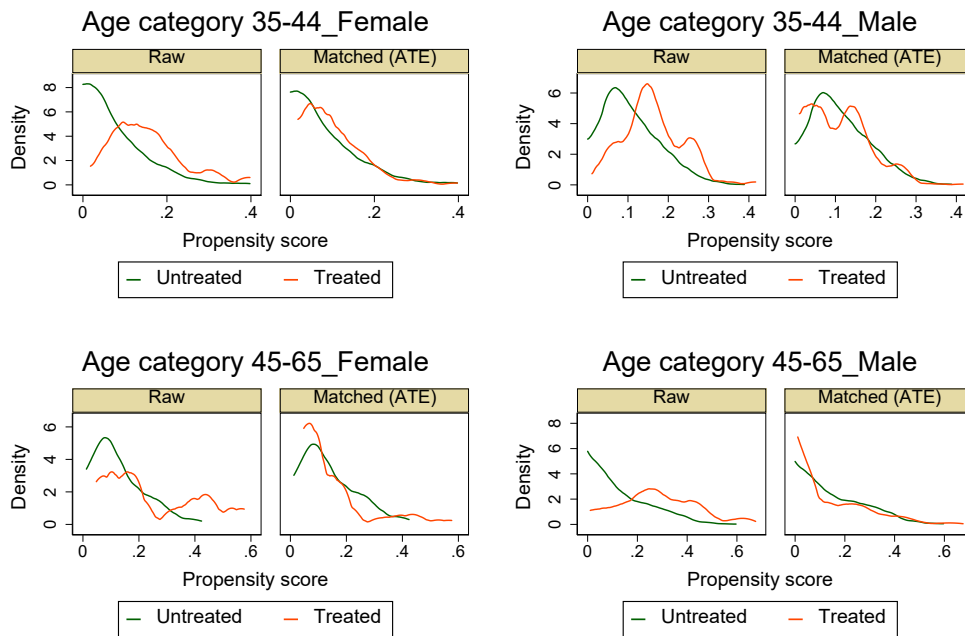
Figure B1.7 / Density plots of propensity scores, completed integration year (IY), breakdown by age category



Note: Multivariate distance estimation of propensity score, kmatch ipw command in Stata used for the estimation.

Figure B1.8 / Density plots of propensity scores, completed Integration Year (IY), breakdown by age category and gender

Completed IY

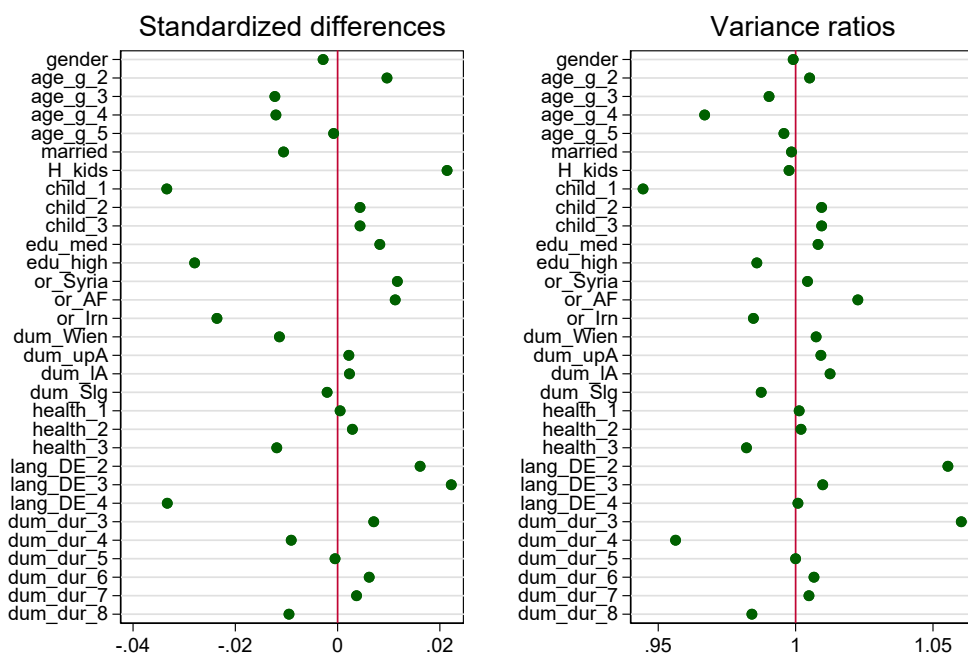


Note: Multivariate distance estimation of propensity score, kmatch ipw command in Stata used for the estimation.

B2 COMMON SUPPORT STATISTICS

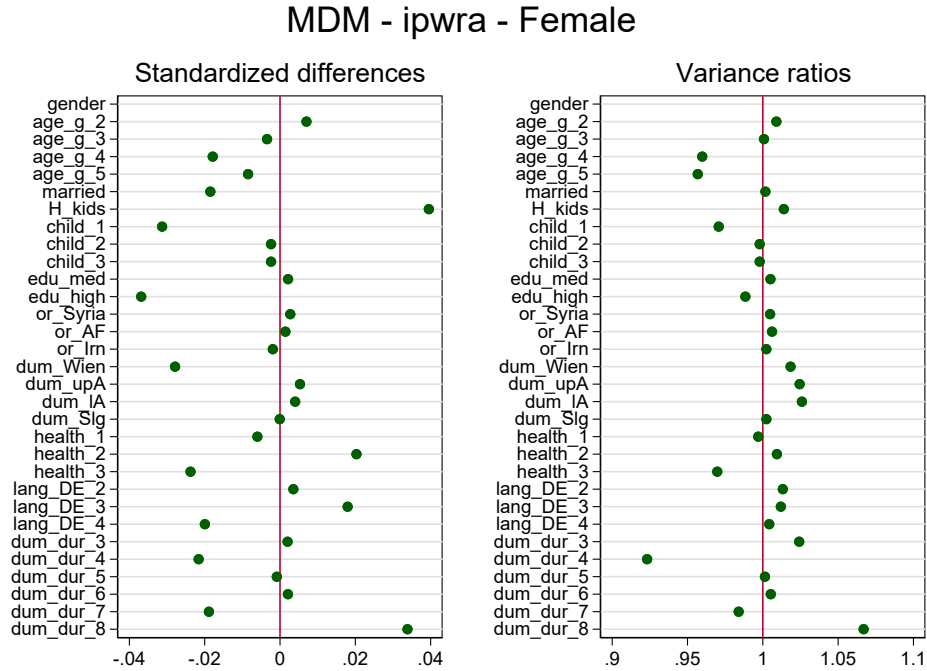
Figure B2.1 / Common support statistics (standardised difference and variance ratio) - Competence Check, total sample

MDM - ipwra - Total sample



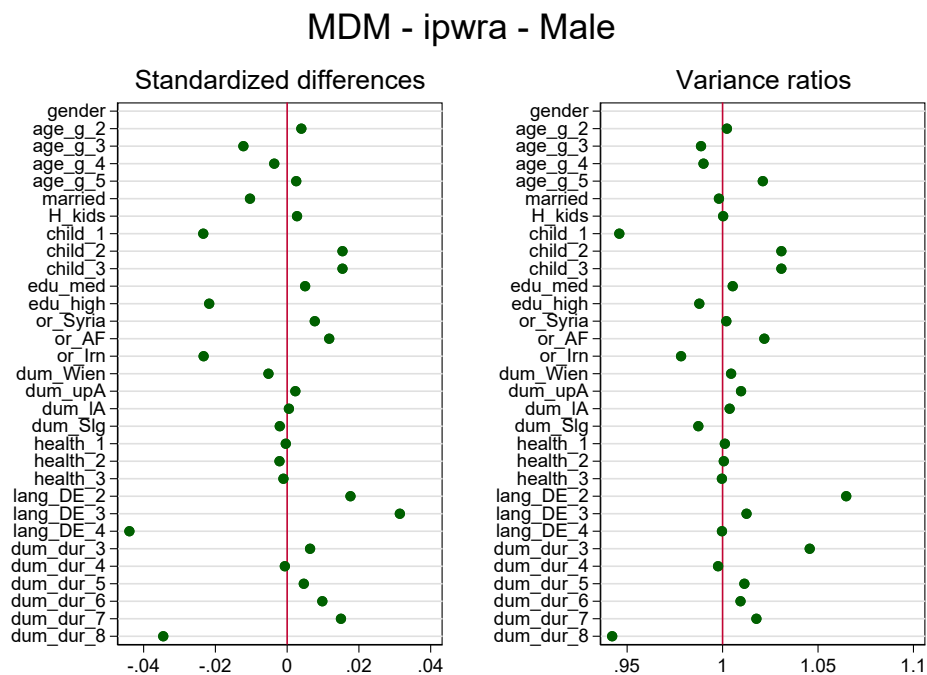
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. Gender = female, age_g_2 = age group 25-34; age_g_3 = age group 35-44; age_g_4 = age group 45-54; age_g_5 = age group 55-65; married = being married; H_kids = have children; Child_1 = have one child; Child_2 = have two children; child_3 = have three or more children; edu_med = have medium level of education; edu_high = have high level of education; or_Syria = originates from Syria; or_AF = originates from Afghanistan; or_Irn = originates from Iran; dum_Wien = resides in Vienna; dum_upA = resides in Upper Austria; dum_IA = resides in Lower Austria; dum_Slg = resides in Salzburg; health_1 = very good health status; health_2 = good health status; health_3 = satisfactory health status; lang_DE_2 = satisfactory level of German language skills; lang_DE_3 = good level of German language skills; lang_DE_4 = very good level of German language skills; dum_dur_3 = at least 3 years of stay in Austria; dum_dur_4 = at least 4 years of stay in Austria; dum_dur_5 = at least 5 years of stay in Austria; dum_dur_6 = at least 6 years of stay in Austria; dum_dur_7 = at least 7 years of stay in Austria; dum_dur_8 = at least 8 years of stay in Austria.

Figure B2.2 / Common support statistics (standardised difference and variance ratio) - Competence Check, females



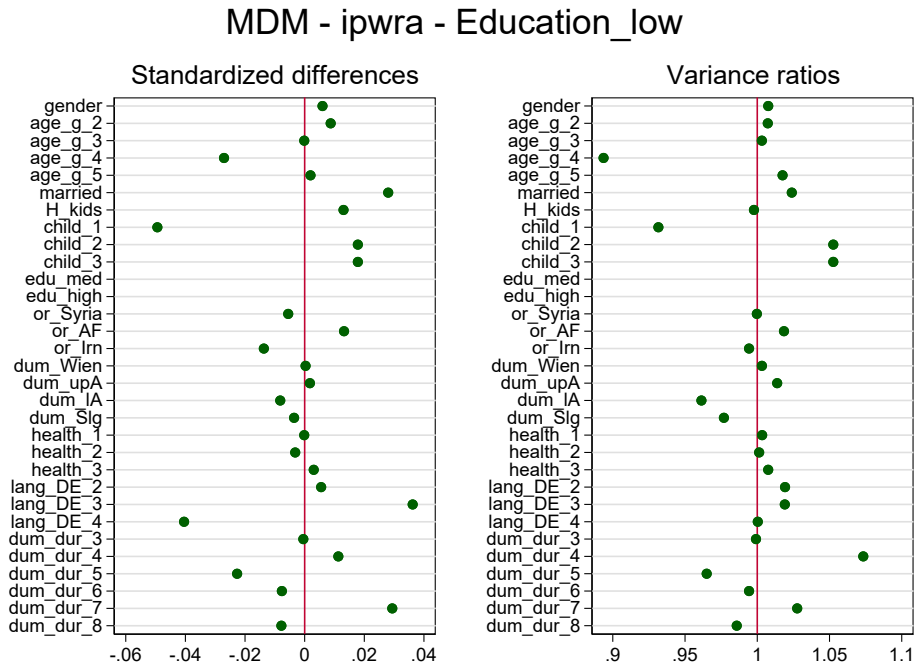
Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

Figure B2.3 / Common support statistics (standardised difference and variance ratio) - Competence Check, males



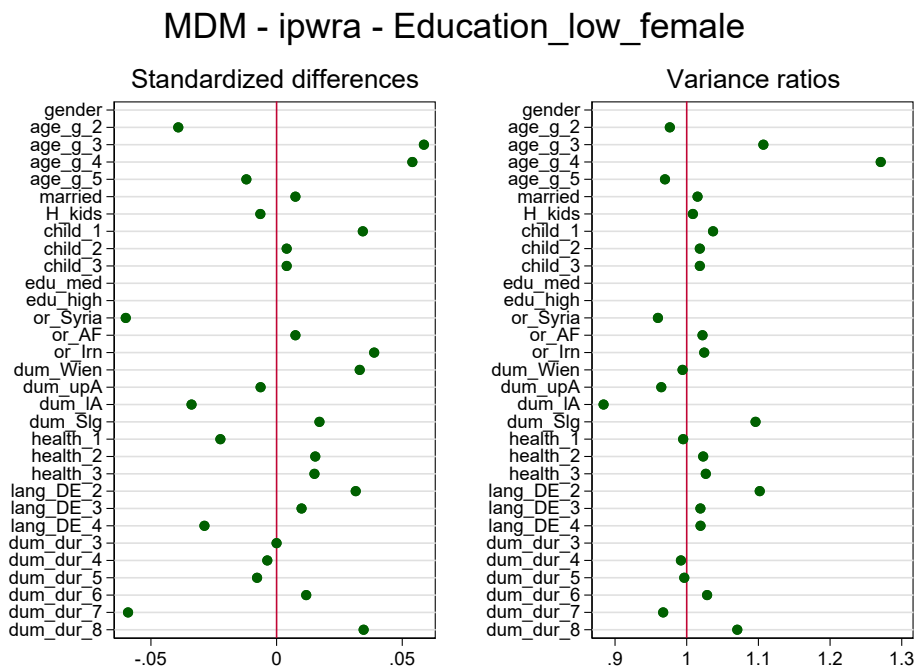
Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

Figure B2.4 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

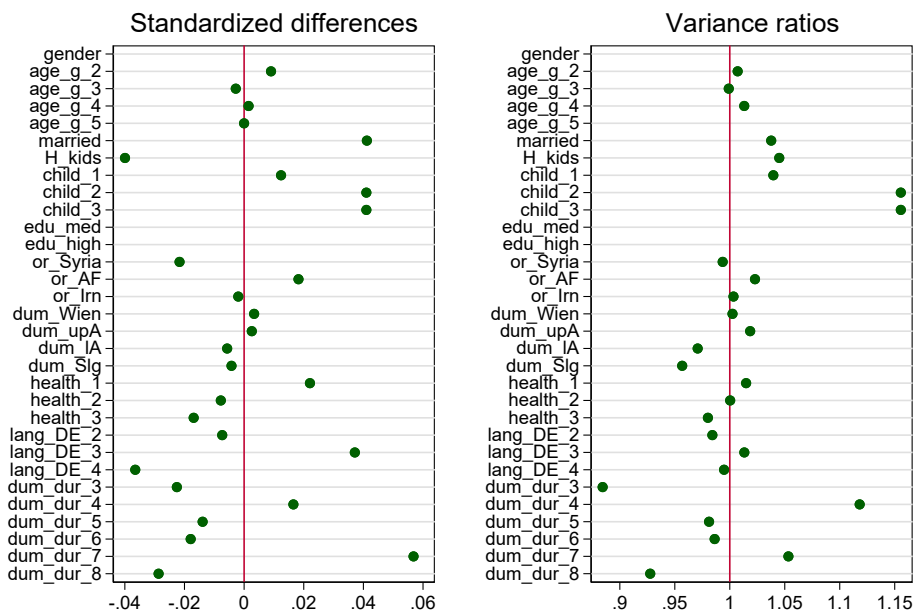
Figure B2.5 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated females



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata.

Figure B2.6 / Common support statistics (standardised difference and variance ratio) - Competence Check, low educated males

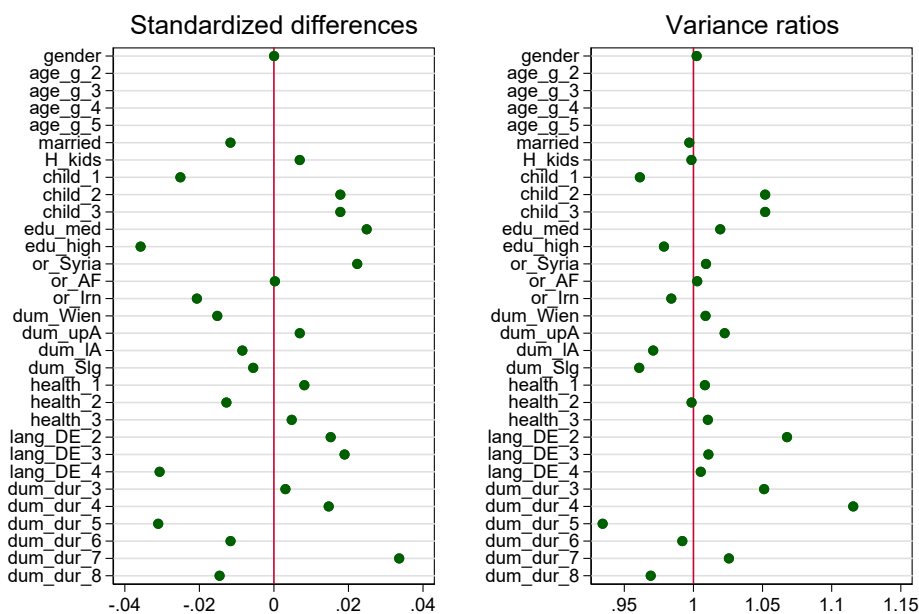
MDM - ipwra - Education_low_male



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

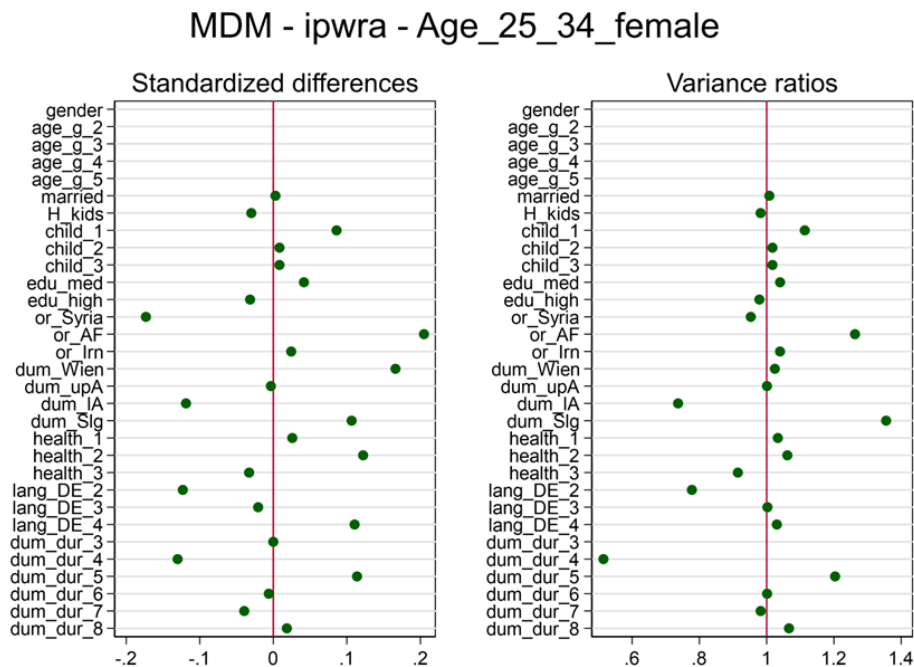
Figure B2.7 / Common support statistics (standardised difference and variance ratio) - Competence Check, age group 25-34

MDM - ipwra - Age_25_34



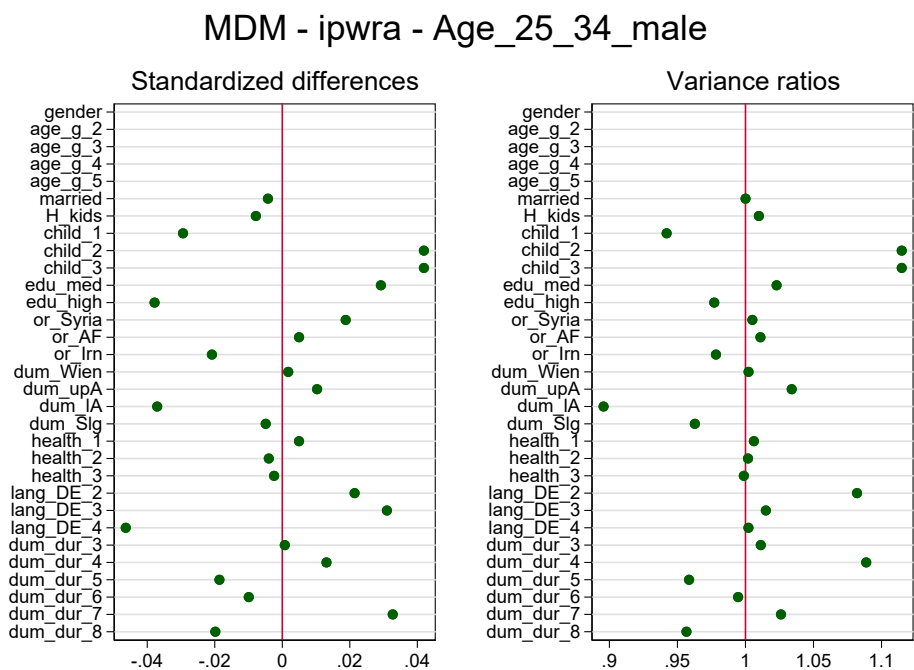
Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

Figure B2.8 / Common support statistics (standardised difference and variance ratio) - Competence Check, females aged 25-34



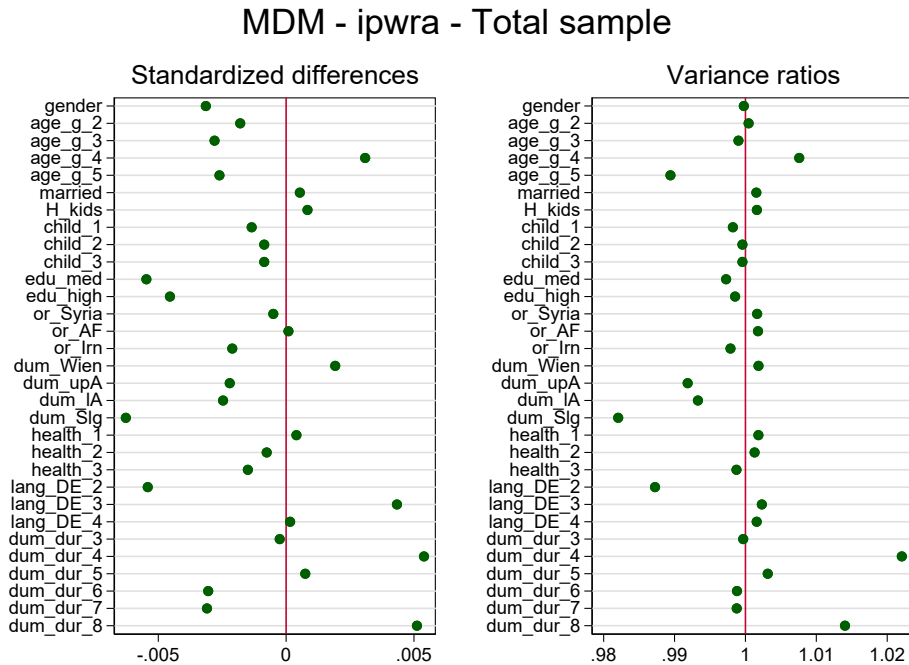
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.9 / Common support statistics (standardised difference and variance ratio) - Competence Check, males aged 25-34



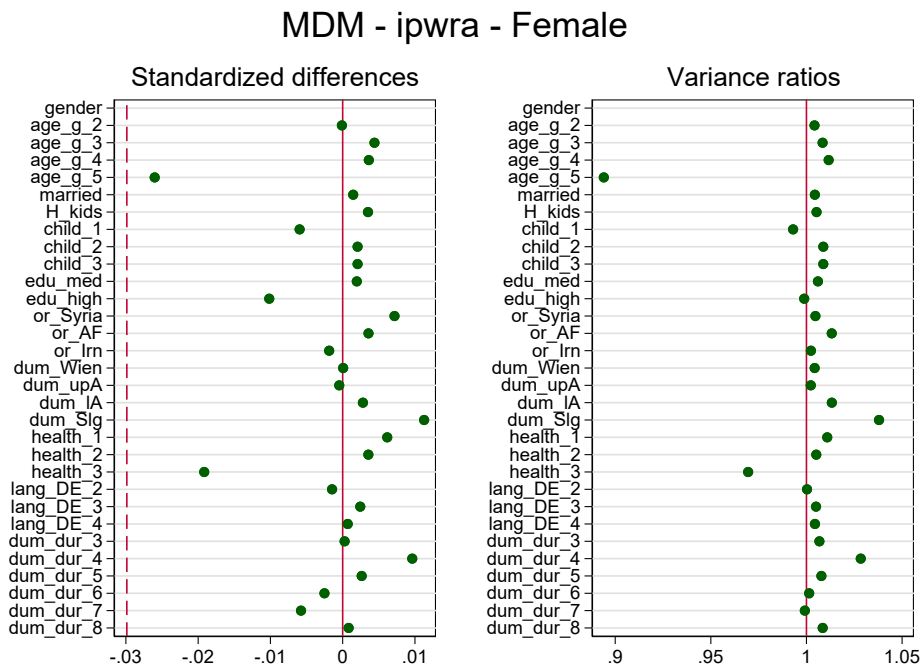
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.10 / Common support statistics (standardised difference and variance ratio) - Integration Year, total sample



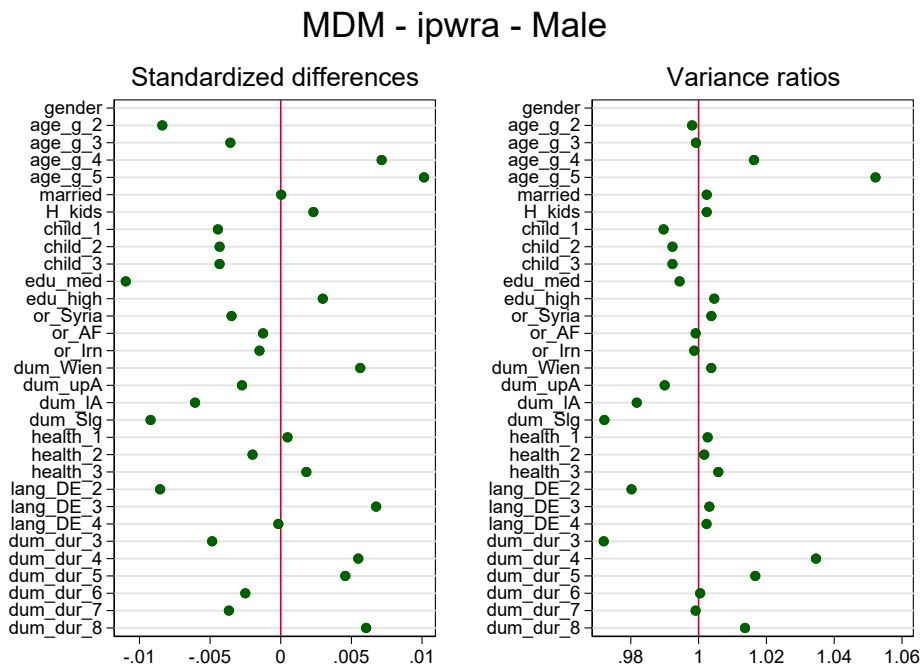
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.11 / Common support statistics (standardised difference and variance ratio) - Integration Year, females



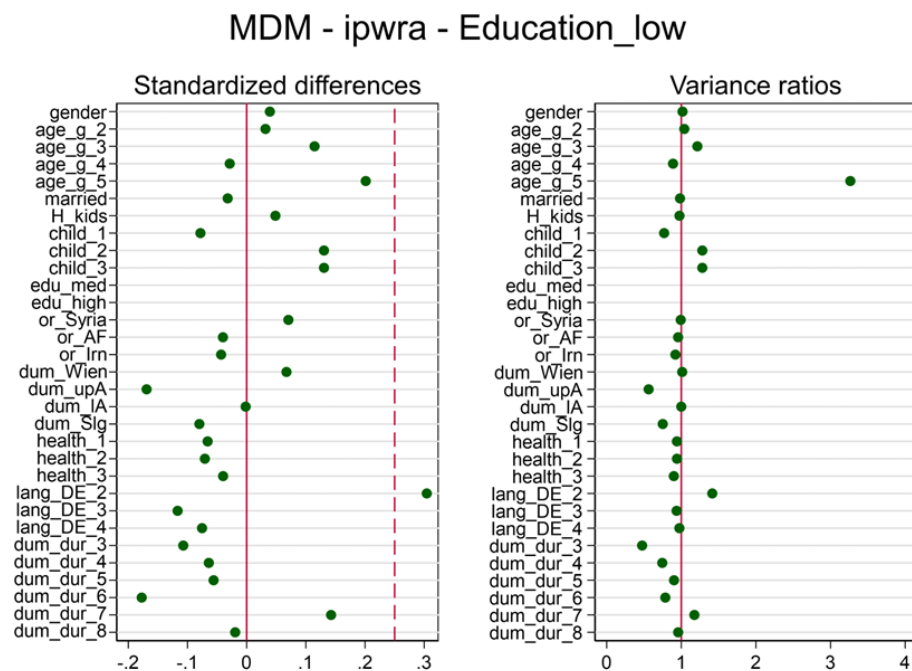
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.12 / Common support statistics (standardised difference and variance ratio) - Integration Year, males



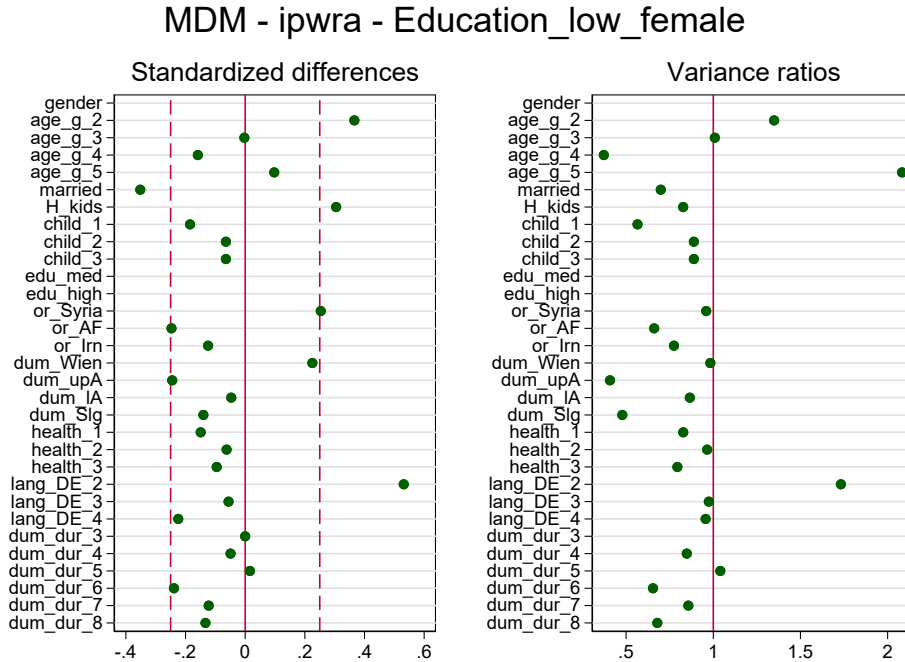
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.13 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated



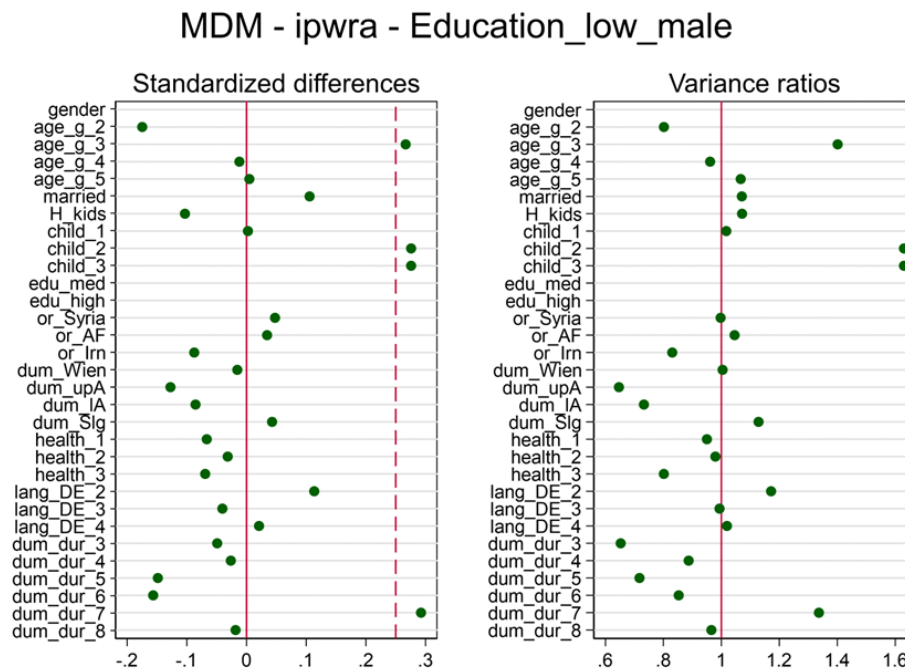
Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.14 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated females



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

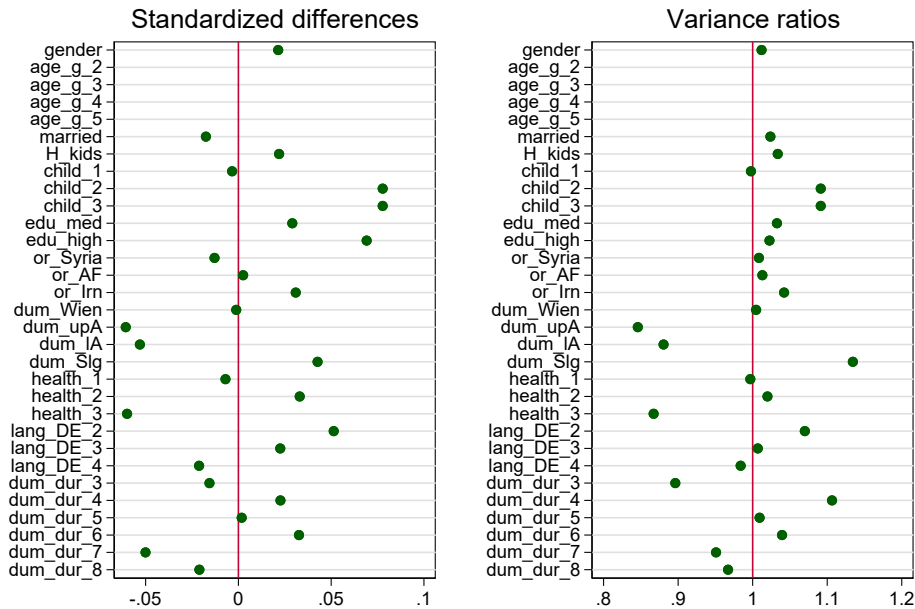
Figure B2.15 / Common support statistics (standardised difference and variance ratio) - Integration Year, low educated males



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipw` command in Stata. See Note under B2.1 for definition of labels.

Figure B2.16 / Common support statistics (standardised difference and variance ratio) - Integration Year, age group 35-44

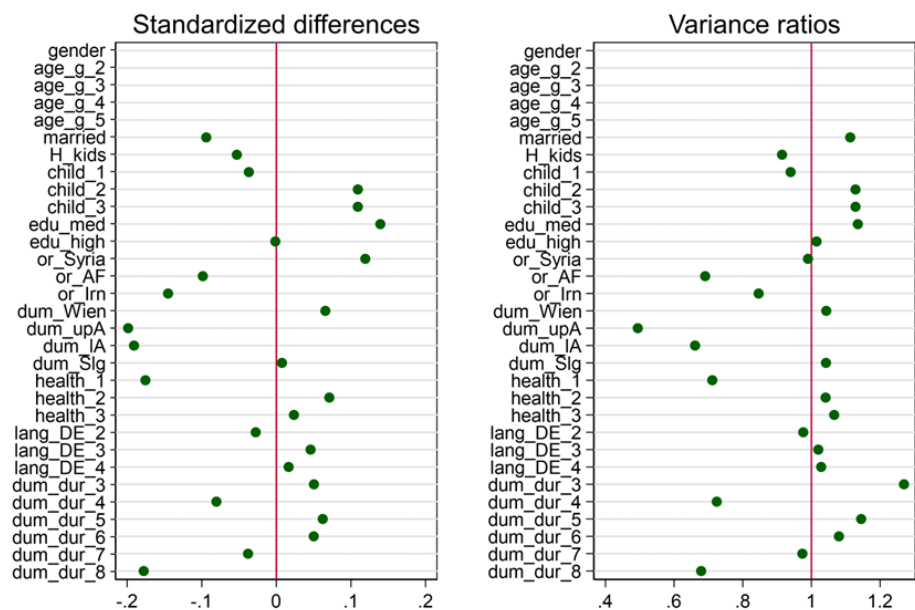
MDM - ipwra - Age_35_44



Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.17 / Common support statistics (standardised difference and variance ratio) - Integration Year, females aged 35-44

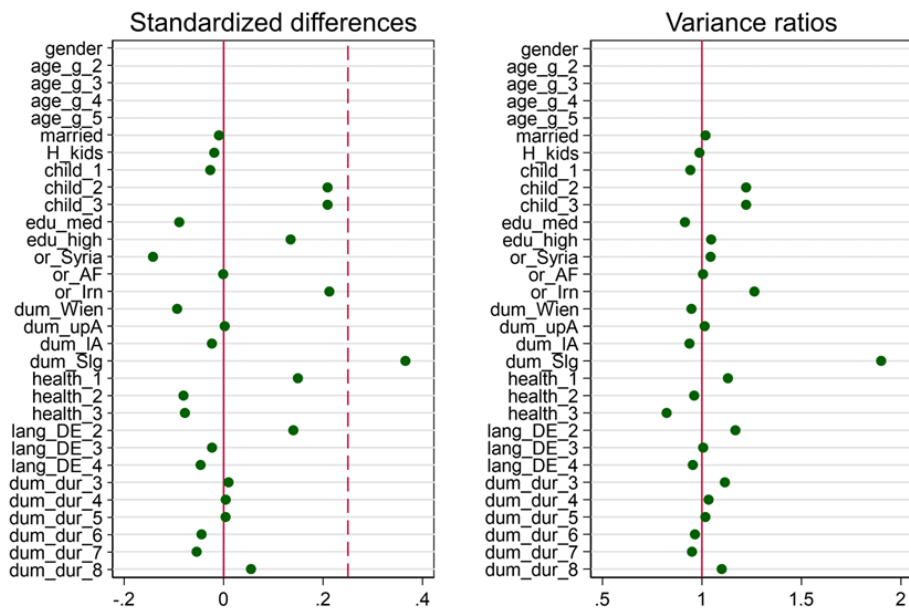
MDM - ipwra - Age_35_44_female



Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.18 / Common support statistics (standardised difference and variance ratio) - Integration Year, males aged 35-44

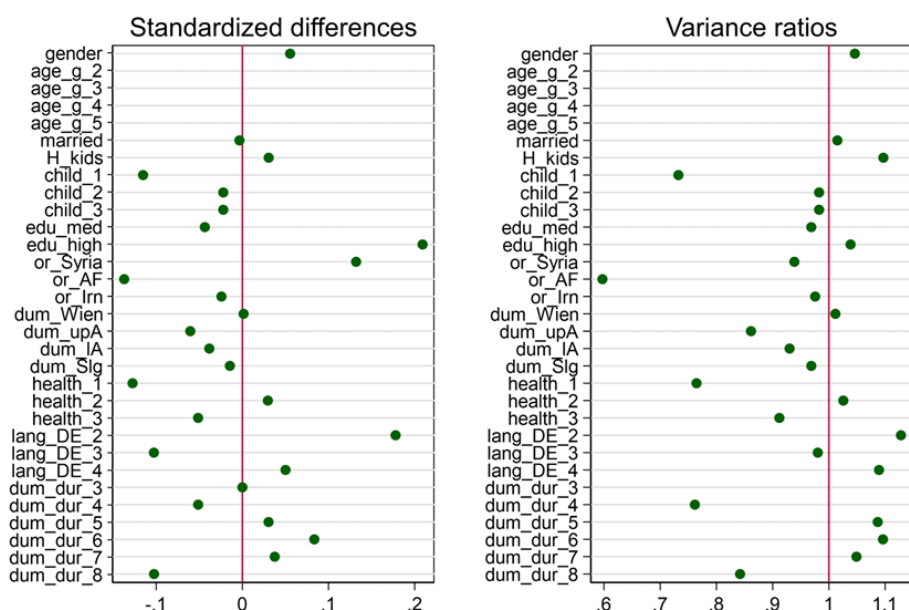
MDM - ipwra - Age_35_44_male



Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipwra` command in Stata. See Note under B2.1 for definition of labels.

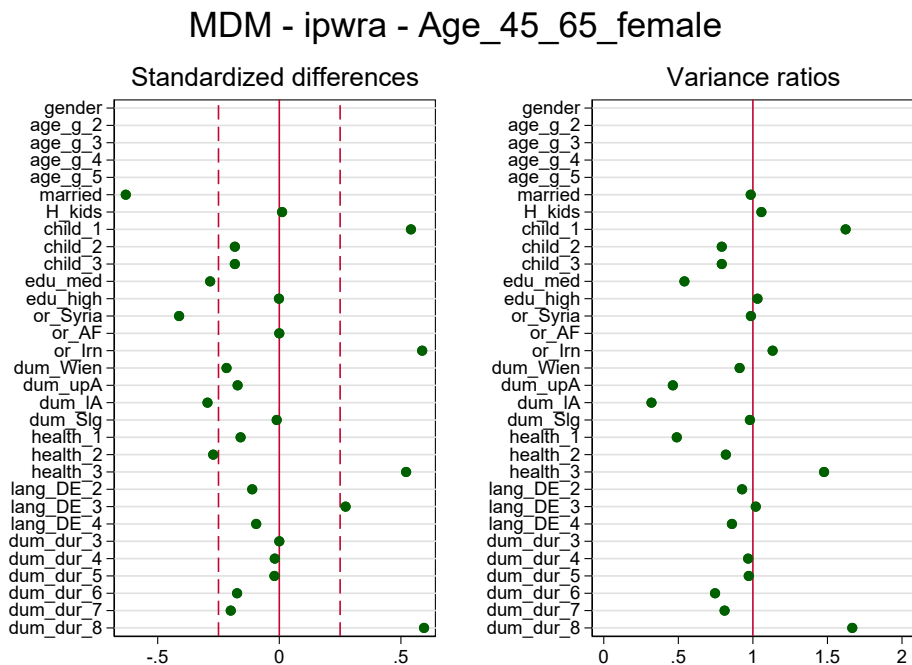
Figure B2.19 / Common support statistics (standardised difference and variance ratio) - Integration Year, age group 45-65

MDM - ipwra - Age_45_65



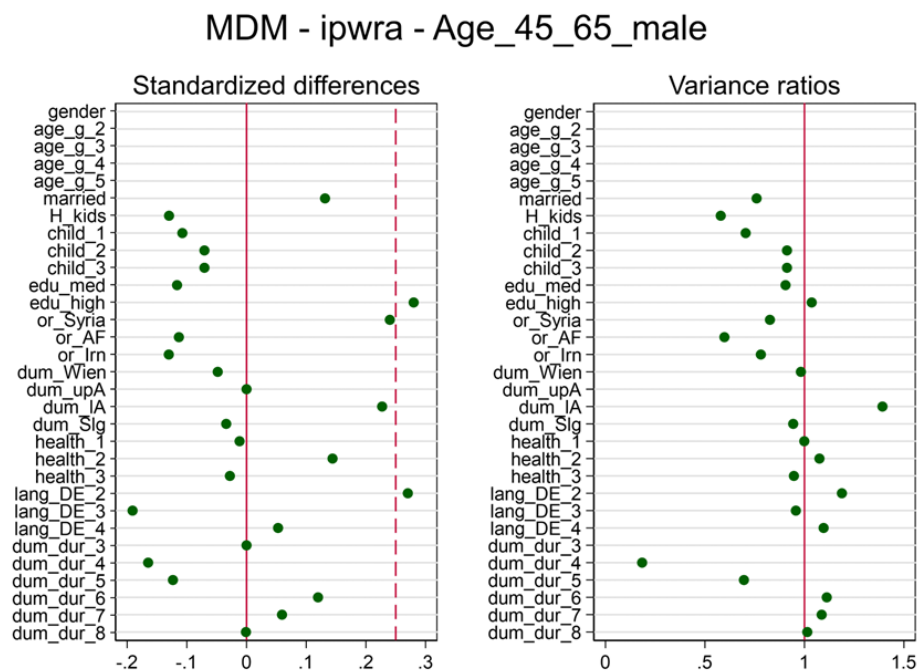
Note: Covariate balance statistics attained after estimating the propensity score by running the `kmatch ipwra` command in Stata. See Note under B2.1 for definition of labels.

Figure B2.20 / Common support statistics (standardised difference and variance ratio) - Integration Year, females aged 45-65



Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

Figure B2.21 / Common support statistics (standardised difference and variance ratio) - Integration Year, males aged 45-65



Note: Covariate balance statistics attained after estimating the propensity score by running the kmatch ipw command in Stata. See Note under B2.1 for definition of labels.

IMPRESSUM

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