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In brief

- The second wave of IAB-BAMF-SOEP Survey of Refugees shows that refugees' German skills improved in 2017 compared to 2016. Despite the fact that some refugees had health issues and lower levels of education at the time of arrival, an increasing number is integrating into the education system and the labor market.

- Although the vast majority of refugees are not affected by mental diseases, there is evidence of a higher likelihood of post-traumatic stress and depressive disorders compared to the German population.

- A third of the refugees reported good or very good German skills in 2017. In 2016 this share was 18 percent. Half of the respondents attended an integration course in 2017 compared to a third in 2016.

- Approximately one tenth of refugees visited schools, vocational training institutions, colleges, and universities in 2017, compared to 6 percent in 2016.

- In 2017 about 20 percent of the refugees who arrived in 2015 were employed. According to employment statistics from the Federal Employment Agency, this proportion had risen to 35 percent by October 2018.

- Female refugees participate much less in the labor market than male refugees. These differences are partly explained by the family constellation.

Second wave of the IAB-BAMF-SOEP Survey

Language skills and employment rate of refugees improving with time

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Asylum seekers migrating to Germany remains a hotly debated topic. The second wave of a longitudinal survey of refugees shows that their integration has progressed significantly, even though some refugees came to Germany in poor health with little formal education. Compared to the previous year, refugees' German skills have improved, as have their participation rates in the workforce, education, and training.

The Institute for Employment Research (Institut für Arbeitsmarkt- und Berufsforschung, IAB), the Research Center of the Federal Office for Migration and Refugees (Forschungszentrum des Bundesamtes für Migration und Flüchtlinge, BAMF-FZ), and the Socio-Economic Panel (Sozio-oeknomische Panel, SOEP) at DIW Berlin have been jointly conducting a representative longitudinal survey of refugees in Germany since 2016.

This survey provides politicians, the public, and the scientific community with a robust set of data for analyses of and information on current social issues. The results of the second wave from survey year 2017 are now available and presented for the first time in this report.

Currently, around 1.5 million people live in Germany whose residence status indicates a refugee background (BAMF 2018).[1] Most of these individuals came to Germany in the last four years, especially since 2015. Using the second wave of the IAB-BAMF-SOEP Survey of Refugees (Box 1, page 2), the most com-

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[1] This includes individuals whose asylum applications have not yet been decided, those who have recognized protection status, and those whose applications for protection have been rejected. For a detailed description of the population, see Brücker et al. (2016a), DIW Economic Bulletin no. 48 (2016) (available online; accessed December 27, 2018; this applies to all other online sources in this report unless stated otherwise).

prehensive household survey of refugees in Germany, the living conditions of this group and the development of their integration into the economy and society can be analyzed. This report analyzes the family structures and health of refugees as well as investments made in language, education, and integration into the labor market. Unless otherwise stated, all results refer to the second half of 2017. For comparison purposes, the results of the 2016 respondents – not just the repeat respondents – are included as well.

Family structures of refugees

73 percent of adult refugees are male and 27 percent are female. The family structures of female and male refugees differ significantly (see Table T1): at the time of questioning, a good 50 percent of men had no partner while only 24 percent of women had no partner. 12 percent of women and 21 percent of men have a partner who is not living in their household. Women more frequently live with children than men: 67 percent of women live with their children in a household, 33 percent with children aged three or below (toddlers). In contrast, 20 percent of men live with their children in a household, 11 percent with toddlers. Just 17 percent of women and 2 percent of men are single parents. These different family structures are reflected in the different paths female and male refugees take when integrating.

Forced migration and health

71 percent of refugees indicate that they fled from war or civil war, 47 percent from political persecution, and 41 percent from forced conscription. Overall, 87 percent of refugees indicate to have fled from war, persecution, or forced conscription.[2] In addition, 56 percent of refugees who were willing to provide this information reported experiencing shipwrecks, violence, sexual abuse, arbitrary imprisonment, and similar traumatic events during their forced migration.[3]

It is clear that experiencing war, persecution, and violence in one's home country as well as the potentially traumatizing experiences during migration – in addition to bottlenecks in health care in countries of origin and transit and Germany – can have an influence on the mental and physical

T1

Family status of refugees and children in the household, by gender
As proportion of individuals aged 18 and above, in percent

Family status and children in the household	Total	Men	Women
Without partner	44	51	24
No children	41	50	15
With children	3	1	9
With toddlers[1]	1	*0*	2
With partner in houshold	36	27	61
No children	9	8	11
With children	27	19	50
With toddlers[1]	15	10	28
With partner outside the household[2]	19	21	12
No children	16	20	5
With children	3	1	8
With toddlers[1]	1	0	3
Other	2	1	3
Total	100	100	100
Observations	5,444	3,293	2,151

[1] Toddlers are defined as children under four years of age.
[2] Partner lives abroad or in an other household in Germany.
Note: All results refer to own children living in the household. All results in italics are based on 10 or fewer observations.
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

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The IAB-BAMF-SOEP Survey of Refugees

The IAB-BAMF-SOEP Survey of Refugees is a longitudinal study of refugees and their household members who moved to Germany in search of asylum.[1] The sample was taken from the Central Register of Foreigners. In the first wave, the target population referred to individuals seeking asylum who arrived in Germany between January 1, 2013, and January 31, 2016, and were registered in the Central Register of Foreigners by June 30, 2016. An increase in the 2017 survey will also take into account refugees seeking asylum who arrived by December 31, 2016 and were registered by January 1, 2017. The total sample included 7,430 adults who were surveyed at least once. Of these people, 4,465 participated in the first wave in 2016; 2,630 of these participants were again surveyed in 2017. Additionally, 2,965 people participated in the study for the first time in 2017. Using statistical weighting procedures, representative statements can be made for the individuals seeking asylum who moved to Germany between January 1, 2013, and December 31, 2016, and their household members. This report excludes the data of 217 people who came to Germany before January 1, 2013, or did not come seeking asylum, and are covered in the survey as household members of refugees. For the survey year 2017, a total of 5,544 observations are available for the analyses, and 4,328 for the year 2016.[2]

[1] The survey is funded by the funds of the budget of the Federal Employment Agency, which is allocated to the research budget of the IAB, and funds from the budget of the Federal Ministry of Education and Research. The Federal Ministry of Labor and Social Affairs has also issued an order to the IAB to carry out analyzes on the basis of the survey, which has partly enabled some of the analyzes in this report. Furthermore, all three participating research institutions contribute to the survey with personnel resources.
[2] The weights used in this report are temporary.

[2] More than one answer is possible as multiple factors can influence the decision to migrate.
[3] Around 30 percent of refugees did not want to answer this question. It can thus be assumed that this group is affected disproportionately high by traumatic events during migration.

health of refugees. These factors can influence their chances of successfully integrating and participating in daily life in Germany in many ways.

Physical health risks for women increase with age

The smallest differences between refugees and the average population in Germany are found in physical health (Box 2). However, health risks increase with age: male refugees report better physical health up until age 34 and a slightly worse state of health at a higher age. The physical health of female refugees, excluding the youngest age group, is worse than that of the female comparison groups in the average population (Table T2).

Higher risk of mental illnesses and post-traumatic stress disorder

Refugees are at a higher risk of developing mental illnesses than the average population: their self-reported psychological well-being is lower in all age groups. There is a significant difference between the sexes: female refugees, like women in the national average, are characterized by having poorer psychological well-being than men. Refugee women who are 35 years or older are also significantly worse off than in the comparable female group in the population on average; the differences correspond to up to 50 percent of a standard deviation. With exception of the youngest age group, the differences are significant.

There is a similar pattern in depression-related symptoms: in addition to the differences between women and men, we see that these symptoms increase significantly with age. Therefore, overall, the psychological well-being of the refugees in the older cohorts is lower and their depression-related symptoms stronger. A comparable trend is not present in the total population.

The risk of post-traumatic stress disorder (PTSD) also increases with age for refugees. This age-related increase in risk is significantly higher for women than men. While around 35 to 40 percent of refugees in the younger age groups are at risk, this proportion rises to well over 50 percent in the older age groups. Female refugees aged 35 and older are particularly vulnerable (Table T2).

T2

Health indicators[1] of refugees and the general population in Germany, by gender and age groups

	Refugees		Population average	
	Men	Women	Men	Women
Physical well-being[2] (normalized index PCS, 50 = population average)				
Age 18–24	59	56 *	56	55
Age 25–34	57	53 *	55	54
Age 35–44	51	50	52	52
Age 45–54	49	45	49	48
Observations	1,452	798	10,967	12,971
Mental well-being[2] (normalized index PCS, 50 = population average)				
Age 18–24	48 *	46	52	48
Age 25–34	48 *	46 *	52	49
Age 35–44	47 *	43 *	51	49
Age 45–54	47 *	42 *	52	50
Observations	1,452	798	10,967	12,971
Depressive symptoms[2] (sumscore of PHQ-4)				
Age 18–24	2,8 *	3,6	2,0	2,7
Age 25–34	3,1 *	3,3 *	2,2	2,3
Age 35–44	3,2 *	4,2 *	2,1	2,4
Age 45–54	4,0 *	4,9 *	2,2	2,5
Observations	1,454	782	11,096	13,181
Risk of post-traumatic stress disorder[3] (in percent)				
Age 18–24	35	41	–	–
Age 25–34	32	42	–	–
Age 35–44	38	56	–	–
Age 45–54	47	69	–	–
Observations	1,435	791	–	–

[1] The health indicators are described in Box 2. [2] The results are from 2016. [3] Risk refers to individuals with a post-traumatic stress index value of over 11. The results are from 2017.
Note: * indicates that the values for the refugees are statistically significantly different (5% level) from the population average.
Source: IAB-BAMF-SOEP Survey of Refugees 2016 and 2017, weighted. © IAB

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Health indicators

The analysis uses the following health indicators based on self-reported assessments and symptoms.

● Based on a questionnaire with health indicators, a sum scale was formed for physical well-being (PCS, coded from 11 to 77) and for mental well-being (MCS, coded from 6 to 73). The scales are standardized in such a way that a higher value corresponds to a higher sense of well-being and 50 to the average value in the German population. Ten points on the scale correspond to one standard deviation (Andersen et al. 2007).

● In addition, a short four-part questionnaire (PHQ-4) on symptoms of depressive disorders and anxiety was used to form a sum index scaled from 0 to 12. The higher the value, the more symptoms were reported (Löwe et al. 2010).

● The Refugee-Health-Screener (RHS-15) (Hollifield et al. 2013), which measures the degree of emotional stress on a scale from 0 to 52, was used for a more precise assessment of psychological stress, with a higher value indicating higher stress. Based on clinical validation studies, a threshold value of 11 indicates that an individual is so emotionally stressed that post-traumatic stress disorder is possible in the long term (Hollifield et al. 2016).

Most health indicators were only collected from the first respondents and the indicator for post-traumatic stress disorder was collected from repeat respondents in 2017. For reasons of comparability, all health indicators reported here are only for the 2,447 refugees who participated in both the first wave in 2016 and the repeat survey in 2017. As a comparison, the values for the average population in Germany in 2016, which were collected by SOEP in the same way as for refugees, were used.

Health risks depend on country of origin and experiences during forced migration

Refugees' mental and physical states vary according to their country of origin (Table T3). Refugees from Afghanistan, Syria, and Iraq have the highest risk of developing PTSD and symptoms of depression. In contrast, refugees from Eritrea and Somalia have a lower-than-average risk.

Refugees who experienced one or more negative events that may cause trauma or psychological distress while coming to Germany have higher risks of developing PTSD and depressive symptoms, especially if they experienced multiple negative events. The same applies for refugees who did not want to answer this section of the survey, possibly due to traumatic experiences.

German language skills

Possessing German language skills is key to successfully integrating into the labor market and education system and participating in all areas of social life. Only a small share of refugees had a strong command of German at the time they arrived in Germany, and the large linguistic distance between German and the native languages of many refugees makes learning the language difficult. Additionally, the educational background of refugees is quite varied: a large share attended secondary or at least middle school, others only elementary school or no school at all, and another share does not understand the Latin alphabet or even their native language's alphabet (Scheible 2018).

Participation in integration courses and other language courses increasing

Helping refugees learn German is of central importance. Almost 75 percent of all respondents surveyed in 2017 participated in or completed at least one language training measure. 50 percent of the refugees surveyed in 2017 had participated or completed[4] an integration course,[5] the most important state-sponsored program for refugee language training (in 2016: 33 percent). A further 9 percent of respondents had participated in or completed an advanced language course that also teaches practical work-related vocabulary (Table T4, page 5).

These courses include the ESF-BAMF language course (funding period: 2014–2020, last course star-

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[4] A course counts as "completed" if the respondent reports that they participated in the course and indicated the course's end date.

[5] Integration courses are available for all immigrants regardless of why they came to Germany and comprise 600 (general integration course), 900 (special course), or 400 (intensive course) class hours in their language section, depending on the course. In addition, there is an orientation course with a further 100 class hours, which teaches refugees about the German legal system, culture, and history. If the language test is not passed, there is the possibility to repeat 300 class hours and take the test again.

T3

Health indicators[1] of refugees, by country of origin and forced migration experiences

| | Well-beeing Normalized index (50 = population average) | | | | Depressive symptoms[2] Sum index (PHQ-4) | | Risk of PTBS[3] in percent | |
| | Physical[2] | | Mental[2] | | | | | |
	Men	Women	Men	Women	Men	Women	Men	Women
Country of origin								
Afghanistan	57	49	46	43	3.7	4.2	59	59
Syria	56	52	48	46	3.0	3.2	31	44
Iraq	55	50	50	45	2.5	3.7	32	37
Eritrea. Somalia	58	55	53	51	1.9	2.2	20	31
Total	56	51	48	45	3.1	3.9	35	50
Negative flight experience								
None	57	51	49	45	2.8	3.7	22	45
One	56	51	48	46	3.1	3.4	44	43
More than one	57	48	46	43	3.6	4.1	41	62
Refusal	55	51	48	45	2.9	4.1	38	54
Observations	1,452	798	1,452	798	1,454	782	1,435	791
Survey year	2016	2016	2016	2016	2016	2016	2017	2017

[1] The health indicators are described in Box 2.
[2] The results are from 2016.
[3] PTSD = post-traumatic stress disorder. Risk refers to individuals with a post-traumatic stress index value of over 11.
Source: IAB-BAMF-SOEP Survey of Refugees 2016 and 2017, weighted. © IAB

ted in 2017) and the „vocational language courses", which have been financed since 2016 by the Federal Ministry of Labour and Social Affairs (BMAS). 12 percent of the 2017 respondents had participated in or completed programs of the Federal Employment Agency (BA) with occupation-specific language support („KompAS"[6], „Perspektiven für Flüchtlinge" (Perspectives for Refugees), „Perspektiven für jugendliche Flüchtlinge" (Perspectives for Adolescent Refugees), and „Perspektiven für weibliche Flüchtlinge" (Perspectives for Female Refugees), or the BA introductory course according to § 421 SGB III). In addition to these nationwide programs, the federal states, local authorities, welfare organizations, volunteers, and other private actors offer numerous language promotion programs which vary greatly in terms of quality, scope, and objective. In 2017 the participation and graduate rate in these other programs was about 51 percent.

Generally, the share of refugees who have participated in or completed a language course increases the longer they have been in Germany. An exception to this are those who moved before 2014 and are unlikely to have benefited from the later broad expansion of language programs.

Residence status also plays an important role: at the time of the 2017 survey, 60 percent of refugees

with recognized protection status, 34 percent with exceptional leave to remain, and 32 percent of refugees whose final status was still being determined[7] had participated in an integration course.

German language skills have significantly improved since the 2016 survey

Over 90 percent of refugees had no German language knowledge when they arrived in Germany (Brücker et al. 2016a). Since then, we observe a steady increase in language competence.

In the IAB-BAMF-SOEP Survey, the refugees' German skills were rated on a five-point scale of "not at all" to "very good" in three areas, speaking, reading, and writing. The ratings are based on the refugees' self-assessment, but there is a close correlation between this self-assessment and the interviewer's assessment of how well the survey could be conducted in German.[8] There was an improvement in language skills in all three areas between the 2016 and 2017 surveys. In the 2017 survey, 31 percent of respondents estimated their speaking skills to be "very good" or "good" (2016: 15 percent). 37 and 33 percent of respondents rated their reading and writing skills, respectively, as "very good" or "good."

The longer a refugee has been in Germany, the better their language skills become: in 2017, 17 percent of refugees who moved to Germany in 2016, (Table T4), 33 percent of those who arrived in 2015, and 48 percent of those who came in 2014 identified their German skills as very good or good. A slightly lower number of those who moved in 2013 consider themselves to have strong German skills

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[6] „KompAS" is offered jointly by the BA and the BAMF. Here, the integration course of the BAMF is coupled with activation measures of the BA.

[7] Only asylum seekers from countries with good prospects of staying (Syria, Iraq, Iran, Eritrea, and Somalia) are eligible to attend an integration course.

[8] Cronbach's alpha, a measure of correlation that measures the internal consistency of a scale, has a value of 0.74.

T4

Refugee participation in language courses and language proficiency, by year of arrival

Proportion of refugees suryeved in 2017, in percent

Year of arrival	Integration course	ESF-BAMF-course/ occupational language course	BA-program with language support[1]	Other German courses	Good or very good language proficiency[2]
2013	46	15	9	63	36
2014	60	14	19	54	48
2015	50	8	12	51	33
2016	40	4	5	42	17
All	50	9	12	51	33
Observations	5,413	5,327	5,444	5,409	5,443

[1] This includes participation in an introductory German-language course offered by the BA (according to § 421 SGB III) as well as other BA language programs, the "Perspektiven für Flüchtlinge" measure (BA), "Perspektiven für jugendliche Flüchtlinge" (BA), "Perspektiven für weibliche Flüchtlinge," (BA) or "KompAS" (BA and BAMF).
[2] Rounded average for all three dimensions (speaking, reading, writing).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

(36 percent), which could be due to the fact that this cohort participated less in language courses than those who moved in 2014. In-depth analyses show that language competence increases with participation in language courses – the most important factor for acquiring language skills (Brücker et al. 2019).

Language competence increases with course participation

For the following analyses, the dimensions of linguistic competence were combined into a sum index scaled from 0 to 12.[9] As figure F1 shows, 61 percent of those who have completed an integration course and 71 percent of those who have completed the ESF-BAMF language program report very good or good German language skills (Figure F1).

F1

Good or very good language proficiency of refugees, by course participation

Proportion of refugees surveyed in 2017, in percent
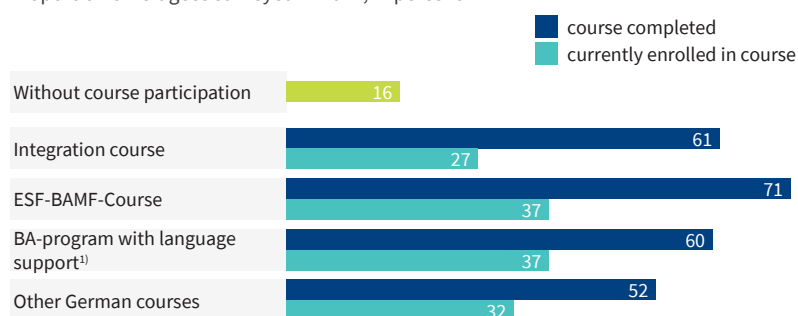
[1] This includes participation in an introductory German-language course offered by the BA (according to § 421 SGB III) as well as other BA language programs, the "Perspektiven für Flüchtlinge" measure (BA), "Perspektiven für jugendliche Flüchtlinge" (BA), "Perspektiven für weibliche Flüchtlinge," (BA) or "KompAS" (BA and BAMF).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted © IAB

F2

Good or very good language proficiency of refugees, by gender and children in the household

Proportion of refugees surveyed in 2017, in percent
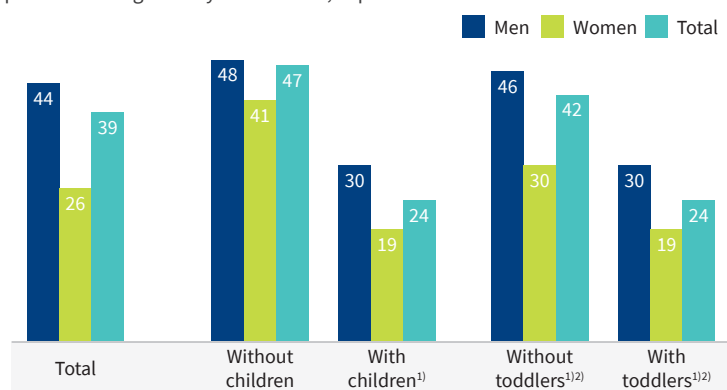
[1] Only individuals with at least one child in the household whose age is known.
[2] Toddlers are defined as children under four years of age.
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

Graduates of BA language programs report similarly high values. These are slightly lower for graduates of other language programs. In contrast, only 16 percent of respondents who did not take part in any language program reported very good or good knowledge of German.

Refugees with children have poorer language skills

While a total of 44 percent of male refugees have very good or good German language skills, this only applies to 26 percent of female refugees (Figure F2). However, the difference between childless refugees is much smaller: here, 41 percent of women and 48 percent of men have very good or good German language skills. On average, lower proportions of refugees with children, especially toddlers, have very good or good German language skills; this applies particularly to female refugees.

Course participation as the most important factor in the acquisition of language skills

Multivariate estimations confirm the descriptive findings. Table T5 (page 7) shows the results for the estimation of two models: On the one hand, for a model in which the first and second waves were pooled, and, on the other hand, for a model with individual fixed effects. The second model allows controlling for time-constant unobservable individual differences. In this case, correlations are only identified by temporal changes. We carried out the estimations in both ways, in each case for women and men together and separately. The dependent variable is the sum index for all three dimensions of language competence as described above.

The results of the pooled model show that women's German language skills are significantly lower than that of men. The same holds true for respondents with toddlers in the household compared to childless individuals.[10] At the same time, all

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[9] The sum index summarizes the linguistic self-assessment of the refugee over all three areas speaking, reading and writing and can take values between 0 and 12. Five categories ("not at all" to "very good") were formed on the basis of this sum index. The category "not at all" corresponds to an index value of 0, the category "very good" to an index value of 10 to 12.

[10] In models with fixed effects, we controlled for the presence and the age of children. However, the results are difficult to interpret because they can only be identified in a few cases where this status changed between the two survey waves. We therefore refrained from reporting them here.

estimates show that completion and participation in language courses are significantly and positively correlated with German language competence. In the pooled model, the sum index for German language skills increases by 1.8 points for language course graduates and by 1.5 points on the scale from 0 to 12 for current course participants. In the fixed effects model, language skills increase by 0.7 points for course graduates and by 0.8 for course participants. Context factors such as employment (in the pooled model) and social contact with Germans are also significantly and positively correlated with language skills. However, it must be noted that in this case causality might be reversed, i.e. that respondents with a better knowledge of German are more likely to be employed or engage in social contacts with Germans.

Finally, the separate estimations for women and men indicate that women benefit from participating in language courses more than men. However, the results of the pooled regressions point out that children in the household – especially toddlers – constitute an obstacle to acquiring German language skills for women, but not for men. This may be due to the limited opportunities to participate in language courses, the lack of childcare facilities, and readiness to use them (Brücker et al. 2017). Moreover, unlike fathers, mothers with toddlers are not legally obliged to take part in language courses.

Education and training

At the time of their arrival in Germany, refugees had a very heterogeneous educational background and, on average, were less educated than the average population in Germany.[11] At the time of migration, 42 percent of refugees had attended secondary or other schools, usually with a practical vocational orientation, and 36 percent had graduated. In contrast, 32 percent of the German population on average had a university entrance qualification and 8 percent had completed a polytechnic secondary

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[11] The following results are based on the refugees surveyed in 2017. For an analysis of those surveyed in 2016, cf. Brücker et al. 2017.

T5

Effects of selected characteristics of refugees on their German language proficiency

	Pooled model			Fixed effects model		
	Total	Men	Women	Total	Men	Women
Female	-0.29***					
Children in the household[1] (reference: No children in the household)						
with children (0–3 years) in the household	-0.59***	-0.12	-1.23***			
with children (4–17 years) in the household	-0.07	0.14	-0.49***			
Participation in a German language course[2] (reference: No participation)						
currently enrolled in course	1.52***	1.14***	1.74***	0.76***	0.67***	0.88***
course completed	1.84***	1.54***	1.92***	0.74***	0.59***	0.97***
Employed	0.40***	0.38***	0.41*	0.09	0.06	0.05
Contact to Germans	0.27***	0.22***	0.34***	0.13***	0.13***	0.15***
Constant	3.25***	4.22***	2.29***	1.64***	1.66***	1.48***
Observations	4,169	2,684	1,485	4,169	2,684	1,485
Adjusted R²	0.51	0.48	0.53	0.31	0.33	0.28

Note: ***, **, *: significant on the 1-, 5-, and 10-percent level. Both models take only repeatedly interviewed individuals into account.

Dependent variable: Self-assessed German proficiency (as Index summarizing the skills in speaking, reading, and writing, scaled from 1-12) at the time of survey.

[1] We considered only own children living in the same household with known age. The fixed effects model controls for children in the household; we did not report the coefficiants as there are only a few cases in which the child status changes over the two waves.

[2] This includes participating at a integration course (BAMF), ESF-BAMF-Course meant to teach occupational German skills, an introductory German-language course offered by the BA (according to § 421 SGB III), the "Perspektiven für Flüchtlinge" measure (BA), "Perspektiven für jugendliche Flüchtlinge" (BA), "Perspektiven für weibliche Flüchtlinge," (BA) or "KompAS" (BA and BAMF).

Pooled model: Linear regression model; standard errors clustered on the individual level. Additional controls: survey year, residency (in month), residency squared, age at arrival, squared age at arrival, satisfaction with own health, illiteracy, German language proficiency before arrival, federal state, private accomodation, status of the asylum process, educational attainment, „Zeichen-Zahlen-Test", participation at the „Zeichen-Zahlen-Test", nationality.

Example: Employed refugees have on average – holding all other factors constant – a 0.4 points higher index score than unemployed refugees.

Fixed effects model: Standard errors clustered on the individual level. Additional controls: Residency (in month), residency squared, satisfaction with own health, private accomodation, children in the household.

Example: The completion of a German language course leads on average – holding all other factors constant – to an index increase of 0.74 points.

Source: IAB-BAMF-SOEP Survey of Refugees 2016 and 2017. © IAB

school (Statistisches Bundesamt 2018). A further 32 percent of refugees had completed middle school, comparable to the German Hauptschulen and Realschulen, while 55 percent of the German population on average had completed Hauptschulen, Realschulen, or a comparable school.

The gap between the average population in Germany and refugees is most pronounced in vocational training: 8 percent of refugees have attended a vocational training institution and 5 percent have completed their training. 17 percent attended university and 11 percent completed their studies. By contrast, the national average in 2017 was 59 percent with vocational qualifications and a further 18 percent with higher education or university degrees.

A large share of refugees have educational aspirations: 44 percent of those surveyed definitely will acquire or are likely to aspire to acquire a general school leaving certificate in Germany while 68 percent hope to complete vocational training or university studies.

At the time of the survey in the second half of 2017, 10 percent of the refugees who had moved to Germany since 2013 had attended school, begun vocational training or university, or had already completed their studies (Figure F3). This represents an increase of 4 percentage points in refugees' educational participation compared to the 2016 survey.

Vocational training, in which 5 percent of refugees participate, is the most frequent choice, with only 1 percent attending a university, college, or an advanced vocational training program and 2 percent receiving a general education. There is a clear gap in the participation rates of men and women in education: in 2017, 11 percent and 5 percent of male and female refugees, respectively, were attending an educational institution.

Similar to participation in language programs, the difference in educational participation between the sexes depends strongly on the presences of minor children in the household (Figure F4, page 9).

Overall, around a fifth of refugees who indicated they wished to attend an educational institution in Germany in 2016 had made that wish a reality by 2017. The relatively low proportion is partly due to insufficient language skills and a lack of general or vocational education and training.
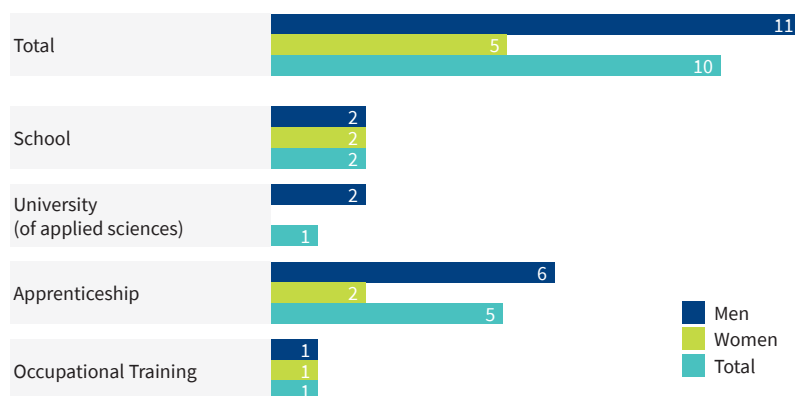
Employment

Compared to the first wave of the survey, the employment rates of refugees in Germany has increased significantly: in the second half of 2016, 9 percent of refugees who moved to Germany since 2013 had gainful employment on average; in the second half of 2017, it was 21 percent. The employment rate[12] increases with the length of residency.

The survey results are consistent with the information from the employment statistics of the Federal Employment Agency (Bundesagentur für Arbeit, BA): in these statistics, a good indicator for the employment rate[13] of refugees who have arrived in Germany since 2015 is the ratio of employment growth to population growth of nationals from the eight most important countries of origin of asylum seekers. Surveyed between December 31, 2014 and July 31, 2017, this share was 20 percent. This corresponds to the employment rate in the 2017 survey for the refugees who came in 2015. As of October 31, 2018, this figure had risen to 35 percent, so the increase in employment continued even after the end of the survey.

F3

Participation in the general or occupational education system by refugees in Germany

Proportion of individuals aged 18 and above, in percent

Note: There are only four observations of women enrolled in an university (of applied sciences). As the proportion is less than 1 percent, it is not reported.

Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

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[12] Here, the employment rate is defined as the ratio of all employees and the self-employed to the population aged 18-64.

[13] Here, the employment rate is defined as the ratio of employees to the working-age population.

Significant gap to average earnings in Germany

In 2017, the average monthly gross earnings of refugees employed full time was a good 1,600 euros, which corresponds to about 55 percent of the average earnings of all full-time employees. As a significant share of refugees work part time or are completing internships or training, the average gross monthly income of all employed refugees amounts to just under 1,000 euros (Figure F6).

Jobs more often found via personal networks

Personal connections play an important role in finding a job: 43 percent of refugees who had been employed at least once in 2017 found their first job in Germany through family members, friends, or acquaintances; 27 percent through the job center or employment agencies; and 9 percent via the internet and newspapers.

The second wave of the survey involved questions about the structure of these personal networks: 22 percent of those who first started working in 2017 had found the job through German friends and acquaintances, 15 percent through friends and acquaintances in their own ethnic group or other migrants, and 3 percent through family members. Thus, personal relationships with Germans play a somewhat larger role than contacts within a refugees' cultural or ethnic networks.

## Job structures of refugees are different pre- and post-arrival in Germany

75 percent of male refugees and 37 percent of female refugees had previous work experience before they came to Germany. Men and women with work experience had been employed ten and 11 years on average, respectively.

A change in the occupational position of refugees compared to their home country can be observed as they enter the German labor market (Table T6, page 10). Although the proportion of white-collar workers has remained unchanged at one-third, the proportion of blue-collar workers has risen by 10 percentage points, while the proportion of self-employed has fallen to 3 percent from a good third. The proportion of employees in management positions has also fallen sharply.

Before moving to Germany, 15 percent of the refugees with work experience performed unskilled

F4

Participation in the general or occupational education system by refugees in Germany, by gender and children in household

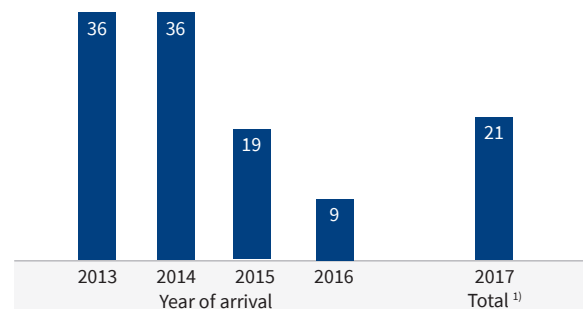Proportion of indivduals aged 18 and above, in percent
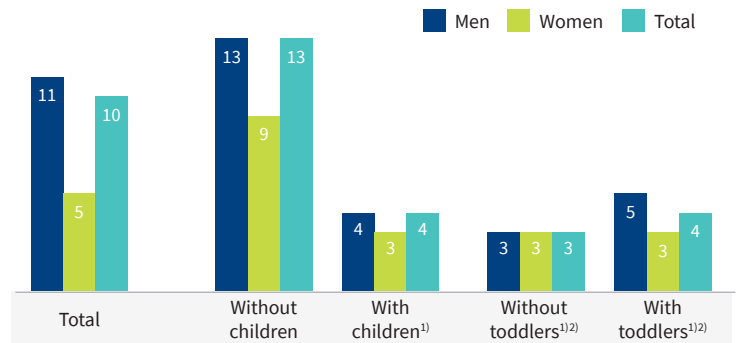
1) Only individuals who live in the same household with children whose age is known.
2) Toddlers are defined as children under four of age.
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

F5

Average employment rate of refugees, by year of arrival

Proportion of refugees surveyed in 2017, in percent

1) Average employment rate of refugees at the time of the survey in the 2nd half of 2017.
Note: All individuals between 18 and 65 in full time, part time, marginal, or irregular employment or are doing an apprenticeship are defined as being employed (including self-employed).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

F6

Monthly gross income of refugees, total and for full-time employees, by year of arrival

Median monthly gross income, in euros
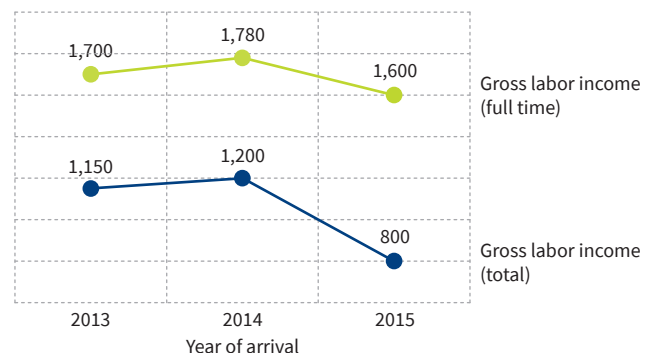
Note: Only individuals aged between 18 and 65. Respondents with a gross income of zero and newly arrived in 2016 (due to small sample size) were not included.
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

or semi-skilled activities; in Germany, the figure was 47 percent. Two-thirds of refugees previously worked jobs where they performed specialist activities, and one-fifth complex specialist activities or highly complex activities. In comparison, half performed specialist activities and 5 percent complex specialist or highly complex activities after arriving in Germany.[14]

_____

[14] For the definitions of the requirement levels for various jobs, see Bundesagentur für Arbeit – Statistik (2018).

F7

Congruence between qualification of refugees and the required skill level in their jobs

Proportion of individuals aged between 18 and 65, in percent

current job is … ■ below qualifications ■ adequate ■ over qualifications

	below	adequate	over
Total	31	44	25
Women	29	55	16
Men	32	43	25
Specialists and experts	81	19	
Skilled	45	52	3
Semi- and unskilled		51	49

Note: Existing qualifications were determined using the ISCED Classification (2011). Qualifications required for positions were determined using the KldB Classification of Occupations (2010).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

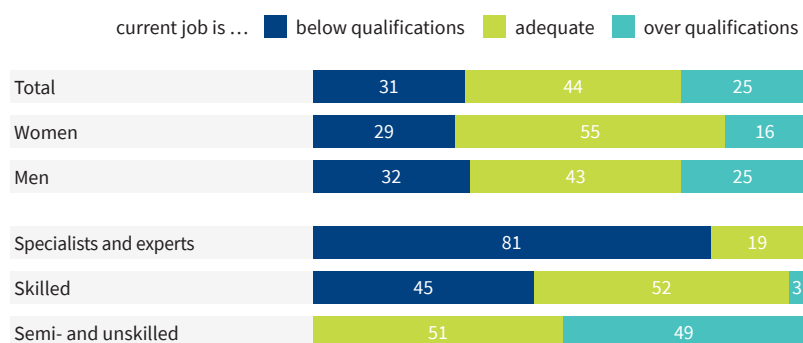## High employment rates below and above formal qualification level

Based on the refugees' responses regarding their educational background, vocational training, professions, and jobs, it can be determined if a job's qualifications match the qualifications of the refugees. The qualifications were based on the International Standard Classification of Education (ISCED) of the OECD, and the qualification requirements for the activities performed were based on the German Classification of Occupations 2010 (Klassifikation der Berufe, KldB) of the IAB and the BA. According to these classifications, 31 percent of refugees are overqualified for their jobs, 25 percent are working jobs for which they are not formally qualified, and 44 percent have jobs that match their qualifications (Figure F7). Qualifications acquired through professional experience can thus be put to good use.

Refugees with expert and specialist qualifications are disproportionally affected by skill-downgrading in their current employment, while 50 percent of the skilled workers (Fachkräfte) have jobs that fit their qualifications. Half of the refugees who have no formal vocational training and are qualified to perform unskilled or semi-skilled activities are employed in a job with specialist re-

T6

Occupational position and skill level of refugees before arrival in Germany, by gender

Proportion of individuals aged between 18 and 65, in percent

	Prior to arrival			In Germany		
	Total	Men	Women	Total	Men	Women
Occupational position						
Blue-collar workers	30	33	18	40	42	21
White-collar workers	33	29	50	35	34	45
With supervisory status	10	9	11	1	1	*2*
Self-employed	33	35	25	3	3	*3*
Civil-servants and public employees	3	3	6	5	5	14
Apprenticeships and interns[1]	–	–	–	17	17	18
Observations	1,575	1,238	337	731	637	94
Skill level						
Semi- and unskilled tasks	15	16	11	47	46	61
Skilled tasks	65	66	57	48	50	27
Complex specialist tasks	6	6	7	2	2	*3*
Highly complex expert tasks	15	13	26	3	3	9
Observations	3,340	2,636	704	767	668	99

[1] This response category was only asked for the occupational position in Germany.
Note: All results in italics are based on ten observations or fewer.
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted.   © IAB

quirements. It is slightly more common for men to work jobs beneath their formal qualifications (32 percent) than for women (29 percent).

Two opposing trends are present here: on the one hand, not all refugees succeed in transferring the human capital they have acquired in their countries of origin to the German labor market and find employment that matches their qualifications. Refugees with academic qualifications are more affected than skilled workers. On the other hand, significant numbers of refugees who do not have formal vocational qualifications are employed as skilled workers in the German labor market, probably due to competencies acquired through years of work experience.

Overall, however, refugees in Germany are often employed in jobs that place lower demands on formally or informally acquired skills than the jobs they had in their home countries. These differences in skill requirements are probably due to a number of factors: lack of language skills, problems in transferring human capital to a labor market with different skill requirements, incentives to take up work quickly, and the targeted recruitment of refugees to manual bottleneck jobs.

Significant employment differences between men and women

At the time the survey was conducted in the second half of 2017, 27 percent of male and 6 percent of female refugees were employed. This employment gap is related to the differing family structures between male and female refugees: for example, the employment rate of female refugees with infants is especially low at 3 percent (Figure F8). The employment rate of fathers with infants is also lower than the average for men at 18 percent, but still significantly higher than the average for women; additionally, more women live with their families. 9 percent of female refugees and 12 percent of male refugees with older children are gainfully employed. However, the differences between the employment rates of men and women is not solely due to family structures, as 6 percent of women and 30 percent of men without children in the household are working.

Participation in integration programs is closely related to gainful employment

The correlation between finding employment and completing language, integration, and labor market policy programs in 2017 are high: 31 percent of people who have completed an integration course are employed, compared to 16 percent of those who have not yet participated or are currently attending (Figure F9). The employment rate for graduates of the ESF-BAMF program – which builds upon the integration courses and requires at least level A2

F8

Employment of refugees, by sex and children in the household
Proportion of individuals aged between 18 and 65, in percent
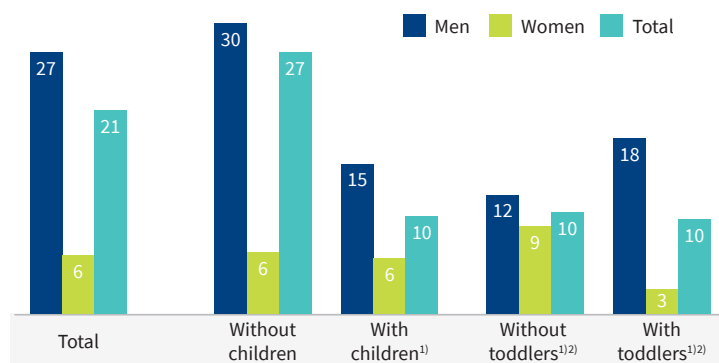
[1] Only individuals with at least one child in the household whose age is known.
[2] Toddlers are defined as children under four years of age.
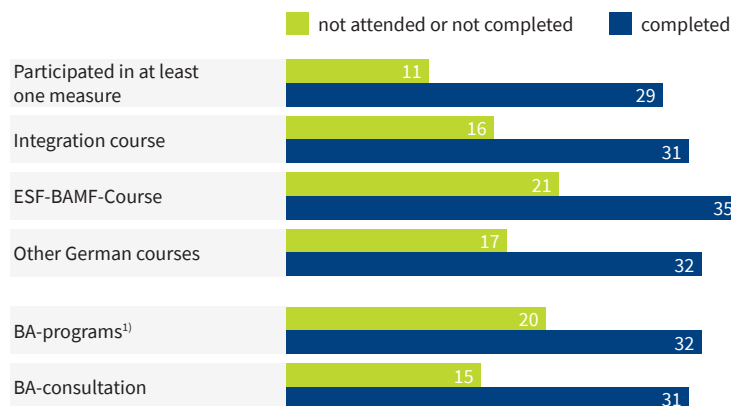Note: All individuals between 18 and 65 in full time, part time, marginal, or irregular employment or are doing an apprenticeship are defined as being employed (including self-employed).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

F9

Employment rates of refugees, by programme participation and completion
Proportion of individuals aged between 18 and 65, in percent

[1] This includes participation in an introductory German-language course offered by the BA (according to § 421 SGB III) as well as other BA language programs, the "Perspektiven für Flüchtlinge" measure (BA), "Perspektiven für jugendliche Flüchtlinge" (BA), "Perspektiven für weibliche Flüchtlinge," (BA) or "KompAS" (BA and BAMF).
Note: All individuals between 18 and 65 in full time, part time, marginal, or irregular employment or are doing an apprenticeship are defined as being employed (including self-employed).
Source: IAB-BAMF-SOEP Survey of Refugees 2017, weighted. © IAB

German – is even higher. At roughly 30 percent in each case, the employment rates among those who took advantage of labor market advice from the BA or took part in labor market policy measures are also significantly higher than among non-participants or those who were still in programs at the time of the survey. However, these can also be spurious correlations, for example where both completing integration courses and taking up employment depend on completing the asylum process or length of residency. Only multivariate analyses can provide more detailed information here.

Integration measures increase chances of employment, higher salaries

Multivariate analyses of employment determinants and gross monthly earnings of refugees were carried out (Table T7, page 13). A distinction is made in the dependent variables between all employed individuals, including those working mini-jobs,[15] trainees, and part-time and full-time employees. Wage regressions were only calculated for the latter group. Of particular interest here is how gender and marital status, the asylum procedure and its outcome, and participation in integration policies impact the likelihood of employment and gross wages. The regressions control for many other variables, including educational attainment, length of stay, and work experience. The models account for numerous interaction effects, such as between marital status and having children or being childless, or residence status and participation in integration and language measures. Table T7 shows the predicted values for the probability of being employed and the gross monthly earnings, respectively: the predicted values for each person were estimated and then averaged over the respective group according to their characteristics. All regressions were estimated as cross-sectional models and as models with person-specific fixed effects.

The cross-sectional estimates confirm that there is a large employment gap between male and female refugees: on average, men are 12 percentage points more likely than women to be employed; for part-time and full-time work, this probability is 8 percentage points higher. The average wage level of men is around 90 euros per month higher than that of women. The presence of children in the household in the cross-sectional regressions reduce the average probability of employment and also decrease the average wage level of those working. However, there are significant differences between men and women: while the probability of being employed for women with children is not significantly different from zero, the probability for men with toddlers is 16 percent. In regressions with person-specific fixed effects, the gender differences and interactions between gender and having children cannot be identified because gender remains constant over time.[16]

A closer look at the effects of the outcome of asylum procedures and participation in language courses and/or BA programs on labor market indicators reveals some surprising results. It is differentiated between individuals who completed the asylum process and received protection status, individuals whose asylum applications were rejected, and individuals whose asylum cases are still ongoing.[17] In terms of program participation, it is differentiated between individuals who completed the programs, those who have not yet participated in a program, and those who were currently in a program at the time of the survey.

For program participation, the expected effects are the first to emerge: the probability of being gainfully employed and earning higher wages are highest for those who have completed programs and lowest for those who are currently participating in them. Rather surprising is the impact of asylum status: in the cross-sectional regressions, individuals who have completed the asylum procedure and obtained protection status are slightly more likely to be gainfully employed than those whose

[15] Mini-jobs are a form of marginal employment where one works part time for 450 euros or less a month.

[16] The presence of children was controlled for, but the results are not reported because they are difficult to interpret due to the small number of cases in which the presence of children changed.

[17] Employment opportunities depend on residence status. Recognized asylum seekers whose applications were accepted may work without restrictions. Asylum seekers with temporary protection against deportation may work after approval by the Foreigners' Office. Individuals whose asylum applications have been rejected (tolerated persons) can pursue gainful employment if the ALB and BA agree in individual cases. Before a final decision is made on asylum applications, asylum seekers may in principle take up employment, provided that the ALB and the BA have agreed. Individuals obliged to live in a reception facility are excluded. This applies in particular to asylum seekers from safe countries of origin who submitted their asylum application after August 31, 2015. The regressions were controlled for the different residence status and by dummy variables for the countries of origin, so that these different conditions were taken into account.

Association of different attributes of refugees and their employment status and gross labor income

Predicted probability of being employed (in percent) and predicted gross labor income (in euros)

	Employed [1], in percent		Full or part time [2], in percent		Gross labor income [3], in euros	
	Cross-sectional model	Fixed effects model	Cross-sectional model	Fixed effects model	Cross-sectional model	Fixed effects model
Gender						
Men	19		12		748	
Women	7		4		662	
Children in household [4]						
No children in household	18		12		788	
With children (aged 4 to 17) in household	12		8		694	
With children (aged 0 to 3) in household	10		6		640	
Interaction of gender and children in household [4]						
Men with no children in household	23		16		799	
Men with children (aged 4 to 17) in household	14		10		705	
Men with children (aged 0 to 3) in household	16		10		650	
Women with no children in household	10		6		708	
Women with children (aged 4 to 17) in household	9		4		624	
Women with children (aged 0 to 3) in household	1		0		576	
Status of application for asylum						
Recognized	15	13	10	10	768	889
Rejected	14	16	9	7	668	541
In progess	12	18	7	9	638	320
Participation in language or BA-Courses						
Completed program	21	18	15	14	811	931
No program participation	17	19	11	12	677	434
Currently enrolled in program	7	9	4	5	620	700
Interaction asylum status and program participation						
Recognized and completed program	21	17	16	15	846	1,180
Recognized and no program participation	18	19	11	13	706	550
Recognized and currently enrolled in program	7	6	4	5	646	887
Rejected and completed program	21	28	13	17	736	718
Rejected and no program participation	15	18	9	6	614	335
Rejected and currently enrolled in program	9	3	5	0	562	540
In progress and completed program	19	18	12	10	702	425
In progress and no program participation	12	20	6	10	586	198
In progress and currently enrolled in program	6	17	4	8	537	320
Labor market consultations						
Labor market consultations (BA) used	19	18	18	12	746	719
Labor market consultations (BA) not used	11	12	8	8	719	674
Type of employment						
Part time, marginal, apprenticeship					408	631
Full time					1,564	805
Observations	5,392	5,064	5,392	5,064	583	566

[1] All individuals in full time, part time, marginal, or irregular employment or those completing an apprenticeship are defined as being employed (including self-employed).

[2] Full- and part time employed (including self-employed).

[3] Respondents with a gross labor income of zero as well as responses in the highest percentile were not included.

[4] Only individuals with at least one child in the household whose age is known. In models with fixed-effects number of children is controlled for, but the coefficients are not reported due to the low number of changes in the number of children.

Note: Results refer to individuals aged between 18 and 65. Controls: Citizenship, federal state, date of interview, age, age squared, months since arrival, education before arrival, language proficiency before arrival, occupational experience before arrival, partnership status, participation in one or more language courses. Models with fixed-effects additionally control for survey year. Missing values are also controlled for all variables in all models.

Example: For people who have used labor market consultation (BA), the average probability of gainful employment is 19 percent in the cross-sectional model and 18 percent in the models with person-specific fixed-effects.

Source: IAB-BAMF-SOEP Survey of Refugees 2016 and 2017. © IAB

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cases are still ongoing or whose applications have been rejected. In the regressions with fixed effects that control for individual heterogeneity, however, the opposite is the case.

The estimated results, which take into account the interaction between protection status and program participation, provide more detailed information: refugees with protection status who have completed a program are about similarly likely to be employed as those with rejected asylum applications who completed a program. However, the wages of those whose asylum applications were rejected are significantly less than those of refugees with protection status.

These results indicate that refugees whose asylum applications were rejected and who try to integrate themselves as quickly as possible into the labor market are more likely to take up mini-jobs and low paid jobs in particular. On the other hand, refugees with protection status seem to spend more time looking for work themselves or with the help of employment agencies, but it is then better paid and probably more in line with their qualifications.

Finally, cross-sectional regressions and regressions with fixed effects show that the use of the BA's advisory and agency services is associated with an increasing probability of being gainfully employed and higher gross earnings.

Conclusion

Since the sharp rise in forced migration to Germany in 2015, the efforts of the federal government, states, and local authorities; of educational institutions and employment services; of numerous actors in business and civil society; and not least of the refugees themselves, have concentrated on integration and participation in all areas of the labor market, education system, and society. The IAB-BAMF-SOEP Survey of Refugees enables an analysis of the impacts of these efforts.

This report shows that at the time of migrating to Germany, the conditions of the refugees were unfavorable in many respects. Although the physical health and overall health satisfaction of the refugees is good, the risk of mental illnesses is significantly higher than for the population as a whole. Refugees also show clear signs of an increased risk of post-traumatic stress disorder, especially female and older refugees. The increased risk, however, does not mean that the large majority is presently affected by such illnesses. On the contrary, the data suggest only a minority are. The health indicators used cannot replace clinical studies, but they suggest that comprehensive health care for these groups is a key challenge for the future. Systematic screening of refugees and low-threshold services will be important, for example through trained peer counselors, targeting refugees with minor problems. This can supplement the care of more difficult cases by licensed psychotherapists, since exclusive care by licensed personnel – not least because of the high demands on culture- and language-specific treatment – does not seem feasible.

Only a tiny fraction of refugees already had German language skills when they came to Germany. By now, however, half of refugees have participated in an integration course. Accordingly, the share of refugees who indicate they speak German very well or well doubled from 2016 to 2017; however, it is still only one-third of refugees who have good or very good German skills. The survey also shows that there is still a significant need for language learning measures, both overall and for specific groups, especially women with children. Another key factor for integration will be whether more advanced language programs which teach job-related vocabulary will be offered and used in the future beyond the basic integration courses.

It is true that the education level of refugees in Germany is higher than the population in the origin countries. Nevertheless, there is a considerable gap to the average population in Germany, particularly in the area of vocational, but partly also school education. With around 10 percent of adult refugees enrolled in an educational institution in 2017, this share has almost doubled compared to the previous year. Still, the potential, measured by the educational aspirations of the refugees, is far from exhausted.

At the same time, labor force participation significantly increased: 21 percent of refugees arrived in Germany since 2013 were gainfully employed in the second half of 2017. The estimates based on the BA's process data imply further increase in this share up to 35 percent by October 2018. This trend

is accelerating with the completion of integration measures, such as participation in integration courses. While around 30 percent of the refugees are working jobs for which they are formally overqualified, a quarter also work in occupations whose demands go beyond their formal qualification level. Obviously, these refugees manage to utilize their qualifications acquired on-the-job at least partially in the German labor market. The average earnings of refugee working full-time are around 55 percent of the average earnings of full-time employees in Germany.

On average, female refugee perform worse in the German labor market than male refugee. Unlike men, most women live in partnerships or with their children in the household, about half of whom are in infancy. These family constellations contribute to the disadvantage women face in education and employment. Further research is needed to identify other relevant factors.

The recognition of asylum applications is not directly linked to an increase in employment; persons whose asylum applications have been rejected or who are still waiting for a decision are as often employed as refugees with approved asylum applications. However, their significantly lower earnings suggest quick labor market entry, but in less well-paid jobs or jobs with lower skill requirements.

In all other areas examined, the survey carried out in the second half of 2017 revealed progress in integration and participation compared with the previous year: this applies to language competence development, participation in education and training, and increasing employment. Nevertheless, the findings also suggest that the opportunities for language training and integration into the education and training systems as well as the labor market – especially for women – have not yet been exhausted and that appropriate health care for refugees remains a major challenge.

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