

Forced migration



REPORT by Herbert Brücker, Nina Rother, Jürgen Schupp, Christian Babka von Gostomski, Axel Böhm, Tanja Fendel, Martin Friedrich, Marco Giesselmann, Yuliya Kosyakova, Martin Kroh, Simon Kühne, Elisabeth Liebau, David Richter, Agnese Romiti, Diana Schacht, Jana A. Scheible, Paul Schmelzer, Manuel Siegert, Steffen Sirries, Parvati Trübswetter, and Ehsan Vallizadeh

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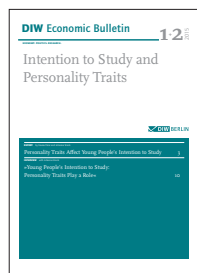
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Forced migration, arrival in Germany, and first steps toward integration

By Herbert Brücker, Nina Rother, Jürgen Schupp, Christian Babka von Gostomski, Axel Böhm, Tanja Fendel, Martin Friedrich, Marco Giesselmann, Yuliya Kosyakova, Martin Kroh, Simon Kühne, Elisabeth Liebau, David Richter, Agnese Romiti, Diana Schacht, Jana A. Scheible, Paul Schmelzer, Manuel Siegert, Steffen Sirries, Parvati Trübswetter, and Ehsan Vallizadeh

A new representative survey of a total of 4,500 recently arrived refugees to Germany conducted by the Institute for Employment Research (IAB), the Research Centre of the Federal Office for Migration and Refugees (BAMF-FZ), and the German Socio-Economic Panel (SOEP) at the German Institute for Economic Research (DIW Berlin) has generated an entirely new database for analyzing forced migration and the integration of refugees into German society. The findings we present here are based on the first part of the survey, in which over 2,300 people were interviewed. In addition to the causes of forced migration, the survey captures data on escape routes and educational and vocational biographies. Respondents also answered questions about their values, attitudes, and personality traits, as well as their integration into the German job market and education system. The results show that the threats of war, violence, and persecution were their primary reasons for migration, and that the costs and risks of migration are high. The refugees show extreme heterogeneity in educational backgrounds. The share of respondents who arrived in Germany with vocational or university degrees is low. However, these refugees have high aspirations when it comes to education. And in terms of values, they have more in common with the German population than with the populations of their respective countries of origin. The integration of refugees into the job market and education system has just begun, but Germany's integration policy measures are starting to have a perceptible impact.

Note: The Institute of Employment Research (IAB), the Information Centre for Asylum and Migration of the Federal Office for Migration and Refugees (BAMF-FZ), and the Socio-Economic Panel (SOEP) at the German Institute for Economic Research (DIW Berlin) have been working together on a longitudinal survey of refugees, on which this study was based. The survey research institute Kantar Public (formerly TNS Infratest) has been commissioned to carry out the interviews. Kantar Public performs routine checks to ensure the quality of the survey. In preparation for the next round of interviews, Kantar Public discovered in the course of 2017 that some of the previous interviews had not been performed correctly. Six percent of the total household interviews were affected. Comprehensive checks of the research works published so far have determined that the basic conclusions of these studies still hold after the data revision. The deviations in the revised dataset are either within the margin of statistical error, or they result in only slight differences of a few percentage points compared to the previously released version of the data. The results presented in this study are partly incorrect. We have, however, decided against publishing a corrected version, given that updated results based on the next round of interviews can be found here: Herbert Brücker, Nina Rother und Jürgen Schupp (Hrsg.) (2017): IAB-BAMF-SOEP-Befragung von Geflüchteten 2016: Studiendesign, Feldergebnisse sowie Analysen zu schulischer wie beruflicher Qualifikation, Sprachkenntnissen sowie kognitiven Potenzialen. DIW Politikberatung Kompakt 123 (korrigierte Fassung) (in German).

For further details on the survey and the revised results (in German), see: http://doku.iab.de/graupap/2017/Revidierter_Datensatz_der_IAB-BAMF-SOEP-Befragung.pdf

Germany experienced an influx of 890,000 refugees in 2015 and an additional 210,000 by the end of September 2016.¹ The country has not experienced this level of immigration since the Federal Republic was founded in 1949. The upsurge in migration for humanitarian reasons since the beginning of the present decade poses major challenges to policymakers, administrative agencies, and civil society organizations. All these actors need reliable data to master the challenges at hand, and up to now, a representative database on the refugees who have come to Germany in recent years has been lacking.

To meet this pressing need, the IAB, BAMF-FZ, and SOEP have forged a partnership to create a comprehensive, representative database on refugees to Germany.² The first part of the longitudinal study surveyed over 2,300 refugees to Germany and is the basis for the findings in this report. In the second part, the random sample will be expanded to include at least 4,500 respondents. The approximately 450 survey questions capture data on refugees' personality traits, attitudes, health, and indicators of subjective well-being in addition to their educational and occupational biographies, the causes of their forced migration, and the escape routes they used. The survey also asked about their accommodations, the asylum process, integration into the job market, and other areas of society, and their participation in specific policy measures (Boxes 1 and 2).

In this short report, we present preliminary results from the first part of the IAB-BAMF-SOEP Refugee Survey. Simultaneously, a more detailed presentation of the results has been published in a longer report (in German).³

1 See: Federal Ministry of the Interior (BMI), "890.000 Asylsuchende im Jahr 2015," press release dated Sept. 30, 2016.

2 The first part of the random sample upon which this report is based was financed with funds from the research budget of the Federal Employment Agency (BA) allocated to the IAB. The Federal Ministry of Education and Research is financing the second part. The Federal Ministry of Labor and Social Affairs commissioned the IAB to conduct analyses on the basis of these data, which will offer increased opportunities for analysis. Furthermore, all three research institutes have allocated personnel resources to the project.

3 See Herbert Brücker, Nina Rother and Jürgen Schupp, "IAB-BAMF-SOEP-Befragung von Geflüchteten: Überblick und erste Ergebnisse," *IAB Research Reports* no. 14 (2016).

Migration to Germany: reasons and costs

Threats of war and persecution are the primary causes of forced migration

In migration theory, forced migration is understood as a complex decision in which war and persecution as well as economic, political, and institutional factors in the countries of origin and destination all play a role.⁴ This is why the adult refugees interviewed in this study were not only asked why they left their countries of origin and

transit countries, but also why they chose Germany as their destination. The survey allowed multiple answers in order to decipher the complex motivators that culminate in the decision to migrate.⁵

The threat of violent conflicts and war was by far the most frequently stated cause of forced migration (70 percent). Other important political reasons were persecution (44 percent), discrimination (38 percent), and forced conscription (36 percent). Poor personal living conditions (39 percent) and the economic situation in the country of

⁴ Timothy J. Hatton, "Seeking asylum in Europe," *Economic Policy* 19 (38) (2004): 5–62; Timothy J. Hatton, "Refugees, Asylum Seekers, and Policy in OECD Countries," *American Economic Review* 106 (5) (2016): 441–45.

⁵ The interviewers clearly explained that the answers would play no role in the respondent's asylum process and would remain completely anonymous.

Box 1

The IAB-BAMF-SOEP Refugee Survey

The IAB-BAMF-SOEP Refugee Survey is a representative longitudinal study of more than 4,500 people in Germany aged 18 and older. In the first phase, 2,349 people living in 1,766 households were surveyed from June to October 2016. The results in the present report are based on that survey. The second part of the study is currently in progress. An additional 2,300 people are expected to respond to the survey by the end of 2016. The study provides the basis for general statements about the statistical population of refugees who are registered in the Central Register of Foreign Nationals; who entered Germany between January 1, 2013, and January 31, 2016; and who applied for asylum (regardless of their current legal status).

The term "refugee" is not used in the legal sense here, but must be understood as a collective term for the group of adults described above and in Box 2.

Key features of the survey:

- It provides comprehensive information on the respondents' reasons for forced migration, escape routes, individual cognitive abilities, personality traits, values, health, educational and employment-related biographies, language proficiency, earnings and assets, and family contexts and social networks. It also includes data on registration, asylum procedure status, accommodations, and use of integration and job market policy measures and career counseling programs. To the best of the authors' knowledge, the survey represents the most extensive collection of data for the analysis of forced migration and the integration of refugees worldwide.
- It was conducted in person by trained interviewers from KANTAR Public (formerly TNS Infratest Sozialforschung) with the assistance of computers. The questionnaire was avail-

able in seven languages: Arabic, Kurmanji, Persian, Urdu, Pashto, German, and English. It was important to ensure that people unable to read well participated in the survey, so the company developed innovative audio-visual survey instruments, making the questionnaire available both in writing and verbally. Interpreters were available to provide support as required.

- The catalog of questions was harmonized with that of the IAB-SOEP migration sample and the basic catalog of questions used in the SOEP study "Leben in Deutschland" (Life in Germany). This allowed the results of the survey to be compared with data on immigrants and non-immigrants living in Germany. The survey was integrated into the SOEP as a special sub-sample so that can be used by the research community for analysis.
- With the written consent of respondents, the results are linked to the data from the IAB Integrated Employment Biographies (IEB), adding the precise job market data of the BA, which include data on earnings and episodes of employment, unemployment, and receipt of unemployment benefits, to the Refugee Survey data. This provides a detailed picture of the employment biographies of refugees in Germany.
- Respondents are closely tracked to ensure that as many as possible can be located to participate in further waves of the survey.

As a whole, the study provides a data set that is unique worldwide for research on refugee migration and integration. The data from the first wave will be available for research in fall 2017 at the IAB and SOEP Research Data Centers. For reasons of data confidentiality, the data sets linked to the IEB can only be used by guest researchers at the IAB or via remote access.

origin (32 percent) were also frequently mentioned reasons (Figure 1a). Refugees from Syria, Afghanistan, Iraq, and Iran cited war and persecution as reasons for migration, while refugees from Eritrea cited forced conscription. By contrast, many refugees from the Western Balkans reported precarious living conditions, discrimination, and poor economic situations in their countries of origin as their reasons for migration. Before coming to Germany, over two-fifths of refugees spent three months or longer in a transit country, although around 60 percent of them were planning to continue on to a different destination country. Many refugees reported that they did not leave the transit country voluntarily but due to precarious living situations (53 percent), persecution (25 percent), expulsion (19 percent), and discrimination (18 percent). The most frequently cited transit countries were Turkey, Iran, Lebanon, and Sudan, countries that bordered the respondents' respective countries of origin.⁶

Respect for human rights is the main reason for migrating to Germany

The respondents' need for protection played the central role in their choice of Germany as their destination country. The respect for human rights in Germany was cited most frequently on average (73 percent), particularly among respondents from Iraq (85 percent) and Syria (81 percent) and refugees from other conflict regions. The German education system (43 percent) and the feeling of being welcome in Germany (42 percent) were cited less frequently. Almost one-quarter of respondents stated Germany's economic situation or the national social welfare system as reasons for their choice (Figure 1b).

Personal networks played a minor role in the decisions to leave the country of origin. However, these networks were slightly more important as reasons for choosing Germany as a destination. While only nine percent of respondents stated that family members had already left the country as their reason for migrating, 19 percent indicated that they decided to come to Germany because family members were already living there.

Forced migration means high costs and risks

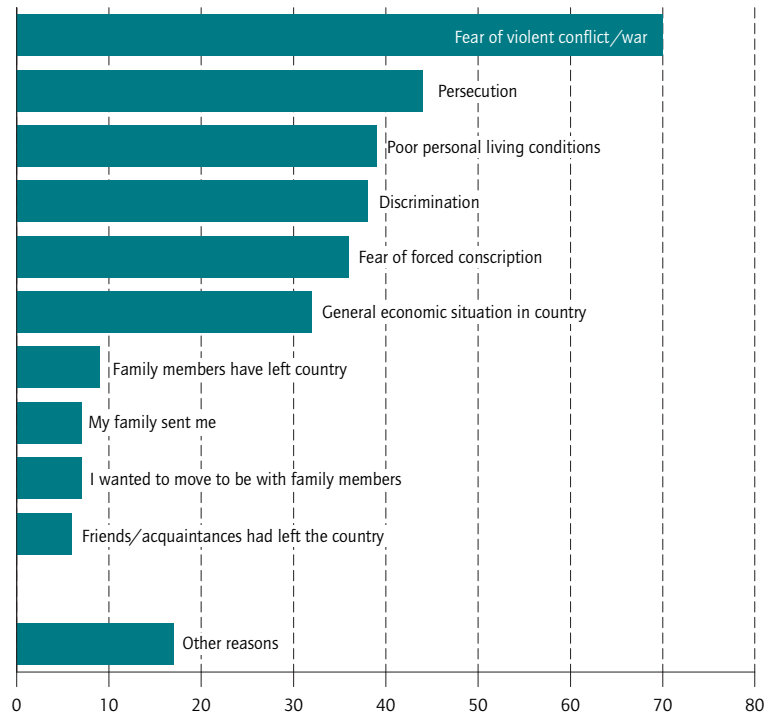
Forced migration is different from other forms of migration in that it entails higher costs and risks. Little has been reported on the level and structure of these costs or on the individual risks of forced migration.

According to the respondents who came to Germany as refugees between January 2013 and January 2016, the mean cost of travel from their home country to Germany

Figure 1a

Reasons for leaving country of origin

Multiple answers possible, weighted percentage value



Basis: Respondents who gave at least one reason.

Source: IAB-BAMF-SOEP Refugee Survey 2016; weighted values.

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was around €7,100 and the median cost⁷ was €5,000 (Table 1). The mean cost of travel from a transit country was lower: approximately €5,200 (the median cost was €3,550). The extremely large sums of money spent by some respondents to reach Germany explain the large difference between mean and median costs.

With regard to the average costs of forced migration, refugees spent the most on travel from their country of origin (€3,949; €2,912 from a transit country), followed by smugglers' fees (€3,103; €2,440 from a transit country), and accommodations (€459; €626 from a transit country, Table 1). People were most likely to pay out of their own savings (50 percent) or by selling assets (39 percent) or doing odd jobs (34 percent). Some borrowed the money from family members (15 percent) or friends (15 percent), or took out loans (seven percent).

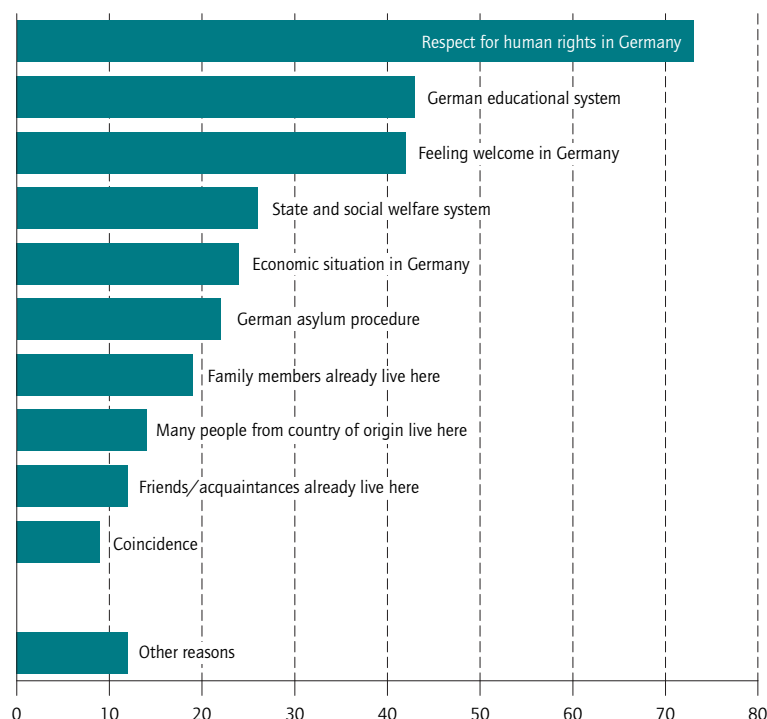
⁷ The median value is derived by dividing the random sample into upper and lower halves. Extreme values at the upper and lower ends of the distribution cannot influence the results here, in contrast to the calculation of average costs.

⁶ See Herbert Brücker et al., (2016a), *ibid.*

Figure 1b

Reasons for choosing Germany

Multiple answers possible, weighted percentage value



Basis: Respondents who gave at least one reason.

Source: IAB-BAMF-SOEP Refugee Survey 2016; weighted values.

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Table 1

Costs of forced migration to GermanyIn euros¹

Cost category	Travel to Germany			
	Directly from country of origin		Directly from transit country	
	Mean	Median ³	Mean	Median ³
Costs of transportation	3,949	2,500	2,912	1,800
Costs of room and board	459	0	626	0
Costs of border crossing assistance/smuggling	3,103	1,500	2,440	1,000
Total costs ²	7,137	5,000	5,231	3,550

¹ Covers departures from January 1, 2013, to December 31, 2015.² The total costs were calculated as the sum of all costs for transportation, lodging, and border crossing assistance/smuggling. If respondents answered "don't know" to questions about the particular costs, their responses were not calculated into the total.³ Values of 0 appear for the median value when more than half of respondents did not state any costs in that cost category.

Source: IAB-BAMF-SOEP Refugee Survey 2016, weighted values.

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Box 2

Sampling procedure, sample size, and weighting

The sample was taken from the Central Register of Foreign Nationals, which contains information on the legal status of all those registered, thus allowing refugees to be identified. The study includes three groups classified by legal status: 1) asylum seekers whose asylum procedures are still ongoing; 2) refugees who have already been granted protection, in particular, asylum seekers whose asylum claim has been approved, refugees recognized under the 1951 Geneva Convention, and refugees who have been granted subsidiary protection¹; and 3) individuals whose asylum claims have been rejected but who are permitted to remain in the country temporarily with the status of Duldung ("toleration", a temporary stay of deportation).

Refugees who were not yet registered as asylum seekers were not included in the sample design because statistical information on this population is lacking, making it impossible to draw general conclusions about this group as a whole.

Overall, the Central Register of Foreign Nationals recorded 529,078 adult refugees² who entered Germany between January 1, 2013, and January 31, 2016, and submitted an application for asylum. Two-thirds of them (337,445) entered the country in 2015. Those who entered the country in 2016 were added retrospectively by BAMF. To mitigate the bias resulting from individuals who were not registered in 2015, the sample was drawn in three phases.

Of the newcomers who entered Germany in the aforementioned period, 55 percent (289,705) still had ongoing asylum procedures, 36 percent had been granted protection (191,481), and nine percent (47,892) had "tolerated" status (Duldung) or another status.

Because the sample is designed to be repeated every year, it includes an above-average number of people with better chances of remaining in Germany. And a higher proportion of women were included to enable general conclusions to be drawn about this group. The other groups are also represented in proportions smaller than that of the statistical population. The appropriate weighting procedures were used to assure that the sample is representative of the population in question.

1 This also includes people who were accepted as part of a resettlement program, as well as "contingent refugees".

2 Plus 205,932 minors.

The average costs of forced migration varied widely by country of origin. Respondents from Afghanistan and Pakistan reported the highest costs (€12,040), followed by Iraq, Iran, Lebanon, Palestine (€11,363), and Syria (€5,556). The costs for people from the countries of northern Africa (€1,398), the Western Balkan states (€1,638), the rest of Africa (€2,578) and the post-Soviet states (€2,644) are at the lower end of the distribution.

Forced migration entails not only monetary costs but also significant risks and hazards to physical and emotional well-being. For example, one-quarter of respondents said they had survived shipwrecks. Many also reported other health risks and threats to their physical well-being. Two-fifths of the respondents had been victims of physical assault, one-fifth had been robbed, and 15 percent of female refugees reported having been sexually assaulted. More than half had fallen victim to fraud and more than one-quarter had been blackmailed.

Duration and costs of travel have fallen over time

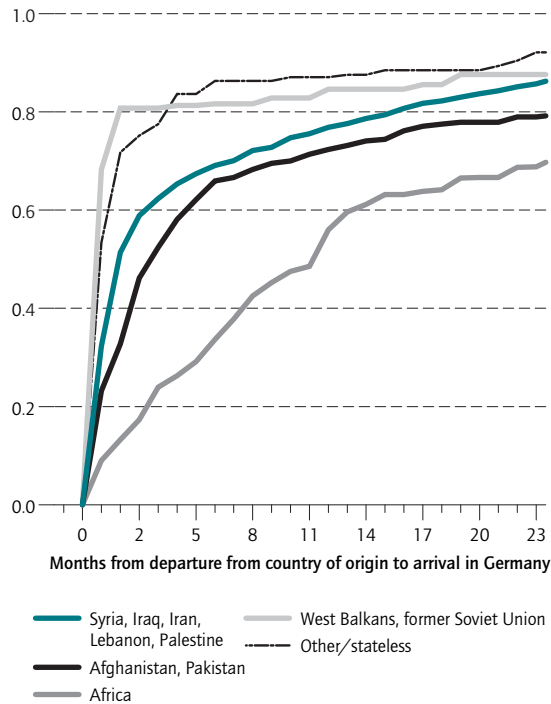
For respondents who traveled from their countries of origin directly to Germany, the trip took an average of 35 days. Travel from transit countries where the respondents had stayed for more than three months took an average of 49 days.⁸ The total duration of the journey from the country of origin to Germany (including stays in transit countries) varied by region of origin (Figure 2). For example, within one month of their departure, 81 percent of refugees from the Western Balkan and post-Soviet states and half of refugees from Syria and other Middle Eastern countries had arrived in Germany. However, this was true for only one-tenth of refugees from Africa. The geographical locations of the countries of origin do not account for all of these differences. Respondents' options for passage through transit countries and personal financial situations could also be significant factors.

Over time, the financial costs and duration of travel to Germany have fallen. While refugees who left their country of origin or transit country during the first six months of 2013 spent an average of €7,229 to reach Germany, those who left during the first six months of 2015 spent only around €6,900. By the second half of 2015, the average cost was only €5,232. At the same time, the time spent in transit decreased from an average of 79 days to 38 days for those traveling directly to Germany and 22 days for those traveling through a transit country (Fig-

Figure 2

Length of time from departure from country of origin to arrival in Germany

Cumulative share of the people who entered Germany



Notes: We used an inverted Kaplan-Meier estimator to calculate the probability of arriving in Germany at a specific point in time.

Example: The probability of arriving in Germany one month after leaving their respective country of origin is 52 percent for people from Syria, Iraq, Iran, Lebanon, and Palestine, 33 percent for people from Afghanistan and Pakistan, 13 percent for people from Africa, and 81 percent for people from West Balkan and former Soviet states.

Source: IAB-BAMF-SOEP Refugee Survey 2016; weighted values.

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ure 3).⁹ When interpreting the values for the second half of 2015, it should be kept in mind that people with long journeys to Germany are under-represented at the end of the sampling period because they had not yet arrived in Germany at the time of the survey.

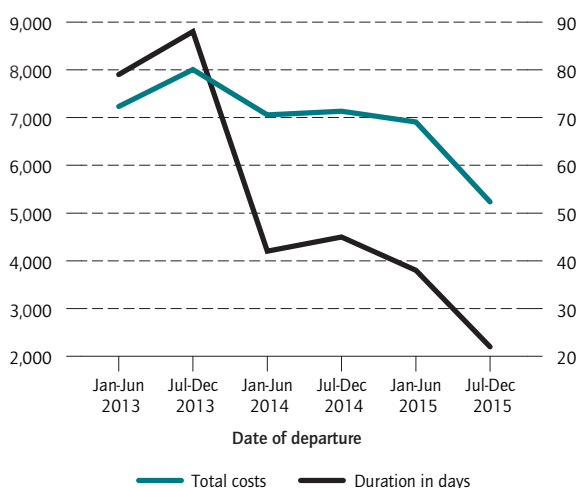
⁸ "Duration" is defined as the period from departing the last place of residence in the country of origin or transit country until arriving in Germany. Duration and costs are both based on the date of departure. Only departures between January 2013 and January 2016 were taken into account.

⁹ The findings are also robust when changes in the composition of countries of origin are considered. The results of a multivariate analysis controlling for the effects of the country of origin are available upon request.

Figure 3

Travel time to destination country and costs of travel for refugees

First half of 2013 to second half of 2015



Notes: Answers given in dollars were converted into euros according to annual exchange rates.

Source: IAB-BAMF-SOEP Refugee Survey 2016; weighted values.

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Educational backgrounds and professional skills

Diverse levels of formal education

Levels of formal education vary widely in our sample of refugees. Around 37 percent of adult respondents attended secondary school in their country of origin and 32 percent graduated (Table 2). The vast majority of secondary school graduates had general diplomas that are approximately equivalent to a university entrance qualification. On average, those who attended and/or graduated from secondary school completed 12 years of schooling.

A total of 31 percent of respondents attended and 22 percent completed middle school. Those who attended middle school completed nine years of school on average, and middle school graduates completed ten. A further five percent attended other types of schools, and three percent received certificates of completion. On average, those who graduated spent 11 years in school and those who did not, ten years.

On the other end of the spectrum, ten percent of respondents had only primary school education (attending for six years on average) and nine percent did not have any formal education. In total, 26 percent of the school attendees in the random sample had dropped out of school. Only one percent of respondents had graduated from a school in Germany and one percent were currently enrolled in school in Germany (Table 2). This low percentage is likely due first to the fact that most of the respondents are adults and second to the short time they have lived in Germany.

A total of 55 percent of respondents have spent a minimum of ten years in formal schooling, achieving what is considered the minimum level of education in Europe. Whereas 58 percent of refugees have spent ten or more years in formal schooling, vocational training or colleges and universities this is true for 88 percent of the German population at present. We must remember that war, persecution, and forced migration have disrupted many refugees' educations. Due to the differences in education systems, comparing school types across countries is only possible to a limited extent. The 2014 SOEP findings indicate that 36 percent of the German resident population aged 18 and older had completed upper or technical secondary schools (Gymnasium, Fachoberschule), while 56 percent had completed intermediate or lower secondary school (Realschule, Hauptschule). Accordingly, the educational structure of the refugee population differs less from that of the German resident population at the upper end of the educational spectrum, but shows a much smaller percentage of the population in the middle of the spectrum and a significantly greater percentage at the lower end.

Table 2

School attendance, graduation, and years of attendance by school type

School type	Percentage of respondents aged 18 and older		Years of attendance	
	School attendance	Graduation	All school attendees	With graduation
No school	9	–	–	–
No response	7	–	10	–
Still in school ¹	1	–	6	–
Primary school	10	–	6	–
Middle school	31	22	9	10
Secondary school	37	32	12	12
Other school	5	3	10	11
Total	100	58	10	11

1 "Still in school" refers to respondents who are attending school in Germany but did not attend school in their country of origin or did not provide a response to the respective question. – "School attendance" was modified to "School attendance with graduation" when the level of school completed was higher than the response to the question about highest level of school attendance.

Source: IAB-BAMF-SOEP Refugee Survey 2016, weighted.

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Among refugees from countries long plagued by war and civil war such as Afghanistan, areas bordering Pakistan, Somalia, and Sudan, the percentage of respondents who dropped out of school or never started school is especially high. Eritrea is a special case, because educational certificates are not issued there until people have completed military service, which often lasts for ten years. That means the number of school attendees in the country is relatively high, but the percentage with diplomas or certificates is very low.¹⁰ Ethnic minorities, such as Roma from the Western Balkan states or Yazidi from Iraq and Syria, have relatively low educational levels. Discrimination in access to educational institutions is likely to have played a key role in this. Syrian nationals have a relatively high level of education because access to educational institutions was guaranteed there up to start of the civil war there in 2011. Refugees from Iran and the post-Soviet states appear to have similarly high or even higher educational levels.

Low percentage of refugees with higher education or vocational training

A total of 19 percent of respondents have attended a university or other institution of higher education, while 13 percent have a university degree. A further 12 percent have participated in an on-the-job training program or other vocational training program, and six percent have vocational qualifications (Table 3). On average, university graduates have spent five years at universities, and respondents with vocational training qualifications completed three-year programs. In comparison, the 2014 SOEP findings show that 21 percent of the German population have a university degree and 59 percent have vocational training qualifications.

This large disparity in vocational training is due only in part to the level of economic development and war-related circumstances in the countries of origin. Most of these countries do not have an educational system that is comparable to the German vocational training system. Many people work in trades and technical or commercial professions that do not require a formal education. Therefore, many refugees may have vocational skills that they acquired through on-the-job training or other educational programs that would be useful in Germany but for which they have no educational diplomas or certificates.¹¹

¹⁰ See Susanne Worbs, Eva Bund and Axel Böhm, "Asyl – und dann? Die Lebenssituation von Asylberechtigten und anerkannten Flüchtlingen in Deutschland. BAMF-Flüchtlingsstudie 2014," *Research Report* 28 (2016).

¹¹ See Marie-Claire von Radetzky and Kristina Stoeve, "Bildungsstand syrischer Flüchtlinge – 5 Gerüchte auf dem Prüfstand", *Cologne Institute for Economic Research Study* 20, 1–3 (2016); and bq portal, *Berufsbildungssysteme, Syrien* (2016), <https://www.bq-portal.de/de/printpdf/5077> (accessed on October 20, 2016).

Table 3

Vocational training and university education: Attendance and graduation

Percentage of persons aged 18 and over, and average number of years in vocational training and university education

	Percentage of respondents aged 18 and older		Average number of years in education	
	Attendance	With graduation ¹	All attendees	Persons with graduation
No response	1	–	–	2
None	69	–	–	–
Company-based training/ vocational school	9	6	3	3
Company-based training/ vocational school (current) ²	3	–	not available	–
Universities/technical colleges	19	13	4	5
Total	100	19	4	4

¹ Only graduation from vocational training programs and universities abroad.

² Attendance/graduation in Germany.

Source: IAB-BAMF-SOEP Refugee Survey 2016, weighted.

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The results also showed differences in the educational levels of men and women: 37 percent of women and 32 percent of men had not completed formal schooling, while 71 percent of women and 68 percent of men had not completed a university degree or vocational training. When comparing childless women to childless men, however, the percentage of women who had not completed formal schooling was lower than that of men (29 percent against 31 percent). The gender gap in vocational education disappeared entirely when considering only childless women and men.

Refugees have high educational ambitions

The survey results provide evidence of respondents' educational aspirations: A total of 46 percent of the adult refugees intended to complete secondary school in Germany and 66 percent planned to obtain vocational qualifications or university degrees. And at 23 percent, slightly more than one-third of the latter group wanted to obtain a university degree.

These results indicate that the educational structure of the refugee population is likely to change dramatically in the years to come. However, it would be premature to draw conclusions about the extent to which these refugees will actually attend and graduate from educational institutions in Germany based on their current educational plans. Furthermore, these individuals do not have fixed timetables: many want to work first and invest in education and training later.

Measured against their aspirations, these refugees still show a relatively low level of participation in the German educational system. During the survey period, five percent of the adult refugees were attending German schools and universities or participating in a training program. But here it should be taken into account that around 55 percent of respondents were still in the asylum process and nine percent had been granted “tolerated” status (*Duldung*), meaning that their asylum application has been rejected but that they have been granted a temporary stay. In many cases, these refugees’ proficiency in German is still too low to attend an educational institution. Taking all of these factors into account, it seems likely that participation in the education system will increase among this group of refugees.

German language proficiency initially low but improving

Around 90 percent of respondents reported that they did not know any German before migrating to Germany, but almost 30 percent rated their English speaking and reading skills at the time of the survey as good or very good. During the survey period, respondents reported that their German had improved significantly since they arrived. A total of 18 percent of respondents who had spent less than two years in Germany rated their German proficiency as good or very good; 35 percent said it was satisfactory, and 47 percent indicated that they had little or no knowledge of German. Of those who had been in Germany for more than two years, 32 percent reported having good or excellent German skills and 37 percent reported having satisfactory German skills.

Growing numbers of refugees have taken part in language learning programs since 2015. The BAMF integration courses are an important publicly funded language learning program (Box 3). There are also a series of other language programs, including the ESF-BAMF courses in German for professional purposes, introductory German and other language learning programs sponsored by the Federal Employment Agency (BA), as well as programs organized by individual federal states and municipalities, charitable organizations, and volunteers.

Almost no data are available on the scope of language programs available and participation in these programs. At the time of the survey, one-third of respondents had attended integration courses. An additional five percent had participated in the ESF-BAMF German courses and eight percent in the BA’s¹² introductory courses or similar language learning programs. Many more attended lan-

¹² Some of the respondents who said they had participated in a BA introductory German course may actually have participated in a different BA language learning program.

Box 3

Legal framework for attendance of integration courses

Integration courses are Germany’s key publicly funded language support program. They include comprehensive language teaching consisting of an average of 600 lesson units and an orientation course that now has 100 units. Learners complete the course with knowledge of German at the B1 level of the Common European Framework of Reference for Languages, and are given regular language tests throughout the course to monitor their progress. Until November 2015, “tolerated” refugees and people with ongoing asylum procedures were not allowed to participate in an integration course. Since November 2015, however, “tolerated” refugees and asylum applicants expected to receive legal permanent residency in Germany – which currently applies to refugees from Eritrea, Iran, Iraq, Somalia, and Syria – can apply for permission to take a BAMF integration course. And as in the past, refugees who have recognized protection status also have the right to apply. There is no legal right to language courses. Since the Integration Act came into effect in August 2016, participation in an integration course is binding and non-attendance can be penalized.

guage courses offered by federal states, municipalities, charities, and other organizations. In total, two-thirds of respondents had attended one type of language course or another. Of those who were attending or had attended a language course, 22 percent have participated in more than one program.¹³

Refugees not only participate in formal language learning programs but also utilize other opportunities for learning German. A large majority (71 percent) of respondents reported using media such as the Internet, television, newspapers, and radio to learn the language. Almost one-third were learning German from relatives, friends, or acquaintance, and around 30 percent were using language-learning CDs, Internet courses, and other multimedia learning aids.

A multivariate analysis of the determinants of refugees’ German skills showed a strong, statistically significant relationship between language course attendance and improvement in language proficiency. It also showed significant positive correlations between gains in language proficiency and duration of stay, recognition of claims for

¹³ See Herbert Brückner et al. (2016a), *Ibid.*

refugee protection, educational levels, and living in private accommodations rather than refugee shelters. The correlations are negative, however, for women as well as for refugees from safe countries of origin.¹⁴

First steps: integration into the job market and education system

Many refugees come to Germany with work experience

Refugees' integration into the job market is likely to depend not only on their education, German proficiency, and other skills, but also on the work experience they acquired in their respective countries of origin. Of the 18- to 65-year-old respondents, 73 percent reported having worked before coming to Germany. However, there was a significant gap between the men and women surveyed: 81 percent of male respondents but only 50 percent of female refugees had work experience.

The refugees' job structures in their respective countries of origin provide initial insights into their occupational skills. On average, 27 percent were self-employed, 30 percent were non-salaried employees, 25 percent were salaried employees in non-management positions, and 13 percent were salaried employees in management positions.

Most refugees want to work

Survey results showed that respondents are highly motivated to work: 78 percent of unemployed respondents reported that they were "definitely" and another 15 percent "probably" planning to work in the future. The results also reveal gender differences: 97 percent of men and 85 percent of women reported that they "definitely" or "probably" wanted to work. This shows that women have a strong desire to work, even though their employment rate is still low.

Job market integration just beginning

During the survey period, 14 percent of respondents had jobs. The majority of these respondents can be classified into the following groups: full-time employees (32 percent), part-time employees (21 percent), and participants in internships or vocational training programs (24 percent). Employment was nine percent among refugees who came to Germany in 2015 and 2016, 22 percent among those who arrived in 2014, and 31 percent among those who arrived in 2013 or earlier.¹⁵

Patterns of job market integration among recently arrived refugees correspond closely to the process and timing of job market entry for past waves of refugees.¹⁶ To understand this development, it is important to keep in mind that 55 percent of the respondents were still awaiting a decision on their asylum claim at the time of the survey and only had limited access to the job market.¹⁷ In many cases, they were also still lacking the necessary German skills.

A large share (42 percent) of respondents with work experience found their first jobs in Germany through personal contacts: family members, friends, or acquaintances. However, this percentage is significantly higher among other migrant groups, 55 percent of whom found their first jobs in Germany through social contacts.¹⁸ A higher percentage (60 percent) of refugees without vocational or university degrees found their first jobs through personal contacts, while refugees with vocational or university degrees had more success finding a job through employment agencies or job centers (33 percent), newspapers, and the Internet (ten percent).

Career counseling programs still used relatively little

Twenty-two percent of the respondents had taken advantage of the BA career counseling programs and 19 percent had used the services of a job center, while some had used several of the available programs.¹⁹ An additional 20 percent knew of the programs offered by the BA and 19 percent were aware of job center services but had not used them (yet). The longer respondents had stayed in Germany, the more likely they were to be aware of these counseling programs. Around one-fifth of recently

¹⁶ Herbert Brücker et al., "Geflüchtete Menschen in Deutschland – eine qualitative Befragung," *IAB Forschungsbericht* no. 9 (2016b); Zerrin Salikutluk, Johannes Giesecke and Martin Kroh, "Geflüchtete nehmen in Deutschland später eine Erwerbstätigkeit auf als andere MigrantInnen," *DIW Wochenbericht* no. 35 (2016): 749–56.

¹⁷ Asylum applicants cannot pursue gainful employment until three months after registering. Asylum-seekers from safe countries of origin who submitted their asylum application after August 31, 2015, are not allowed to work at all. Hurdles refugees must overcome in order to work include the BA verification of the comparability of working conditions, approval from the immigration authorities, and the priority checks that the BA still conducts in some regions. However, the main hurdle are the legal uncertainties about their future residency status during the asylum procedure.

¹⁸ See Herbert Brücker et al., "Arbeitsmarktintegration von Migranten in Deutschland: Anerkannte Abschlüsse und Deutschkenntnisse lohnen sich," *Die IAB-SOEP-Migrationsstichprobe: Leben, lernen, arbeiten – wie es Migranten in Deutschland geht: IAB-Kurzbericht* no. 21.3 (2014): 21–8; Philipp Eisnecker and Diana Schacht, "Die Hälfte der Geflüchteten in Deutschland findet ihre erste Stelle über soziale Kontakte," *DIW Wochenbericht* no. 35 (2016): 757–64.

¹⁹ The Federal Employment Offices (BAs) are responsible for asylum-seekers looking for work during their asylum procedures and for people with a temporary suspension of the deportation (*Duldung*), if their asylum claims have been rejected. Job centers are responsible for people whose asylum applications have been approved and who receive benefits to cover their basic costs in cases of need.

¹⁴ See Herbert Brücker et al. (2016a), *Ibid*.

¹⁵ Due to the low number of cases, these values can only be interpreted as preliminary. For those who migrated to Germany before 2013, these were relatives and other people in the household surveyed.

Table 4

Connection between employment and integration measures or advisory services

Estimated impact on employment probabilities

Language courses ¹						
BAMF integration course	0.100** (0.024)					
ESF-BAMF language courses ²	0.304** (0.061)					
BA introductory language program ³	0.084** (0.032)					
Career counseling and other advisory services of the BA ⁴						
BA Perspectives for Refugees ⁵	0.155** (0.050)					
General job counseling	0.084** (0.020)					
Career counseling	0.075** (0.024)					
Observations	1,776	2,107	2,079	2,128	2,131	2,135
R ²	0.261	0.251	0.232	0.236	0.233	0.232

Notes: Significances at 1 or 5 percent level are denoted by ** and * respectively. The standard deviation is given in parentheses. -- The dependent variable in each case is a dummy variable that has the value of 1 if a person was employed at the time of the interview (full-time, part-time, in marginal employment, in company-based training, or in an internship) and 0 if not. -- The model is estimated using the method of Ordinary Least Squares (OLS) regression. -- As additional control variables, we used sex, age, age squared, age on arrival, educational degrees before immigration, region of origin, duration of stay, duration of stay squared, children, employment prior to immigration, housing, current language knowledge, language knowledge before immigration, health status, and fixed effects for the month of the interview, municipal size classes, general job search assistance, German courses, other integration measures, residency status, and federal state.

1 The reference group consists of persons who did not take part in the respective language course. Individuals who are expected to have dropped out of a language course are not considered in the estimations.

2 The course is designed to teach occupation-specific language skills.

3 Respondents were asked about their participation in introductory language courses offered by the BA. Since many respondents stated participation in these language courses at a point in time when they were not yet or no longer being provided, one must assume that this variable also includes other language programs offered by the BA.

4 The reference group consists of persons who had not yet received advice or counseling or who were not aware of advisory centers.

5 This is a labor market measure designed by the Federal Employment Agency to assess refugees' vocational skills.

Example: For a person who received general job counseling, the probability of being employed is 8.4 percent higher than for a person who did not receive general job counseling or who is not yet familiar with the job counseling centers.

Source: Own estimates based on the IAB-BAMF-SOEP Refugee Survey 2016.

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arrived refugees reported that they needed and received help finding a job; two-fifths said they needed help but had not received any. These findings indicate that the BA counseling programs are not being utilized fully despite growing awareness of their existence.

Language and counseling program effectiveness

Many programs support the integration of refugees into the German job market. In order to acquire an initial impression of how effective these programs are, we exam-

ined the relationship between employment and various programs. The results should be understood as a statistical correlation between participation in a program and participation in the job market, and not as a causal relationship.

We initially examined three language programs. The first were the integration courses offered by the Federal Office for Migration and Refugees (BAMF). Second, we examined the ESF-BAMF courses in German for professional purposes, which are also offered by BAMF. These courses are designed to teach advanced language skills with practical application to specific occupations, meaning that those who complete the program leave with more advanced language skills than participants in integration courses and with a knowledge of the specific vocabulary used in their occupation. Third, we examined the introductory-level language course the BA offered in 2015 as well as other BA language programs that were designed to teach both basic and occupation-related language skills.²⁰

In the estimates (Table 4), respondents who had not (yet) participated in the relevant language courses are the comparison group. The estimates show that those who had completed a language course have a significantly higher probability of employment than people who had not participated in one. The effects are the greatest for the ESF-BAMF language courses. This could be because the ESF-BAMF language courses teach a higher level of occupation-related language proficiency.

The second part of the regressions (Table 4) examine the extent to which participation in the BA's "Perspektive für Flüchtlinge" (perspectives for refugees) program, which is designed to build on refugees' existing occupational competencies and skills, and in the BA's job market and vocational counseling programs is correlated with the refugees' employment. As the results of the estimate show, all of the programs have a statistically significant correlation with the refugees' likelihood of being employed. Since those with greater proximity to the job market and skills that are relevant for job market integration are also more likely to participate in these types of programs, the effects cannot be interpreted as causal proof of their effectiveness. Future research is needed to provide more answers here.

²⁰ The survey asked about participation in the introductory BA course that took place from October to December 2015. However, many of the respondents said they had attended the course outside of that period. This may be due to respondents confusing the introductory BA course with the other language-learning programs the BA offers (e.g., occupation-related language courses offered under the Social Insurance Code III sect. 45). Due to this possible measurement error, in a wider sense this variable not only encompasses the introductory BA courses but other BA language-learning programs as well.

Table 5

Attitudes about forms of government and democracy (agreement in percentages)⁷

Database	IAB-BAMF-SOEP	World Values Survey (WVS)		Difference	
	Refugees ¹	Population with German citizenship ^{2,3}	Countries in crisis ^{2,4}	Column A and B ⁵	Column A and C ⁵
	Column A	Column B	Column C		
Attitudes about forms of government					
There should be a democratic system.	96	95	91	(1)	5
You need a strong leader who does not have to be concerned with a Parliament or elections.	21	22	46	(-1)	-25
Experts, not the government, should decide what is best for the country.	55	59	70	(-4)	-15
Attitudes about democracy					
The people choose their government in free elections.	96	92	89	4	7
Women have the same rights as men.	92	92	67	(0)	25
Civil rights protect the people from government oppression.	93	83	80	10	13
The government taxes the rich and supports the poor.	81	71	63	10	18
Religious leaders ultimately determine the interpretation of laws.	13	8	55	5	-42

1 The response scale for the IAB-BAMF-SOEP survey in the questions on forms of government, which ranges from 1 (totally disagree) to 7 (totally agree), was condensed into disagreement (responses 1 to 4) and agreement (responses 5 to 7). The response options in WVS do not contain a neutral middle category, in contrast to the IAB-BAMF-SOEP survey. The responses in the IAB-BAMF-SOEP survey on the middle category (value of 4) are considered here "rejection." An alternative approach that treats the middle category as "no response" generates substantially similar findings. – In attitudes toward democracy, the response scale, which runs from 0 (should definitely not happen in a democracy) to 11 (should definitely happen in a democracy), was condensed into disagreement (responses 0 to 5) and agreement (responses 6 to 10).

The response options in WVS do not contain a neutral middle category, in contrast to the IAB-BAMF-SOEP survey. The responses in the IAB-BAMF-SOEP survey on the middle category (value of 5) are considered here "rejection." An alternative approach that treats the middle category as "no response" generates substantially similar findings.

2 The WVS response scale for the questions on forms of government, which range from 1 (totally disagree) to 4 (totally agree) were condensed into disagreement (responses 1 to 2) and agreement (responses 3 to 4). – The response scale, which ranges from 1 (should definitely not happen in a democracy) to 10 (should definitely happen in a democracy) was condensed into disagreement (responses 1 to 5) and agreement (responses 6 to 10).

3 For Germany, only persons with German citizenship were included.

4 Not included in the WVS are Syria, Afghanistan, and Eritrea. Countries defined as countries in crisis were: Algeria, Palestine, Iraq, Libya, Egypt, and Yemen.

5 Differences in percentage points. Estimates that suggest a statistically non-significant difference (Adjusted Wald Test, 99 percent level of significance) are in italics.

6 In Germany, the percentage of missing answers on questions about the form of government (don't know, no answer) is between one and four percent (WVS), in countries in crisis (WVS) between six and eight percent, and among refugees (IAB-BAMF-SOEP Survey) between 13 and 26 percent. It is impossible to determine from the data at hand to what extent these differences are due to differences in the survey instruments and situation, to language problems or social desirability bias. – In Germany, the percentage of missing answers on questions about attitudes toward democracy (don't know, no answer) is two percent or below (WVS), in countries in crisis (WVS) between six and ten percent, and among refugees (IAB-BAMF-SOEP Survey) between 11 and 20 percent. It is impossible to determine from the data at hand to what extent these differences are due to differences in the survey instruments and situation, to language problems or social desirability bias.

Sources: IAB-BAMF Refugee Survey 2016; World Values Survey, Wave 6, 2010–2014.

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Much in common: Comparing refugees with the German population

Democratic values

Refugees' social and cultural as well as economic participation in Germany will depend to a great extent on their personal values and how these values continue to develop and change. Many respondents come from countries under dictatorships, in which democratic traditions and the civil society structures are poorly developed or have been destroyed in recent years. To what extent refugees' experience living under dictatorial regimes is expressed in either lower or higher levels of support for democracy has been measured here based on the respondents' levels of agreement with various statements dealing with forms of government and democratic principles.

To this end, we examined respondents' attitudes about forms of government in the survey, as well as their understanding of democracy and the roles of men and women in society. Most of the questions are based on the World Values Survey (WVS), which enables a comparison between the German population and – with some limitations – the populations of the countries of origin.

Ninety-six percent of respondents expressed support for the statement, "There should be a democratic system" (Table 5, Column A). Respondents' answers almost completely matched those of the Germans who responded to the WVS (Column B). However, around one-fifth of the refugees surveyed agreed partially or completely with the statement, "You need a strong leader who does not have to be concerned with a Parliament or elections." And 55 percent agreed partially or completely with the state-

ment, “Experts, not the Government, should decide what is best for the country.” These two statements are problematic from a democratic political viewpoint, but the refugees did not report a higher level of agreement with them than German respondents, 22 percent of whom supported the idea of a strong leader and 59 percent of whom were in favor of rule by experts.

However, significantly more of the WVS respondents in crisis regions agreed with these anti-democratic statements. In Egypt, Algeria, Iraq, Yemen, Libya, and Palestine, almost one in two respondents supported the idea of a strong leader, and 70 percent thought that experts are more competent policymakers than the government (Table 5, Column C).

The survey respondents also gave similar answers to the German respondents on questions of “what should happen” in a democracy: 96 percent of refugees and 92 percent of Germans believed “The people [should] choose their government in free elections.” Both refugees and Germans supported equal rights for women: 92 percent of both groups agreed with the statement, “Women [should] have the same rights as men.”

In addition to freedom and equality, a particularly high percentage of refugees agreed with two statements dealing with the protection of civil rights and respect for the weak. Ninety-three percent of the refugees (compared to 83 percent of Germans) agreed that “Civil rights protect the people from government oppression”, and 81 percent of refugees (compared to 71 percent of Germans) supported the idea that “The government taxes the rich and supports the poor”. The refugees’ agreement with these two statements was thus around ten percentage points higher than that of the German respondents to the WVS.

The question of whether “Religious leaders [should] ultimately determine the interpretation of laws” probed respondents’ support for the separation of church and state. Only a minority of refugees (13 percent) agreed with this statement. Although this percentage is higher than that of German respondents to the WVS by a statistically significant amount (eight percent), it is 40 percentage points lower than the agreement rate that this statement receives in Egypt, Algeria, Iraq, Yemen, Libya, and Palestine (approximately 55 percent).

Thus, although many refugees come from regions in which over half the population supports the role of religious leaders in lawmaking and the idea of a strong government leader, their responses to questions about democratic principles in the IAB-BAMF-SOEP survey are much more similar to answers given by German respondents than they are to the responses of people in their countries of origin. With regard to these views, the ref-

ugees clearly represent a select group that differs vastly from the population of their countries of origin.

Gender role conceptions

In order to examine the similarities and differences in gender roles conceptions between refugees and the resident population of Germany, we compared levels of agreement with three statements. They dealt with the role of women in the working world and in the family context, and the value of education for girls as opposed to boys. Since the answer categories in the WVS were different from those in the IAB-BAMF-SOEP survey, we combined categories here as a means of harmonizing the surveys.²¹

The portion of German respondents who agreed with the statement, “Having a job is the best way for a woman to be independent,” is, at 71 percent, statistically significant and lower than that of refugees (86 percent, Table 6). There were statistically significant differences between refugees and the German population overall as well as within the gender groups. A comparison of the effect sizes (Box 4) reveals a medium overall effect size (0.34) and a larger effect size among men (0.46) than among women (0.21). The difference in the effect sizes for men and women is also statistically significant.

As for the statement, “If a woman earns more money than her partner, this inevitably leads to problems,” the German respondents in 2013 were more strongly for gender equality than the refugees: 29 percent of refugees and 18 percent of German respondents agreed with this statement. Among women, the difference was 30 percent to 20 percent and among men, 28 percent to 18 percent. Here, the differences among all groups were statistically significant. However, the effect sizes are relatively small and the differences are not statistically significant. For the overall random sample, the value is 0.25. For women it is also 0.25, and for men it is 0.32.

Eighteen percent of refugees and 14 percent of Germans agreed with the statement, “For parents, vocational training or higher education for their sons should be more important than vocational training or higher education for their daughters.” While female refugees agreed more strongly with this statement than German women (14 percent compared to 11 percent), there was hardly any difference between the respective groups of

²¹ The WVS contains three categories of answers to the question on the aspect of independent gainful employment and earnings (“agree,” “neither,” and “do not agree”). Here, we combined answers 5–7 in the IAB-BAMF-SOEP survey and assigned them to the “agree” answer in the WVS. The WVS contained four answer categories to the question about the education of sons and daughters (“completely agree,” “agree,” “do not agree,” and “completely disagree”). Here, we combined WVS answers 1 and 2 and categories 6 and 7 in the IAB-BAMF-SOEP survey into the “agree” category.

Table 6

Comparison of gender role conceptions between refugees and Germans

Agreement in percent

	Refugees ¹	Germans ^{2,3}	Standardized difference ^{4,5}
<i>Having a job is the best way for a woman to be independent.</i>			
Total	86	72	0.34**
Women	88	81	0.21*
Men	85	62	0.46**
N	2,123	1,914	
<i>If a woman earns more money than her partner, this inevitably leads to problems.</i>			
Total	29	18	0.25**
Women	30	20	0.25**
Men	29	18	0.32**
N	2,074	1,906	
<i>For parents, vocational training or higher education for their sons should be more important than vocational training or higher education for their daughters.</i>			
Total	18	14	0.10
Women	14	11	0.11
Men	19	20	0.02
N	2,121	1,922	

Notes: **, *: significant at the one and five percent level. The results were also calculated based on an alternative coding which in the SOEP considers only the categories 6 and 7 to represent "agreement." Based on this more conservative definition, none of the questions produced statistically significant differences between refugees and Germans.

1 The response scale in the IAB-BAMF-SOEP Refugee Survey, which ranges from 1 (totally disagree) to 7 (totally agree) was condensed into disagreement (responses 1 to 4) and agreement (responses 5 to 7).

2 The WVS response scale, which ranges from 1 (totally disagree) to 4 (totally agree) was condensed into disagreement (responses 1 to 2) and agreement (responses 3 to 4).

3 Only persons with German citizenship were considered in the estimations.

4 Adjusted Wald test.

5 Measure of the effect size based on standardized mean values.

Sources: IAB-BAMF-SOEP Refugee Survey (2016) and World Values Survey (2010–2014).

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men (19 percent compared to 18 percent). For this statement, the differences were not statistically significant in any group, and we can ignore any differences in the already low effect sizes (Table 6).

Therefore, depending on the statement in question and the gender of the respondent, differences in the understanding of gender roles between the refugees in our sample and the German population exist in both directions and to varying degrees.²²

²² For an in-depth analysis of the refugees' ideas on gender roles, see the qualitative preliminary study to this study (Herbert Brückner et al., (2016b, 2016c). See also Herbert Brückner et al., "Geflüchtete Menschen in Deutschland: Warum sie kommen, was sie mitbringen und welche Erfahrungen sie machen," IAB Kurzbericht no. 15 (2016).

Box 4

Calculation of effect sizes for differences between different groups

The significance of differences between two groups does not say anything about the size of the effects. The larger the sample, the lower the standard deviation, and the greater the probability that small differences are also statistically significant. In order to make the sizes of the differences in different samples comparable, Cohen (1988) proposed a procedure in which the difference of the average values is divided by the weighted standard deviation in the respective samples (Cohen's *d*).¹ Using this method, we can calculate the effect sizes of the differences in average values independently of size. Values in the range of 0.1 to 0.3 are considered small differences, 0.3 to 0.8 are medium differences, and 0.8 or greater are large differences.

¹ See Jacob Cohen, *Statistical power analysis for the behavioral sciences* (2nd edition). Hillsdale, NJ: Erlbaum, 1988.

When interpreting these statistics, it should be kept in mind that levels of agreement with fairly abstract norms may differ substantially from lived, everyday values.

Social participation and life satisfaction

Social contacts

Most of the refugees in the survey had only been in Germany for a short time. Social contacts and social networks play a key role in their participation in social life and integration into the job market and education system. Not only contacts to the German population but also to other newcomers can provide them with a source of information and facilitate their integration into the job market. On average, respondents to our survey had three new German contacts and five new contacts from their countries of origin (excluding relatives).

Not only the number of new contacts but also the frequency of contact is relevant for measuring social participation. In total, 60 percent of refugees have contact with Germans at least once a week, and 67 percent have weekly contact with people from their countries of origin. Both the number of new contacts and the frequency of contact with Germans increase with the level of education. Refugees living in a private apartment or home have more frequent contact with Germans than those living in refugee shelters, and refugees living in smaller municipalities have somewhat more frequent contact with Ger-

mans than those living in large cities. For the frequency of contact with people from the same country of origin, these trends are reversed.

Experiences with discrimination

Prejudice and resentments can create burdens that make it difficult for refugees to integrate into German society and that impede their participation in all areas of social life. Only ten percent of refugees report having experienced discrimination frequently, and another 36 percent report having seldom experienced discrimination. The respondents in our sample have encountered discrimination at a somewhat above-average rate relative to the migrant population in Germany as a whole (32 percent in 2015).

The self-reported experience of discrimination fluctuates only slightly among refugees from different educational groups. A higher share of those living in refugee shelters have encountered discrimination frequently than those living in private apartments or homes (12 percent and seven percent, respectively). Refugees who are married or in a relationship and those whose asylum application has been approved feel discriminated against less often; those with a better grasp of German feel discriminated against more often. With regard to the size of the municipality, there is no uniform pattern.²³

Life satisfaction

A key measure of quality of life is subjective life satisfaction. This can be understood as a comprehensive indicator of well-being, providing an initial idea of the extent to which the refugees' quality of life matches that of the German resident population. The comparison group here is that of non-immigrant SOEP respondents.

Their general evaluation of life satisfaction shows that refugees are less satisfied than non-immigrants overall, but the difference is relatively small – a finding that can be partially explained by the younger age structure of the refugee population. Greater differences appear when we examine satisfaction with individual areas of life. As expected, there is a large difference between refugees and people without an immigrant background when it comes to satisfaction with their living situation and a moderately large difference in satisfaction with income (Table 7).

Health

Overall, refugees are more satisfied with their health than non-immigrants; they rate their health status higher and

Table 7

Life satisfaction of refugees and individuals without a migration background

Indicator	No migration background	Refugees	Standardized difference
Age in years ¹	52.0 (18.9)	31.2 (10.8)	-1.14*
Sex ¹ (% female)	51.3	27.4	-
Life satisfaction ^{1,a}	7.25 (1.75)	6.86 (2.55)	-0.21*
LS Lodging ^{1,a}	7.92 (1.82)	6.28 (3.08)	-0.83*
LS Income ^{1,a}	6.38 (2.47)	5.64 (3.06)	-0.29*
LS Health ^{1,a}	6.56 (2.24)	7.72 (2.65)	0.51*
State of health ^{1,c}	3.31 (0.98)	3.92 (1.15)	0.61*
Health, concerns ^{1,e}	1.90 (0.68)	1.61 (0.76)	-0.42*
Loneliness ^{2,c}	2.03 (0.74)	2.71 (1.15)	0.86*
Depression ^{3,d}	1.56 (0.56)	1.85 (0.73)	0.50*
N	20,548	2,349	

Notes: **, *: significant at the 1 to 5 percent level. – Means, standard deviations in parentheses. – LS – current overall life satisfaction. Higher values in columns 5 and 6 represent larger effect sizes. According to Cohen (1992), a standardized difference of between 0.2 and 0.5 represents a small effect size, between 0.5 and 0.8 a medium effect size, and greater than 0.8 a large effect size.

¹ Surveyed in 2015.

² Surveyed in 2013.

³ Surveyed in 2016.

^a Scale range from 0 to 10.

^b Scale range from 1 to 7.

^c Scale range from 1 to 5.

^d Scale range from 1 to 4.

^e Scale range from 1 to 3.

Sources: IAB-BAMF-SOEP Refugee Survey 2016, weighted; SOEP.v31, years 2000–2014.

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are not as worried about their health (Table 7). While this result may be surprising, one possible explanation is the relatively young average age of the refugees. A multivariate analysis that controls for age found no significant differences between refugees and non-immigrants.²⁴ Another plausible explanation is that only relatively healthy people embarked on the long, often strenuous journey to Germany and actually arrived here.

Other survey results qualify the finding of a comparatively good self-reported health: refugees suffer much more from loneliness and depression than non-immigrants.

Conclusion

The survey of recently arrived refugees to Germany confirms some existing findings but also provides a much fuller picture. Most of the refugees indicated that they

²³ For an in-depth analysis, see Herbert Brücker et al., (2016a), Ibid.

²⁴ The results are available upon request.

left their countries of origin, and in some cases also transit countries, due to the threats of war, violence, and persecution. Precarious personal living conditions were another commonly cited factor in the decision to migrate. Respondents reported having chosen Germany as their destination country primarily because of the high level of protection granted to refugees. The costs and risks of the journey are high, but have fallen over time.

The refugees in our sample differ widely in educational levels: On the one hand, a comparatively large percentage have attended secondary school or higher, and on the other hand, another large group have only attended primary school or no school at all. Sixty-one percent have attended school for at least ten years, which is the minimum standard in Europe. Only around 30 percent have attended a university or vocational school, and less than 20 percent graduated with a degree or certificate of completion. However, around two-thirds of the refugees plan to pursue university or vocational education in Germany, so we can assume that their level of education will rise – particularly since this report does not take children and their schooling into account. Upon arriving in Germany, most refugees do not know any German, but a significant increase in language proficiency is noticeable over time.

The integration of refugees into the job market is just beginning, but the longer these individuals stay in Germany, the more likely they are to find jobs. The initial results correspond to the patterns of integration observed in past waves of refugees and the process and timing of their labor market entry.

Only a relatively small percentage of respondents are aware of or have been able to take advantage of existing career counseling and integration programs available to refugees, including some just launched in 2015. Around one-third of the refugees represented in the sample have participated in integration courses; two-thirds

have attended other language courses. A minority of refugees have taken advantage of the many advisory programs and job placement services available, for instance career counseling to foster refugees' job market integration. The initial results indicate that systematic integration measures are capable of significantly increasing refugees' job market participation.

Participation and inclusion do not only depend on integration into the job market and education system. A high level of shared values between refugee and the German population will also play an important role. A comparison of values shows that the refugees hold very similar basic convictions about democracy and the rule of law to the resident German population, and differ significantly in these values from the populations of their respective countries of origin. When it comes to beliefs about gender roles, Germans and refugees show both similarities and differences.

As expected, the refugees are less satisfied with their living and income situations than the non-immigrant German population. However, the differences in life satisfaction are few. Surprisingly, refugees report higher satisfaction with health than the comparison group – a finding that may be related to the low average age of the refugees in the sample.

The initial results of the IAB-BAMF-SOEP survey indicate a great deal of heterogeneity among refugees with regard to their biographies, educational backgrounds, values, and personality traits. Considering their low average age and high aspirations for education and employment, they hold enormous potential. Their integration into the job market, the education system, and other areas of society is just beginning, we can expect to see significant progress in the future. The IAB-BAMF-SOEP Refugee Survey will continue to track these developments over the years to come.

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Prof. Dr. Jürgen Schupp, Director, Socio-Economic Panel (SOEP) at DIW Berlin

EIGHT QUESTIONS FOR JÜRGEN SCHUPP

»Refugees have a strong educational orientation«

1. Mr. Schupp, more than 2300 refugees above the age of 18 have been interviewed in a representative survey. Which countries do these refugees come from? For the first time, we have drawn a representative picture of the influx of refugees to Germany between January 2013 and January 2016. The large majority of refugees in our sample—about 60 percent—came from Syria, but we also have many from Afghanistan and Africa.
2. What were the refugees' main reasons for fleeing their home countries? For the large majority, the main reason was fear of violent conflicts and war. That was the case for 70 percent of the refugees in our sample. We can refer to this as forced migration. Other reasons reported include poor personal living conditions, a bad economic situation, and discrimination in the country of origin. One of the main reasons reported by men from African countries was forced military recruitment.
3. How high were the risks and costs of migration for these refugees? The financial costs amounted to around 7,000 euros per person. That was the average amount of money each refugee had to pay to travel from their home country to Germany. That is a large sum of money and therefore I think that this is also an indicator of a certain degree of selection, because not everybody who lives in these countries can afford such a journey to Europe.
4. What is the average level of education of the refugees? In terms of educational levels, we see a polarized picture. On the one hand we see 31 percent of the refugees who attended at least middle school and 37 percent who attended secondary school. But on the other hand, we also have 10 percent of the refugees who attended only a few years of elementary school and 9 percent who never went to school.
5. How much do the personal values of refugees differ from the values generally held in Germany? We were surprised to find that there is not a very big difference in values between refugees and Germans. The majority of refugees value democratic systems in general and our political system in Germany in particular. They also agree with the values of equal rights and equal opportunities for men and women. But if we compare the values of Syrian, Afghan, and Iraqi refugees who came to Germany to the averages for people still living in their home countries, we find that the acceptance of democratic values is lower in the respective countries of origin. We made this comparison using what is known as the World Value Survey, a global survey that asks values-related questions to people in many countries worldwide. Obviously there is also a kind of selection of values, because those individuals who have made their way to Germany have a much greater tendency to share our values.
6. What language skills do refugees bring with them to Germany? The majority do not know any German upon arrival. Only 10 percent know some German. But compared to other migrant populations, we see a more rapid improvement in German language skills. Of course, integration policies foster refugees' language learning ambitions and help them to gain access to German language courses.
7. What percentage of refugees succeed in entering the German labor market? When we surveyed the refugees this year, only about 13 percent had already entered the labor market, but if we compare this group to those who came in 2013, we already see an increase. That means the longer the refugees stay in Germany, the more they will enter the labor market. We expect that in about five years, we will see about 50 percent of the refugees in employment.
8. To what extent are German integration policies successful in integrating refugees into German society and the job market? We have to consider that a lot has already changed in the last year. There have been improvements in the processing of asylum claims after refugees arrive in Germany. This process lasts about seven months and improvements have already been made to reduce this period. Meanwhile, refugees are now able to start learning German sooner, and significant improvements have been made in programs to foster integration. In addition to political measures, we should not forget that there is a broad support network for refugees from the broader population.

Interview by Erich Wittenberg

IT and communication technologies dominate adolescent downtime

By Sandra Bohmann and Jürgen Schupp

Today's teenagers spend their free time very differently than they did 15 years ago: engagement with IT and communications technologies is now their most significant leisure activity. Representative statistics based on data from the Socio-Economic Panel (SOEP) longitudinal study indicate that Internet and computer-based recreation plays a major role for more than 95 percent of all 17-year-olds in Germany, regardless of gender. Even though access to the Internet and computer-based technologies is now widespread across all social classes, usage patterns differ according to certain socio-demographic characteristics. While lower household income is associated with higher Internet activity, it is not a factor in social networking or gaming. The latter remains a male domain, but boys' and girls' Internet usage and social network engagement do not differ: here the type of high school plays a *determining* role. Students in academically oriented German high schools (Gymnasien) are more likely to be active on social media on a daily basis than are students in secondary schools (Realschulen and Hauptschulen), which are less academically oriented. Education policymakers have started acknowledging the pivotal role that technology plays in young people's lives and have announced a campaign targeted to adolescents of all social segments and at all types of high schools. It aims to strengthen students' command of technology while discussing the risks of digital communication, and investigate how education can leverage more of the new opportunities in digital media.

The importance of computer-based and Internet activities is growing

It is hard to miss the extent to which digitalization and technology in general permeate teenagers' lives in public spaces, schools, and the family. No other way of spending leisure time has experienced such a rapid dynamic development as electronic entertainment media – the Internet above all, followed by Internet-based chats, gaming, and engagement with social networks. Based on the SOEP data on teenagers for the period 2000–2014, the report at hand demonstrates the extent to which technological progress has changed everyday life for teenagers. It also looks at how structural differences in the use of modern information and communication technologies have emerged and the way their use has changed over time.

Computer-based and Internet leisure activities are at the top with teenagers

Almost all of the 17-year-olds who were surveyed between 2012 and 2014 stated that they engaged in at least one IT-related leisure activity on a daily or weekly basis (Figure 1). At the beginning of the 2000s, slightly more than half of the 17-year-olds gave this answer. A close-up view of the IT-related activities with which teens spend their leisure time shows that the explosive increase in this leisure area is based on the increased use of the Internet for surfing and chatting, and engagement with social networks. On the other hand, the proportion of those who play computer games at least once a week has remained relatively steady at approximately 50 percent of teenagers since the early 2000s. It has even dropped slightly of late.

The trend presented above is primarily driven by the fact that more and more young people spend time with IT- and communication-based leisure activities on a daily basis. This underlines the predominantly high everyday relevance of computer and Internet technology. Fifteen years ago, less than 30 percent of young people spent time with computers on a daily basis. Of the respondents who were surveyed between 2012 and 2014, 85 per-

Box 1

Baseline data

The baseline data are provided by the Socio-Economic Panel (SOEP)¹ and its survey of young people in particular. For the longitudinal study, DIW has commissioned KANTAR Public (formerly TNS Infratest Sozialforschung) to survey an annual representative sample of households in Germany. Currently, over 20,000 persons in over 11,000 households are participating in the survey.

Data on 17-year-olds

Since 2000, 17-year-olds have received annual questionnaires requesting information on their leisure activities and use of information and communication technologies. Overall, 6,081 of the 17-year-olds born in the period 1984–2014 completed the in the year when they turned 17. Around 5,930 of them provided information on how they spend their downtime. This report uses all the available years in order to map trends over time. For this purpose, several birth years have been combined into cohorts (Table 1). Extrapolation factors make it possible to weight the

¹ For information on the SOEP, see Gert G. Wagner et al.: The German Socio-Economic Panel Study (SOEP) – Scope, Evolution and Enhancements. Schmollers Jahrbuch 127 (1) (2007), 161–191.

Table 1

Pooling of cohorts by birthcohorts and survey-years

	Survey years			
	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Birthcohorts	2001–2003	2004–2007	2008–2011	2012–2014
Cohort 1: 1984 to 1986	1,027			
Cohort 2: 1987 to 1990		1,386		
Cohort 3: 1991 to 1995			1,434	
Cohort 4: 1995 to 1997				1,673

Source: SOEP v.31, 17-year-olds.

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Pooling cohorts allows investigating time-trends while keeping enough observations for statistical inference.

data to make them representative, which allows for generalizing upon the information the young people from each birth year give to the interviewers.

cent said they spent time on the computer or Internet every day. While television dominated teenagers' daily leisure activities for years, they have now come to prefer engaging in social networks or surfing and chatting online as ways of spending their downtime. Watching television is a leisure time activity that is increasingly done weekly rather than daily.¹

The data captured in the SOEP only provide information on the portion of daily use, but the most recent German Federal Statistical Office time use survey, which was conducted in 2012 and 2013, provides more precise data on the amount of time spent with IT-related activities per day. A comparison with data from the previous time use survey from 2001/2002 (Table 1) shows that not only the portion of children and teenagers who spend their free time with IT and communication technologies has increased, but the length of time they spend with the technologies every day has also risen.

¹ The SOEP data do not permit any statements about the extent to which teenagers have replaced "classical television" with watching television shows on the Internet.

The average time spent with these technologies has increased by approximately 30 minutes since the last survey in 2001/2002 and now stands at around four hours for boys and three hours for girls.² The time-use survey also confirms that other media, such as television, are used less often than they used to be.

Classic leisure activities down for the first time

Since the first survey of teenagers in the SOEP³ in 2000, their participation in athletic, musical, and cultural activities has risen continuously. The most recent cohort, whose data were captured 2012–2014, shows a slight drop in the participation in classic leisure activities, but the level is still much higher than what was observed at

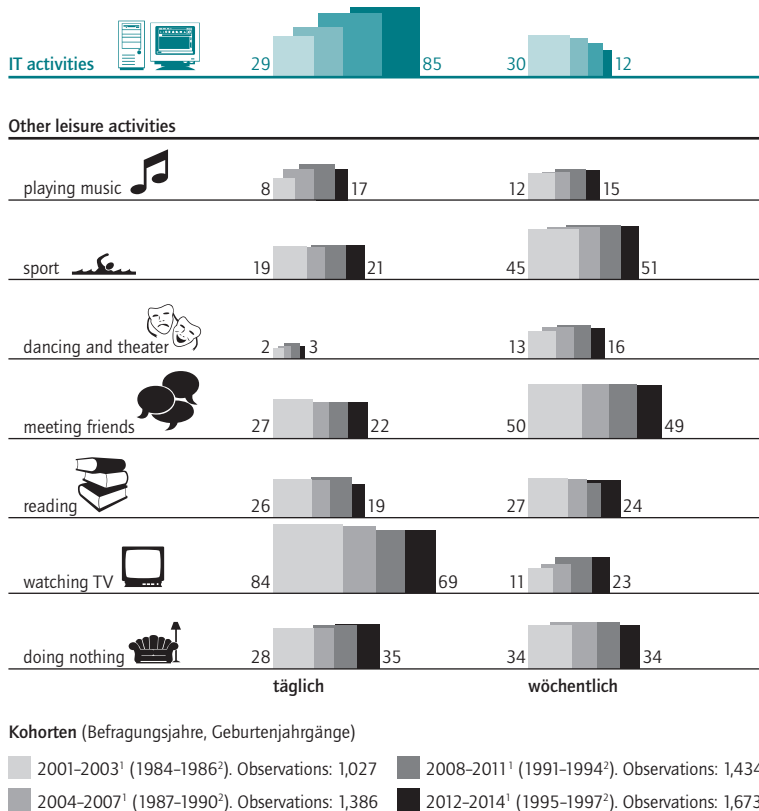
² However, when comparing this to the information in the SOEP, always consider that the age group in the time use study inherently has a greater age variation among ten- to 17-year-olds.

³ See Adrian Hille, Annegret Arnold and Jürgen Schupp, "Freizeitverhalten Jugendlicher: Bildungsorientierte Aktivitäten spielen eine immer größere Rolle," DIW Wochenbericht Nr. 40 (2013): 15–25.

Figure 1

Share of 17-year-olds who practice the listed leisure activities on a daily (left) or weekly (right) basis

Results by cohorts, in percentages



Results are presented separately for four cohorts surveyed in 2001-2003 (years of birth 1984-1986), 2004-2007 (years of birth 1987-1989), 2007-2010 (years of birth 1990-1993) und 2011-2014 (years of birth 1994-1997).

1 consists of different survey questions: frequency of surfing and chatting on the Internet (for 2006-2013), other surfing on the Internet (since 2014)
2 (since 2013).

Source: SOEP v.31, 17-year-olds, weighted, calculations by DIW Berlin.

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Classical hobbies such as sports, music and dancing appear to suffer slightly from the dominance of IT-related leisure activities.

the very beginning of the survey. The portion of 17-year-olds who played music rose from about one-fifth in the period 2001-2003 to almost one-third from 2012 to 2014. Young people's athletic activity has also increased: now almost three out of four teenagers play sports at least once a week.⁴

⁴ Charlotte Cabane, Adrian Hille and Michael Lechner, "Mozart or Pelé? The effects of adolescents' participation in music and sports," *Labour Economics* 41 (2016): 90-103.

Of course the analyses presented here do not permit any inferences as to whether this trend is related to the increase in Internet-based leisure activities. However, since the portion of young people who said the time they spend "just hanging out" every day has also gone up in tandem with musical and athletic activities, further analyses are needed to determine exactly which changes underlie the phenomenon of "teenage overload."⁵

Fewer and fewer teenagers read in their downtime

The SOEP data also indicate that fewer and fewer teenagers read when they have free time. Reading on both a daily and weekly basis decreased during the survey period. Fifty-three percent of the 17-year-olds in the oldest cohort, born between 1984 and 1986, read at least once a week. In the 1995-97 birth cohort the percentage dropped to 43 percent. It is entirely possible that today's teenagers read more online, but the simultaneous growth in the portion of those who said they never read indicates that overall, fewer young people are reading. The data in the time use survey, which also covers reading on electronic media, confirm the decline in the rate of reading. They also show that the young people who did read in 2012 and 2013 spent on average one hour a day reading – the same amount of time reported ten years ago.

Personal social contact in leisure time trending downward

Since the beginning of the survey, the portion of teenagers who meet friends (or their best friend) on a daily, or at least weekly, basis has slightly fallen. From 2001-2003, this was still a daily leisure activity for 27 percent (39 percent) of 17-year-olds. In the period 2012-2014, it was still the case for only 22 percent (26 percent).

However, one cannot conclude that the increasing digitalization of leisure time goes hand in hand with social isolation. After all, three-quarters of the latest cohort said they chatted, surfed the Internet, and engaged in social networks every day. This suggests that young people now interact with each other more via the Internet. It remains unclear however whether the social networks are really used for interaction or solely for the purpose of user-oriented self-presentation. Even if teenagers are in contact with each other more frequently via the Internet, the nature and quality of these screen-mediated relationships might differ rather dramatically from the kind of relationships that develop in personal interac-

⁵ See Nils Minkmar, "Die Überforderung der Kindheit," *Frankfurter Allgemeine Zeitung*, July 10, 2013.

Table 1

Average time-use of 10- to 17-year-olds for selected leisure activities, per day

Results by sex, comparison between 2001/2002 and 2012/2013

	Male						Female					
	All		Practicing		Participation rate		All		Practicing		Participation rate	
	2001/ 2002	2012/ 2013	2001/ 2002	2012/ 2013	2001/ 2002	2012/ 2013	2001/ 2002	2012/ 2013	2001/ 2002	2012/ 2013	2001/ 2002	2012/ 2013
	hh : mm				Percent		hh : mm				Percent	
PC und smartphone use	01:12	01:26	04:07	04:31	29,1	31,7	00:33	00:47	03:07	03:21	17,6	23,4
Playing computer games	0:56	0:58	2:06	2:17	44,4	42,5	0:16	0:15	1:18	1:20	20,0	18,5
Computer and smartphone	0:13	0:24	1:38	1:38	13,3	24,8	0:09	0:25	1:12	1:21	12,8	30,1
Amongst these:												
Information purposes	0:05	0:08	1:29	1:22	6,1	9,4	0:04	0:08	1:03	1:13	6,0	10,7
Communication purposes	(0:01)	0:06	(1:08)	1:15	(1,2)	8,5	(0:01)	0:08	(0:40)	1:04	(3,0)	12,4
Phone calls ¹ and text messages	0:03	0:04	0:23	0:36	12,7	11,2	0:08	0:07	0:37	0:40	22,5	17,8
Reading (including reading on electronic devices)	0:20	0:16	1:01	1:04	32,4	25,9	0:28	0:26	1:06	1:12	42,9	35,6
Use of other media (TV, video, DVD, radio, music)	02:08	01:51	03:23	03:15	63,1	56,9	02:08	01:46	03:18	03:07	64,6	56,7
Amongst these:												
watching TV, videos and DVDs	1:58	1:42	2:30	2:17	78,3	73,9	1:54	1:36	2:23	2:11	79,7	73,3
listening to music and radio	0:10	0:09	0:53	0:58	18,2	15,2	0:14	0:10	0:55	0:56	24,7	17,8
Sports and physical activities	0:47	0:44	2:04	2:04	37,7	35,8	0:33	0:29	1:43	1:46	31,7	26,9
Conversations	0:23	0:26	0:55	0:58	41,4	45,5	0:34	0:37	1:05	1:06	52,5	55,6
Volunteering	(0:03)	(0:03)	(2:25)	(2:17)	(1,9)	(2,4)	(0:03)	(0:03)	(2:10)	(2:03)	(2,0)	(2,3)

The table is based upon a large time-use study and indicates the time young people aged ten to 17 spend on average per day with the respective leisure activities in Germany, separately for both sexes. The first column (all) provides total averages for the respective activity, while the second column (practicing) shows the average amount of time spent with the respective activity per day by those who actually practice it. The third column (participation rate) indicates the share of girls and boys that practice that activity.

¹ Phone calls include also calls via landline.

() = restricted validity due to small number of diary entries (50 to under 200 entries)

Source: Zeitverwendungserhebung 2012/2013 Statistisches Bundesamt Wiesbaden, Tabellenwerk (Tabelle 9.8), <https://www.destatis.de/DE/Publikationen/Thematisch/EinkommenKonsumLebensbedingungen/Zeitbudgeterhebung/Zeitverwendung5639102139005.xlsx>.

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10- to 17-year-olds spend more and more time with PCs and smartphones while the use of other media declines.

tion.⁶ As the portion of young people who said that they never met up with friends has remained constant under two percent throughout the entire period of observation, there is no indication for the assumption that new technologies have completely superseded social contact.⁷

⁶ For a critical discussion of the effects of screen-mediated social interaction on social relationships, see Chapter III.2 in Hartmut Rosa, *Resonanz: Eine Soziologie der Weltbeziehung*, Berlin: Suhrkamp Verlag, 2016.

⁷ A SOEP study did not find evidence for teenagers in Germany without access to the Internet immediately after German Reunification having more social contacts than others. See Stefan Bauernschuster, Oliver Falck and Ludger Woessmann, "Surfing alone? The internet and social capital: Evidence from an unforeseeable technological mistake," *Journal of Public Economics* 117(C) (2011): 73–89.

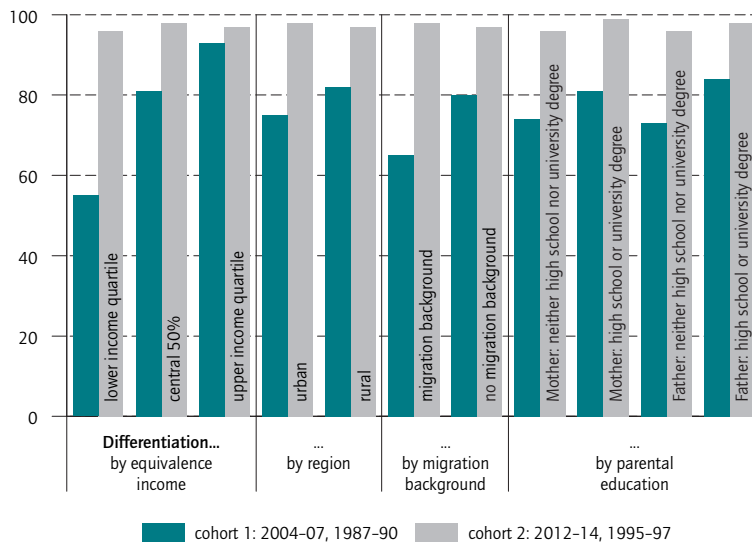
The digital divide in use persists

Until 15 years ago the digital divide, in the sense of "inequality in access to private computers and the Internet," was the focus of the debate on structural differences in the use of modern information and communication technologies. At the beginning of the 2000s, adults and teenagers with lower household income and a low level of education owned their own computers and Internet access less frequently than others.⁸ But the digital divide

⁸ See John P. Haisken-DeNew, Rainer Pischner and Gert G. Wagner, "Computer- und Internetnutzung hängen stark von Einkommen und Bildung ab: Geschlechtsspezifische Nutzungsunterschiede in der Freizeit besonders ausgeprägt," *DIW Wochenbericht* Nr. 67 (2000): 670–75 and John P. Haisken-DeNew,

Figure 2

Share of 17-year-olds with internet access at home Results in percentages



Digital divide then and now: comparing Internet access at home for the second cohort (surveyed 2004–2007, years of birth 1987–1990) and the last cohort (surveyed 2012–2014, years of birth 1995–1997), (data for the first cohort not available).

Source: SOEP v.31, 17-year-olds, weighted, calculations by DIW Berlin.

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Over the last ten years, the digital divide has almost been overcome.

as a gap in access, – at least as far as teenagers are concerned – has been largely closed in the past two decades and is no longer relevant.

Statistically significant differences by household income, parental educational level, and immigrant background that could still be observed in the second cohort are barely perceptible in the latest cohort (Figure 2). Almost all teenagers today have domestic Internet access. However, in the latest cohort of 17-year-olds, surveyed from 2012 to 2014, a slightly greater number of young people from lower-income households lacked access to the Internet than those from the three upper income quartiles.⁹ Young

Rainer Pischner and Gert G. Wagner, "Private Internet-Nutzung: Bildung und Einkommen auch bei Jugendlichen von großer Bedeutung," *DIW Wochenbericht* Nr. 68 (2001): 619–23.

⁹ To create income quartiles, equivalent incomes have to be calculated first. This is done by calculating the total household income and adjusting it for household structure, using a needs scale that takes the number of persons living in the household and their ages into consideration. This creates a basis of comparison for the income situations of households of varying sizes and compositions. Next, the households are assigned to one of four quartiles according to their equivalent incomes (top quartile with the highest equivalent income, the two middle quartiles – which we combined to create a "central middle" here, and the lowest income quartile with the lowest equivalent incomes).

people whose mothers graduated from high school or university have a particularly high rate of access. The 2015 *Shell Jugendstudie*, a longitudinal survey of German teenagers initiated in 1953,¹⁰ showed that social background remains statistically significant when not only access to the Internet but also the number of means to access the Internet are observed. The more affluent children and teenagers are, the more means to access the Internet are available to them. Even if a divide in access continues to exist on a very high level, the digital divide in form of an access divide is in general considered to be overcome.¹¹

In recent years, the debate focused on "digital inequality instead." Digital inequality describes the phenomenon in which the frequency and purpose of digital media use, as well as the type of skills users acquire in the process, vary systematically across demographic groups. As early as ten years ago, the SOEP data for adults showed that computer and Internet use varied strongly with the level of education.¹²

Taking the portion of teenagers who engage daily in at least one IT-related leisure activity¹³ differentiated according to socio-demographic characteristics, and comparing them across cohorts shows that structural differences in use have changed significantly in the past two decades (Table 2).

Gender makes no difference when it comes to using the Internet

While boys still spend a much larger portion of their leisure time on IT-related activities in the oldest and second-oldest cohorts studied here, the gender difference in daily use of information and communication technologies is no longer statistically significant in the latest cohort. This is primarily because girls and boys surf the Internet, chat, and engage in social networks with equal frequency. As for computer games, the boys have the lead (see Box 2). This finding is particularly relevant

¹⁰ Shell, *Jugend 2015: 17th Shell Jugendstudie*, Berlin: S. Fischer Verlag, 2015.

¹¹ See Nadia Kutscher and Hans-Uwe Otto, "Digitale Ungleichheit – Implikationen für die Betrachtung digitaler Jugendkulturen," in: Kai-Uwe Hugger, *Digitale Jugendkulturen*, Wiesbaden: VS Verlag für Sozialwissenschaften, (2010): 73–87, and Chapter 5 in Nicole Zillien, *Digitale Ungleichheit – Neue Technologien und alte Ungleichheiten in der Informations- und Wissensgesellschaft*, Wiesbaden: VS Verlag für Sozialwissenschaften, 2009.

¹² Adults with higher levels of education adopted new technologies faster and used them for educational and informational purposes rather than as leisure activities. See Sylvia E. Korupp, Harald Künemund and Jürgen Schupp, "Digitale Spaltung in Deutschland: geringere Bildung – seltener am PC," *DIW Wochenbericht* Nr. 73 (2006): 289–94.

¹³ Gaming, surfing the Internet, chatting, and engaging in social networks are some of the IT-related leisure activities measured here. However, some of these activities were not part of the survey until later survey years. Also see the footnote to Table 2.

Table 2

Share of young people who practice at least one IT-related activity a day, sorted according to social origin and birthyears

In percent

Survey years	2000–2003 ^a			2004–2007 ^b			2012–2014 ^c		
Birthyears	1984–1986			1987–1990			1994–1997		
	%	N	sign	%	N	sign	%	N	sign
Total	29	990		43	1,358		85	1,655	
Sex									
Girls	8	504	***	25	671	***	84	840	
Boys	48	486		59	687		86	815	
Parent education									
Mother has neither high school nor university degree	28	709		41	934	*	86	1,004	
Mother has high school or university degree	30	281		46	424		83	651	
Father has neither high school nor university degree	30	648		43	848		87	870	*
Father has high school or university degree	26	342		42	510		83	785	
School type									
Secondary school (Hauptschule/Realschule)	27	320		43	448		86	457	***
Vocational school (Berufsschule)	27	206		39	230		78	270	
High school (Gymnasium)	30	333		44	518		88	664	***
Equivalence income									
Lower income quartile	21	239	**	39	314		86	353	
Central mean	30	500	***	43	632	*	88	813	*
Upper income quartile	36	251	*	46	412		81	489	***
Migration background									
Migration background	23	209	**	40	284		85	444	
No migration background	31	781		43	1074		85	1,208	

Shows the share of young people who practice at least one IT-related leisure activity a day, respectively for the first cohort (birthyears 1984–1986), the second cohort (birthyears 1987–1990) and the last cohort (birthyears 1994–1997).

The survey was conducted on the following IT-activities:

a computer games, technical work and programming

b computer games, technical work and programming, surfing the Internet and chatting

c computer games, technical work and programming, surfing the Internet and chatting (2012 and 2013); surfing on social networks (from 2013 onwards), other Internet surfing (from 2014 onwards)

Cohort 3 is not indicated separately because the activities surveyed were the same as for cohort 2.

Significance: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (p-values in brackets)

SOEP v.31, 17-year-olds; weighted, calculations by DIW Berlin.

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There is almost no difference anymore between boys and girls.

because the desire to learn a profession in the IT sector correlates with the frequency of playing computer games but not with the frequency of other Internet-based leisure activities.

What counts is how affluent the parents are

The relationship between household income and the use of modern media has also undergone a marked change. In the older cohorts, the portion of young people who engaged in computer- and Internet-related leisure activities every day rose with household income. However, in the most recent cohorts, the highest participation rate is situated in the middle of the income distribution. In addition, significantly fewer teenagers from the

top income quartile in the latest cohort said they spent their downtime with new media every day in comparison to the teenagers in the lower three quartiles. At the beginning of the 2000s, the lower level of participation of the teenagers in lower-income households was probably primarily due to financial constraints: in general, lower-income households were slower to adopt modern technologies.¹⁴ In the higher-income households

¹⁴ John P. Haisken-DeNew et al., *DIW Wochenbericht* 67 (2000), Ibid. It should also be kept in mind that many computer games went hand in hand with relatively rigorous hardware and software requirements at the beginning of the 2000s. Gaming as a hobby could quickly become rather expensive. Whereas many of the computer (or smartphone) activities surveyed in the more recent cohorts, such as chatting and engaging in social networks, can be pursued with almost any end device.

Box 2

Excessive computer and online use as a means of stress reduction

Command of modern information and communication media is an essential prerequisite for social participation and professional success today. Various studies have confirmed the multiple positive consequences of reasonable use¹. Excessive use of these technologies may nevertheless affect people's lives negatively. In addition to the sheer physical symptoms that result from long periods of screen-time, scientific studies have found correlations between excessive computer/Internet use and poor concentration, lower school-related motivation, poor grades, higher levels of aggression, and riskier behavior in general.² Potential negative consequences of the dominance of digital media in the everyday life of children and teenagers are also a topic of public discussion.³ Warnings about the effects of excessive use of computers, the Internet, and smartphones on the brain, physical and mental health, and social relationships are

myriad.⁴ How to define appropriate, excessive, and problematic use is, however, still part of the academic debate.⁵ The absolute duration of use does not determine whether a case of use behavior is problematic or not. Instead, criteria borrowed from the definitions of pathological gambling or substance dependence are used, for example: whether the use behavior can still be controlled, the existence of withdrawal symptoms, and the extent to which the use behavior has a negative impact on other areas of life.⁶ Varying definitions and instruments of measuring problematic usage pattern often yield very different results. In an international study conducted in 2014, for example, 0.9 percent of German teenagers exhibited explicit addiction

¹ See Mario Fiorini, "The effect of home computer use on children's cognitive and non-cognitive skills," *Economics of Education Review* 29(1) (2010): 55-72 or Kevin Durkin and Bonnie Barber, "Not so doomed: Computer game play and positive adolescent development," *Journal of Applied Developmental Psychology* 23(4) (2002): 373-92.

² Leslie M. Alexander and Candace Currie, "Young people's computer use: implications for health education," *Health Education* 104(4) (2004): 254-61; Teena Willoughby, "A short-term longitudinal study of Internet and computer game use by adolescent boys and girls: prevalence, frequency of use, and psychosocial predictors," *Developmental Psychology* 44(1) (2008): 195; Valerie Carson, William Pickett and Ian Janssen, "Screen time and risk behaviors in 10- to 16-year-old Canadian youth," *Preventive Medicine* 52(2) (2011): 99-103 and Michael Dreier, Klaus Wölfling and Klaus Beutel, "Internetsucht bei Jugendlichen," *Monatsschrift Kinderheilkunde* 162nd year, 6 (2014): 496-502.

³ See "Wie viel Smartphone ist gut für Kinder?" *Focus* title story, September 3, 2016.

⁴ See Manfred Spitzer, *Cyberkrank! Wie das digitalisierte Leben unsere Gesundheit ruiniert*, Munich: Droemer Knaur (2015) and Manfred Spitzer, *Digitale Demenz. Wie wir uns und unsere Kinder um den Verstand bringen*, Munich: Droemer Knaur (2012).

⁵ To date, Internet/computer addiction has not been included in the latest version of the American Psychiatric Society's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). However, the "Internet gaming disorder [IGD]" has been accepted into the "Emerging Measures and Models" section in which disorder symptoms that have not been adequately researched are listed until they can be officially accepted as part of the manual. See Mark D.Griffiths, Daniel Luke King and Zsolt Demetrovics, "DSM-5 internet gaming disorder needs a unified approach to assessment," *Neuropsychiatry* 4th year, 1 (2014): 1-4.

⁶ Currently, there are at least 18 different measurement methods for and definitions of pathological Internet and gaming behavior. Some scientists have used the criteria for pathological gambling while other authors use the criteria that the DSM defines for addiction to psychotropic substances. For a brief overview and detailed information on the relevant literature, see Sabine Meixner, "Exzessive Internetnutzung im Jugendalter," *Kinder und Jugendschutz in Wissenschaft und Praxis*, 55th year, 1 (2010): 3-7.

of today, teenagers' lower level of participation is more likely due to the fact that they have especially high rates of participation in more structured and education-oriented leisure activities. They simply have less time to surf, chat, and engage every day.¹⁵ In a slightly different form, the results of the latest *Shell Jugendstudie* confirm this assertion. While 26 percent of young people in the two lower income quartiles indicated that they do not have time for other things due to their Internet activities, only ten percent of the young people in the upper two income quartiles agreed with the statement.

Another indication for the hypothesis that parents in households with a higher socio-economic status make sure that young people do not spend too much time with new media, or that the young people themselves have internalized such thinking, is that young people whose parents graduated from high school or university also have lower daily participation levels in Internet surfing and computer games. Yet looking at the young people's own education, it appears that the ones who attend academically oriented high schools have the highest participation levels. As expected, fewer young people already taking part in vocational training programs (and therefore with less free time) are online on a daily basis than other high school students. There were no perceivable differences in overall use between the young people with and without an immigrant background.

¹⁵ Adrian Hille et al., (2013), *Ibid.* Another study in England was unable to find a causal relationship between access to the Internet and communication technologies at home and school performance, see Benjamin Faber, Rosa Sanchez-Guarner and Felix Weinhardt, "ICT and Education: Evidence from Student Home Addresses," *NBER Working Paper* 21306 (2015).

traits and ten percent were classified as being "at risk."⁷ Another representative German study from 2013 came to the conclusion that 12.5 percent of the 14- to 17-year-olds surveyed exhibited pathological Internet behavior.⁸ For effective and efficient prevention, it is important to know which children and young people are especially at risk of developing an excessive or pathological pattern of Internet and computer use. Various studies have shown that psycho-emotional stress – such as a troublesome family atmosphere⁹ – is one of the key risk factors and that excessive, pathological Internet and computer use often serve as (inadequate) stress reduction strategies.¹⁰ We used the SOEP data to check the extent to which daily use of the Internet and computers depends on emotional and social stress factors. For this purpose, the probability of engaging in specific IT-related leisure activities on a daily basis was estimated as a function of symptoms and causes of psychosocial stress (Table 3). Three SOEP questions asking the young people to indicate how often they felt sad, angry or anxious in the past four weeks were

used as an instrument for measuring socioemotional stress.¹¹ We further controlled for level of satisfaction with grades and frequency of fighting with parents in order to directly test two possible causes of psychosocial stress.

The SOEP data confirm that teenagers who responded that they are often or very often sad, worried, or angry have a 20 percent higher likelihood of surfing and chatting on the Internet every day than those who are less often angry, worried, and sad. The likelihood of them pursuing any IT-related leisure activity is 12.5 percent higher. Contrary to expectations, the likelihood of playing computer games every day is not linked to emotional stress factors.

Young people who often or very often fight with at least one parent exhibit an eight percent higher probability of pursuing an IT-related leisure activity every day. Low satisfaction with grades is also linked to a significantly higher probability of engaging with social networks on a daily basis.

Overall, the SOEP data confirm that there is a positive relationship between psycho-emotional stress factors and the probability of pursuing IT-related leisure activities on a daily basis. What the data do not explain is why certain forms of digital media use are linked to certain stress factors but not others. These questions are left open for in-depth qualitative and quantitative studies in the future.

⁷ Michael Dreier et al., Ibid.

⁸ Moritz Rosenkranz et al., "Risikofaktoren für Probleme mit exzessiver Computer- und Internetnutzung von 14-bis 17-jährigen Jugendlichen in Deutschland: Ergebnisse einer deutschlandweiten Repräsentativerhebung," *Diskurs Kindheits- und Jugendforschung* 8(1) (2013).

⁹ For Germany, see Moritz Rosenkranz et al. (2013), Ibid and a further study for Taiwan: Ju-Yu Yen et al., "Family factors of internet addiction and substance use experience in Taiwanese adolescents," *CyberPsychology & Behavior* 10(3) (2007): 323–29.

¹⁰ Sabine Grüsser et al., "Exzessive Computernutzung im Kindesalter: Ergebnisse einer psychometrischen Erhebung," *Wiener klinische Wochenschrift – The Central European Journal of Medicine* 117(5–6) (2005): 188–95.

¹¹ See footnote to Table 3.

Who engages in which IT-related leisure activities depends on a variety of socio-demographic traits

Alongside the temporal changes in the use structure of digital media over time, the SOEP data allow for a glimpse at the structural differences in use content (Table 3).

Since the relationship to some of the demographic characteristics has markedly changed over time, the multivariate analysis was restricted to the most recent cohorts of 17-year-olds born from 1994–1997. We examined the probability of engaging in a specific IT-related leisure activity on a daily basis, depending on membership in certain socio-demographic groups.

Teenagers from affluent households invest less leisure time in IT-based activities

The multivariate analyses confirmed the negative relationship between household income and engaging in IT-based leisure activities. Teenagers in households in the upper income segment have a probability of engaging in any IT-based leisure activity on a daily basis that is nine percent lower than that of teenagers from middle-income families. Their likelihood of being active in social networks on a daily basis is even 15 percent lower. With regard to surfing and chatting, the children of high earners are not different from those in the middle-income segment. However, young people in the lowest income quartile have a 15 percent lower probability of surfing and chatting on the Internet than the reference group from middle-income households.

Table 3

Relevance of different socio-demographic characteristics for the probability to practice specific IT activities on a daily basis

	Probability of daily practice of ...			
	At least one of the following IT-activities	Playing computer games	Surfing on the internet	Being active on social networks
Male	0.024 (0.509)	0.257*** (0.000)	-0.013 (0.781)	0.034 (0.607)
Lowest income quartile (reference category: central 50 percent)	-0.034 (0.464)	0.086 (0.277)	-0.146* (0.066)	0.021 (0.801)
Highest income quartile (reference category: central 50 percent)	-0.089* (0.083)	0.012 (0.818)	-0.071 (0.230)	-0.147* (0.065)
Mother's education in years	-0.005 (0.579)	0.015 (0.176)	-0.002 (0.885)	-0.007 (0.624)
Migration background (dummy)	-0.002 (0.964)	-0.090* (0.093)	-0.015 (0.773)	-0.097 (0.202)
Vocational training (reference category: Real- or Hauptschule)	-0.096 (0.275)	-0.037 (0.606)	-0.091 (0.266)	-0.099 (0.340)
Gymnasium (reference category: Real- or Hauptschule)	0.091* (0.082)	-0.086 (0.129)	0.036 (0.550)	0.235*** (0.005)
Reading (at least weekly)	-0.077** (0.043)	0.002 (0.968)	-0.098** (0.036)	-0.063 (0.367)
Meeting friends (at least weekly)	-0.037 (0.454)	-0.057 (0.441)	-0.012 (0.856)	-0.130 (0.200)
Emotional and psychological strain ¹	0.125* (0.062)	0.086 (0.415)	0.203*** (0.010)	0.228* (0.075)
Fighting with mother and father (frequently and very frequently)	0.083* (0.057)	0.023 (0.653)	0.069 (0.196)	0.042 (0.586)
Low satisfaction with school grades (3 and less on a scale from 0-10)	-0.029 (0.738)	-0.010 (0.912)	0.044 (0.724)	0.234* (0.063)
Observations	803	801	802	541

The coefficients of the logistic regression analysis above show changes in the probability of conducting the respective IT-related activities given a change in the respective predictor variable if all other predictor variables are held constant at their mean.

1 A person is assumed to experience emotional and psychological strain if at least two out of the three following criteria apply: often or very often felt a) sad, b) worried or c) angry in the four weeks before the survey.

significance: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (p-values in brackets)

Source: SOEP v.31, 17-year-olds, weighted, calculations by DIW Berlin.

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Young people aiming at a high school degree or those who are not satisfied with their school grades have a higher probability to be active on social networks.

Teenagers with an immigrant background do not differ from those without an immigration background concerning their Internet activities and engaging in social networks, but they show a lower probability of gaming on a daily basis.

And teenagers who attend academically oriented high schools continue to be much more likely to engage in social networks than those who attend secondary schools.

Teenagers who read regularly spend less time online; social contacts do not influence online activity

Whether or not young people meet friends at least once a week has no influence on their daily activities in social networks or surfing and chatting online. However, young people who reported reading on a weekly or daily basis had a ten percent lower likelihood of surfing and chatting online on a daily basis. Equally the likelihood of pursuing an IT-related activity during their daily downtime was lower for young people who read regularly.

Conclusion and outlook

In the past two decades, the digital divide manifested as a social Internet access gap and has almost completely closed – at least for teenagers. Digital media's increasing availability, portability, and interconnection have established these technologies as young people's most frequently used leisure activity. Although the majority of socio-demographic differences in the use of total IT-related leisure activity have disappeared, there is a new digital divide along socio-demographic traits concerning the specific purpose for which the new media is used. For example, young people from the lower income quartile surf and chat online less frequently than those from households in the middle-income segment. Teenagers who attend secondary schools engage in social networks much less frequently than those who attend academically oriented high schools.

Participation in social discourse not only requires access to Internet-based medial content, but also the ability to encounter it critically.

Educational policy and policymakers in general are reacting slowly to many of these trends. On the one hand, there is a large gap between young people's media presence in their leisure time – and the IT skills they acquire

in the process of using it – and the use of digital media in schools. On the other hand, schools should function as the place where young people discuss and learn to use new media responsibly. Training teenagers on how to use the new media – which now dominate their down-time activities – in a responsible and powerful way, and formulating educational goals has become a key pedagogical task for educators. Educational policymakers have finally recognized that they must react to the ongoing technological and media-related changes in the living environment of our youth. A recently announced government program¹⁶ aims to strengthen young people's command of technology and the risks associated with digital communication and learning with the new opportunities digital media offer. The German government plans to make €5 billion available for digital tools in schools in the next five years. Merely expanding digital technology in schools will probably not be enough. As the government is well aware, the key is teaching young people how to use digital media as a new primary cultural technology.¹⁷

¹⁶ <https://www.bmbf.de/de/sprung-nach-vorn-in-der-digitalen-bildung-3430.html>

¹⁷ See German Bundestag, "Technikfolgenabschätzung (TA) Digitale Medien in der Bildung. Bericht des Ausschusses für Bildung, Forschung und Technikfolgenabschätzung," Bundestagsdrucksache 18/9606 (2016): 10.

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