Occupational Participation of Persons with Disabilities: Perceptions and Empirical Evidence

This BIBB Report presents the labour market situation of persons with disabilities with a focus on qualifications and perceptions based on a follow-up survey of the BIBB/BAuA Employment Survey (ETB) 2018.

The analysis shows that the quality of employment of persons with disabilities differs from that of persons without disabilities only for selected indicators. For example, the analyses show that employed persons with disabilities deal with transition, complexity and imponderables at work with a similar frequency as employed persons without disabilities.

Our analyses on perceptions show that a considerable share of the respondents misperceive the gap in the employment rate between persons with and without disabilities. The follow-up survey includes an information experiment that informs by randomization half of the respondents about the employment rate gap between persons with and without disabilities. We focus our analysis on respondents with disabilities and show that those who received information on the gap evaluate their situation significantly worse than respondents who did not receive this information.

Occupational participation of persons with disabilities

According to Article 27, paragraph 1 of the UN Convention on the Rights of Persons with Disabilities, discrimination based on disability should be prohibited in all matters of employment and occupation.

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1 This work is the result of cooperation between BIBB and Universität Hamburg. The views expressed here are solely those of the authors and do not necessarily reflect the views of their institutions.
Nevertheless, the occupational participation of persons with disabilities in the general labour market continues to be worse than that of persons without disabilities. This can be seen with the help of various indicators: Their overall employment rate is lower; they are more often in atypical employment, receive lower hourly wages and are more often and longer affected by unemployment (Aktion Mensch 2019; BMAS 2016; BA 2019; Weller 2017; Bach 2015; Niehaus/Bauer 2013; Alfassi-Henley 2013). Employed persons with disabilities are also comparatively more likely to perform simple manual tasks (Lechner/Vazquez-Alvarez 2003; 2012). At the same time, employees with disabilities regularly have higher qualifications than would be necessary for the job they do (Niehaus/Bauer 2013). This overqualified employment explains, for example, the loss of wages in comparison to employment that is adequate for a particular training (Hall/Santiago Vela 2019).

There are no current representative studies on the training-adequate employment of persons by type of disability as well as the perception of their occupational participation. Based on a follow-up survey of the ETB in 2018, this BIBB report examines the extent to which employed persons with disabilities (differentiated according to various characteristics) differ from employed persons without disabilities with regard to various indicators of occupational participation. By means of a survey experiment, the additional question of how high the employment rate of persons with and without disabilities is estimated to be is pursued. Furthermore, it is investigated how information disclosure on the actual employment gap between the two groups influences the attitudes towards employment of persons with disabilities.

Data and sample characteristics

Follow-up survey of the BIBB/BAuA Employment Survey 2018

The analyses are based on a follow-up survey of the ETB 2018. The Employment Survey is a representative survey designed by the Federal Institute for Vocational Education and Training (BIBB) and the Federal Institute for Occupational Safety and Health (BAuA) among around 20,000 employed persons2 aged 15 and above in Germany who regularly carry out a paid activity of at least ten hours per week (“core labour force”). The last survey took place between October 2017 and April 2018 using computer-assisted telephone interviews (CATI) (Hall et al. 2020). ETB 2018 interviewees were asked whether they had a disability and whether they would be willing to participate in another survey.

As there have been no representative data on the employment situation of persons with disabilities by type of impairment and on the impact of (mis-)perceptions in Germany so far, the follow-up survey of the ETB 2018 aims to close this data gap.3 The starting point for the sample of the follow-up survey was a total of 1,500 persons from the core labour force (excluding apprentices) with officially recognised disabilities and 1,500 persons from the core labour force (excluding apprentices) with information on the subjectively perceived general state of health who agreed to a possible re-interview.4 The follow-up survey (CATI) consisted of two parts and took place between May and July 2019: Part 1 of the questionnaire includes questions on the type and characteristics of disability and associated impairments, among others. Part 2 of the questionnaire contains a survey experiment that explores perceptions and attitudes towards labour force participation and the employment potential of persons with disabilities. For the analyses conducted in this report, data from the follow-up survey were merged with the ETB 2018 based on identification numbers. Persons who are employed in workshops for persons with disabilities are not included in the analyses. In addition, due to the small number of cases, employed persons who have had a disability since birth are excluded.

Definition of disability

This BIBB Report refers to the official definition of the term “disability" pursuant to Paragraph 2 of the German Social Security Code Volume Nine (SGB IX): “Persons with disabilities are persons who have physical, mental, intellectual or sensory impairments which, in interaction with attitudinal and environmental barriers, are likely to prevent them from participating in society on an equal basis for longer than six months. An impairment according to sentence 1 exists if the physical and health condition deviates from the condition typical for the person’s age. Persons are at risk of disability if an impairment according to sentence 1 is to be expected.” For the recognition of a disability, the regional responsible office decides on the degree of disability (GdB) with reference to medical reports from doctors. This ranges from 20 – for persons with mild disabilities – to 100 – for persons with very severe disabilities. A GdB of 50 or more is considered as severe disability. According to this definition, normal signs of ageing are not disabilities in the sense of SGB IX. In the analyses, the characteristic “disability” is measured based on whether there is an officially recognised disability.

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2 In this publication “employed persons” or “employees” refers to gainfully occupied persons.
3 The post-survey questionnaire is available at https://www.bibb.de/de/130927.php (accessed on: 25.01.2021).
4 For an analysis of the readiness for follow-up interviews within the framework of the BIBB/BAuA Employment Survey 2018, see Rohrbach-Schmidt/Hall 2020.
Since labour market participation decreases with increasing GdB (Metzler/Werner 2017), a distinction is made in the analyses between employed persons with a mild (GdB < 50) and severe disability (GdB >= 50). In addition, employed persons who have a GdB of at least 30 but less than 50 are supposed to be treated officially equal to persons with severe disabilities. Therefore, they are taken into account in the analyses. With equality, persons with mild disabilities have the same official status as persons with severe disabilities.

Moreover, it is known whether the time of the occurrence of the disability is before or after the age of 18. Furthermore, differentiation is made according to the type of disability (severe and chronic illness; physical disability; neurological and mental illness; sensory disability; other disability) as well as the visibility of the disability.

▶ Selected sample characteristics

The vast majority (86%) of all surveyed employees with disabilities in the sample have had their disability officially recognised, with more than half (56%) having a severe disability (GdB ≥ 50) and around 44% having a mild disability (GdB < 50). Fourteen percent of employees with mild disabilities have the same status as employees with severe disabilities and thus have the same status as persons with severe disabilities. Only five percent of the employed have a GdB of 100.

On average, the disability appeared at the age of 33, official recognition took place on average seven years later. For about a quarter of those affected, the disability first appeared in childhood or in young adulthood (up to 25 years of age). Another quarter acquired the disability between the ages of 25 and 40, and another quarter between the ages of 41 and 55. Employees who have been affected by a disability since adolescence are less likely to continue working into old age than employees who acquired the disability later. The vast majority of employees (72%) became disabled after they started working for their current employer. The average period of employment with the same company for employees with disabilities is almost 17 years, which is significantly higher than for employees without disabilities (12 years). Almost a quarter of the disabled employees state that they feel strongly or very strongly affected in their daily work or private life due to their disability.

The type of disability most frequently reported by employed persons with disabilities is a physical disability (37%), followed by severe and chronic illnesses (26%) and neurological and psychological impairments (just under 13%) (Figure 1). Sensory disabilities (visual and hearing impairments) account for 14% of the responses. All types of disabilities examined occur more frequently with increasing age.

Figure 1: Types of disabilities among employed persons with disabilities


- Physical disability
- Severe illness and chronic disease
- Other disability
- Visual impairment
- Hearing impairment
- Neurological and psychological impairment

A differentiation according to gender and other socio-demographic characteristics was not made due to the size limitation of this publication.
In addition to one’s own employment situation, the employment of one’s partner also plays a central role in the economic situation of a household. A quarter of the employed men with disabilities live in a partnership in which they earn their living alone. Among employed women with disabilities, the proportion is slightly higher at 29%.

As the degree of disability increases, the proportion of employed persons in a partnership in which both are employed decreases slightly: while 78% of employed persons with a mild disability state that their partner is also employed, the proportion among employed persons with a severe disability is just under 72%.

With regard to the qualification structure, it can be seen that, compared to employees without disabilities, employees with disabilities more often have an intermediate qualification (without disability: just under 55%, with disability: 66%) and less often a high qualification (technical college/university degree) (with disability: 16%, without disability: 29%) as their highest educational attainment. The lower average educational attainment of employees with disabilities is not related to the time of disability, as there are no significant differences as to the occurrence of the disability.

The level of job requirements is a relevant indicator of the participation opportunities of persons with mental illness in the general labour market (Büchel 1998). Numerous studies confirm an increasing demand for complex activities (complex specialist activities as well as highly complex activities) and a decline in the demand for simple activities (helper and semi-skilled activities, technically oriented activities) (Dengler/Matthes 2015; 2018; Berriman/Hawksworth 2017; Manyika et al. 2017).

Evaluations based on the follow-up survey of the ETB 2018 show that employees with disabilities more often perform simple activities compared to employees without disabilities and less often perform highly complex activities (e.g. knowledge transfer, development/research/diagnostic activities).

There are differences with regard to the type of disability (see Figure 2). For simple activities, it is true that employed persons with neurological and mental impairments more often perform helper and semi-skilled activities compared to other types of disabilities. Employees with sensory disabilities account for a high proportion (60%) of skilled jobs. (Highly) complex activities are most often performed by employees with severe and chronic illnesses.

Since the majority of employees with severe and chronic illnesses in (highly) complex jobs are over 40 years old, it is likely that they had already been doing these jobs before the occurrence of the disability and were able to continue doing them.

The comparison of the requirement level of the activity hardly shows any differences with regard to the degree of disability. It is only noticeable that employed persons with a severe disability, at around 47%, and those with the same status (just under 57%) are somewhat less likely than employed persons with a slight disability (just under 53%) to carry out professionally oriented activities. With regard to the visibility of the disability or the time of the occurrence of the disability, there are also no significant differences as to the level of requirements of the activities performed.

After looking at the actual situation regarding the distribution of activities, we will now look at the fit between occupational activities and the qualifications learned. In the case of gainful employment that is adequate to the qualification, the requirement level of the occupational activities corresponds to the acquired qualification (Hall/Santiago Vela 2019; Büchel 1998). In the case of overqualified employment, a higher qualification is present than would be necessary for the activity performed (for example, if a geriatric nurse works as a semi-skilled employee in manufacturing or trade). This can be associated with a loss of income, lower job satisfaction, lower occupational status and less cognitively demanding work, leading to a decline in competencies through not using the skills acquired in training (Hall/Santiago Vela 2019). Underqualified employment means that the jobholder has a lower formal qualification than would be required to perform the job. In this respect, a superior job is
more positive and can be understood as a career advancement, but potentially as an excessive demand.

If one compares the profession learned with the profession practised, employed persons with disabilities, at just under 4 %, are significantly more likely to pursue an activity that does not correspond to the profession learned (employed persons without disabilities: just under 30 %). This could be the consequence of a lack of knowledge on the part of employers about the fit between skills and occupational requirements as well as an actual reduced fit because of the disability. Employed persons with disabilities are slightly more likely to be in underqualified employment (11 %) than employed persons without disabilities (9 %) (Figure 3). There are no differences between employees with and without disabilities in terms of overqualified employment.

If differentiated according to the degree of disability, there are no differences between employed persons with severe disabilities and without disabilities in adequately qualified and underqualified employment. The proportion of employed persons with a slight disability in overqualified employment is slightly higher (24 %) than among employed persons with a severe disability (just under 21 %).

With regard to the question of whether employment is adequate for training, there are no differences for the type, visibility or the occurrence of the disability.

Employees whose disability first appeared in adulthood are slightly more likely to be in inferior employment (just under 22 %) than employees whose disability has existed since childhood or adolescence (18 %). This means that employees with a disability that occurred in adulthood are slightly more likely to have a higher qualification than would be necessary for the job they are doing. This could result from changes in occupation. Overall, however, the differences between the groups seem relatively small.

Employees with severe and chronic illnesses are more likely (almost 38 %) to work in an occupation other than the one they learned than employees with a physical or sensory disability (30 % and 31 %). At the same time, they have a high proportion of complex jobs. On the other hand, employees who have been affected by a disability since childhood or adolescence are more often employed in their learned profession (almost 79 %) than employees whose disability occurred in adulthood (63 %).

**Figure 2: Requirement level of activities by type of disability**

<table>
<thead>
<tr>
<th>Disability Type</th>
<th>Helper and Trainee activities</th>
<th>Complex specialist activities</th>
<th>Professionally oriented activities</th>
<th>Highly complex activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>No disabilities</td>
<td>2.8%</td>
<td>42.7%</td>
<td>21.9%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Other disabilities</td>
<td>4.6%</td>
<td>50.8%</td>
<td>18.5%</td>
<td>26.2%</td>
</tr>
<tr>
<td>Sensory impairment</td>
<td>4.7%</td>
<td>60.0%</td>
<td>11.8%</td>
<td>23.5%</td>
</tr>
<tr>
<td>Neurological and psychological impairment</td>
<td>15.6%</td>
<td>43.8%</td>
<td>15.6%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Physical disability</td>
<td>4.6%</td>
<td>53.8%</td>
<td>19.2%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Severe illness and chronic disease</td>
<td>5.9%</td>
<td>48.2%</td>
<td>14.1%</td>
<td>31.8%</td>
</tr>
</tbody>
</table>

Source: follow-up survey of the BIBB/BAuA-Employment Survey 2018, percentage of cases, n = 1,010.

**Self-determined work and occupational status**

In addition to a job with adequate qualifications, aspects such as the perceived autonomy and the possibility of career advancement also play an important role in the subjective evaluation of the
Autonomy is one of the most important factors of work motivation (Gagné/Deci 2005) and requires a high degree of recognition of performance in addition to trust from the supervisor(s). It must be taken into account that greater care for persons with certain types of disabilities (e.g. through personal assistance) could enable adequate employment, so that this indicator cannot necessarily be equated with poorer participation. When asked about the extent of independence in work tasks, employed persons with disabilities (just under 69%) are slightly less likely than employed persons without disabilities to say that they work mainly independently (72%). Employed persons with severe disabilities hardly differ from employed persons with equality and mild disabilities with regard to the frequency of working according to instructions. Employees with a disability that started before adulthood are slightly more likely to work mostly under instructions (just under 12%) than employees with a disability that started later (just under 8%). Employed persons with a visible disability are also slightly more likely to work according to instructions (11%) than employed persons with a non-visible disability (8%).

**OCCUPATIONAL STATUS** is also a relevant indicator for the quality of work. At 26%, employees with disabilities are slightly less likely to hold a management position than employees without disabilities (just under 29%). In addition, employees with disabilities are somewhat less likely (just under 53%) to be authorised to give technical instructions to employees than employees without disabilities (57%). Among employees with disabilities, the proportion of employees in supervisor positions and with the right to give technical instructions to other employees decreases as the degree of disability increases.

Employees who have been affected by a disability since adulthood are more likely to hold a job with a supervisor position and to have the authority to give technical instructions to other employees than employees for whom the disability first appeared in childhood or adolescence. Compared to employees with other types of disabilities, it is noticeable that employees with a sensory disability are less likely to give technical instructions and less likely to hold a supervisor position.

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**Dealing with change, complexity and imponderables**

As a concept in the sociology of work, **labour capacity** encompasses informal competencies or experiential knowledge in dealing with change, complexity and imponderables that employees acquire in the course of their employment (Pfeiffer 2004; Böhle et al. 2004; Pfeiffer 2016). The competencies mentioned are to be approximately quantified via the work ability index (AV index) (Pfeiffer SUPHAN 2015). A higher value can be interpreted to mean that a person is better prepared for the demands of an increasingly changing and complex world of work.

Based on the ETB 2018, a sub-index is formed for each of the four sub-dimensions of labour assets (identified by the authors) according to Pfeiffer and Suphan (2015):

- situational coping with complexity (sitKom),
- situational coping with imponderables (sitUW),
- structural increase in complexity (strKOM) and
- relevance of experience-based learning (REL).

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8 “Relevance of experiential learning” acts as a multiplier of the other three sub-indices when calculating the overall
An overall index, the AV index, is then calculated from the four sub-indices (Pfeiffer/Suphan 2015; Pfeiffer 2018). The analyses of the AV index overlap to some extent with the analyses of the level of requirements, which also refers to the complexity of activities (cf. section on the level of requirements of the activity and training-appropriate employment). However, while the level of requirements was determined using the system of the German Classification of Occupations 2010 (KldB), the AV Index and its sub-indices are measured in the following using information and assessments of the employed persons on their work requirements and their work environment.

The analyses do not show any significant differences for the AV index between employed persons with and without disabilities (Table 1). There are also hardly any differences between the two groups within the sub-indices: Employed persons with disabilities deal more frequently with structural increases in complexity at work than employed persons without officially recognised disabilities (e.g. restructuring or reorganisation is carried out more frequently in their direct work environment, Table 1).

If one differentiates in the analysis according to different types of disabilities, no significant overall differences are found between employed persons with and without disabilities with regard to the expression of the AV index. Again, significant mean differences can only be observed for individual AV sub-indices: Employed persons with a neurological or mental impairment deal with situational complexity less frequently than employed persons without a disability. In addition, the dimension “relevance of experiential learning” is less pronounced in this group. This fits in with the finding that employees with neurological or mental impairments are comparatively often employed in helper and semi-skilled jobs (cf. section “Requirement level of the occupation and training-appropriate employment”).

For all other types of disability taken into account, there are no significant deviations either for the AV index or for its sub-indices compared to the group of employed persons without disabilities. The same applies when differentiating employees with disabilities according to whether their disability is visible. If one

<table>
<thead>
<tr>
<th>Table 1: Mean comparison of the AV-Index and its partial dimensions between employees with and without disabilities</th>
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<tr>
<td></td>
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<tr>
<td>AV-Index</td>
</tr>
<tr>
<td>AV-Index</td>
</tr>
<tr>
<td>No disabilities (reference)</td>
</tr>
<tr>
<td>Disability</td>
</tr>
<tr>
<td>Degree of disability (GdB)</td>
</tr>
<tr>
<td>GdB 20 to &lt;50 (recognized disability, no severity)</td>
</tr>
<tr>
<td>Legally equal (to GdB ≥50)</td>
</tr>
<tr>
<td>GdB ≥ 50 (recognized severe disability)</td>
</tr>
<tr>
<td>Occurrence of the disability</td>
</tr>
<tr>
<td>Birth, childhood, youth</td>
</tr>
<tr>
<td>Adulthood</td>
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<tr>
<td>Visibility of the disability</td>
</tr>
<tr>
<td>Visible</td>
</tr>
<tr>
<td>Not visible</td>
</tr>
<tr>
<td>Type of disability</td>
</tr>
<tr>
<td>Severe illness and chronic disease</td>
</tr>
<tr>
<td>Physical disability</td>
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<tr>
<td>Neurological and psychological impairment</td>
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<tr>
<td>Sensory impairment</td>
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<tr>
<td>Other disability</td>
</tr>
</tbody>
</table>

Source: follow-up survey of the BIBB/BAuA-Employment Survey 2018, n=1,010, weighted, the GdB=degree of disability, “sitKOM”= situational coping with complexity, “sitUW”= situational coping with imponderables “strKOM”= structural increase in complexity, “REL” = relevance of experience-based learning, “(+)” = significant difference (p<0.05).|
differentiates according to the degree of disability, significant differences can only be observed for two sub-indices of the AV index: Employed persons with a recognised GdB of at least 50 deal less often with situational complexity compared to employed persons without a disability. Furthermore, employees with an equalisation deal more often with structural increases in complexity than employees without a disability. If one differentiates according to the time of the occurrence of the disability, there are no significant differences in the AV index between employed persons who already had a disability before the age of 18 and those who only acquired a disability in adulthood. A look at the sub-indices of the AV index shows, however, that employed persons who already had a disability before the age of 18 deal with situational complexity at work comparatively rarely.

Overall, the results show that persons with disabilities are slightly less likely to be employed in the general labour market than persons without disabilities and are less likely to be in a managerial position. In addition, persons with disabilities are less likely to be engaged in highly complex activities than persons without disabilities, when the KldB is used to operationalise complex activities. However, the individual statements of the employed persons about their work demands and their work environment, on which the AV index is based, indicate that both groups have comparable experiences and competencies in dealing with complexity, change and imponderables at work.

Differences in the results according to the type of disability are due to the level of requirements of the job. In contrast, there are hardly any differences in the characteristics “time of onset of disability” and “visibility of disability”. In these analyses, it is important to note that the sample only includes persons who are already professionally integrated in the labour market.

Thus, it cannot be concluded to what extent the differences and similarities found between employees with and without disabilities influence participation opportunities. Instead, the results make it clear that more detailed information than the presence of a disability is needed to make statements about labour market participation.

**Perception of the labour market situation of persons with disabilities**

**Background**

Numerous empirical studies have confirmed that persons with disabilities face fewer employment opportunities compared to persons without disabilities (Mitra/Kruse 2016; Fogg et al. 2010; Lechner/Vazquez-Alvarez 2003, 2012; BMAS 2013). The employment rate of persons with disabilities with 26.7% is significantly lower than the rate of 60.2% of persons without disabilities (Destatis 2013). This employment gap measures the inclusion and representation of persons with disabilities in the labour market. Due to public discussions on the (labour market) inclusion of persons with disabilities, for instance, in the context of the Participation Act, it can be assumed that the population is aware of the lower labour force participation of this group. However, most individuals find it difficult to correctly estimate key labour market indicators, which even applies to the general unemployment rate (Bullitz 2016; Cardoso et al. 2016). Against this background, the following section examines if and to what extent the German population misperceives the employment rate of persons with and without disabilities and which implications these misperceptions have for their assessments of the labour market participation of persons with disabilities.

Estimates of the employment rate gap may differ according to whether respondents have a disability or whether they are in contact with persons with disabilities. One possibility may be that individuals extrapolate their own employment situation to the employment situation of their group. In this case, individuals with a disability who are employed would extrapolate from themselves to others and conclude that a relatively large proportion of persons with disabilities are also employed. Social psychologists have extensively studied such generalisations with reference to one’s own group and termed these cognitive fallacies (Kessler/Fritsche 2018; Pendry 2014). For example, Cardoso et al. (2016) show that unemployed persons estimate the unemployment rate significantly higher than employed persons. In a similar vein, it is plausible to assume that employed persons with disabilities estimate a higher labour force participation of their own group than employed persons without disabilities. This in turn would result in different assessments of the gaps, whereby employed persons with disabilities would perceive a lower gap and employed persons without disabilities would perceive a larger gap. Furthermore, studies show that the social environment and contact with relevant groups of persons play a role for individual perceptions. Cruces et al. (2013) analyse to what extent the composition of the neighbourhood and the social environment affect the assessment of one’s income position. Respondents in a heterogeneous environment consisting of different social classes have significantly better estimates of their position than respondents living in a homogene-
ous environment, in which the majority belongs to the same social class.9

The ETB follow-up survey contains a treatment that informs about the actual gap in the employment rate between persons with and without disabilities (for details, see section “Effects of the survey experiment”). As long as respondents misperceive the gap, the intervention represents an information gain that could influence respondents’ attitudes. The significant effects of such information treatments have already been demonstrated via survey experiments in different contexts (Kuziemko et al. 2015; Karadja et al. 2017; Engelhardt/Wagener 2018; Gimpel-son/Treisman 2018; Bublitz 2020). For example, in a cross-national survey of five European countries and the USA, Alesina, Miano and Stantcheva (2018) show that respondents overestimate the share of immigrants in the total population. In turn, respondents show higher approval of immigration when they are informed about the actual lower proportion of immigrants in their country (Alesina et al. 2018). Against this background, it is likely that providing respondents with information on the unequal access to the labour market, as measured by the employment rate gap between persons with and without disabilities, has an impact on respondents’ attitudes regarding the labour market restriction of persons with disabilities.

Design of the survey experiment
We implemented a survey experiment in the ETB 2018 follow-up survey to measure the effects of providing information about the participation of persons with disabilities in the labour market. The respondents had to first estimate the employment rates of persons with and without disabilities. Afterwards, it was examined whether and how the dissemination of information and possible correction of a misperception of the employment rate gap affects the personal assessment of the labour market situation of employed persons with disabilities. Half of the respondents have a recognized disability status which allows for looking at the attitudes of this group in particular.

In the survey, all participants were asked to estimate the proportional share of employed persons with and without disabilities. A randomly selected subsample (treatment group) of respondents with and without disabilities (50 % each) was then informed about the actual labour market situation: They were informed about their perceived gap based on their estimates of the employment rates from before. They were then informed about the actual gap and what it says about the situation of persons with disabilities in the labour market in order to help respondents in interpreting the information.10 They were told that despite the increasing employment rate of persons with disabilities, unemployed persons with disabilities are less likely to find a regular job. Germany has thus not achieved its goal of ensuring equal rights for persons with and without disabilities in the labour market.11 The other half of the respondents did not receive this information (control group).

| Perception of the gap in labour market participation |

How do respondents assess the participation of persons with disabilities in the labour market? Are there any differences in the assessments between respondents with and without disabilities? To answer these questions, we analyse how respondents from both groups perceive the gap in the employment rate between persons without and with disabilities. The perceived gap is the difference between the estimated employment rate of persons without disabilities and the estimated rate of persons with disabilities.

Figure 4 shows the distributions of the perceived gap for respondents with and without disabilities. First, it shows that most of the responses are above zero: as previously assumed, the majority in both groups perceives a lower employment rate of persons with disabilities compared to persons without disabilities. The distributions of the perceived gaps around the actual value of 33.5 percentage points (dashed line) denote that a considerable share of respondents in both groups misperceive the gap. If one accepts a deviation of up to five percentage points above or below the actual value (i.e. between 28.5 and 38.5 percentage points) as still a correct estimate, then 19 % of respondents without disabilities and 20 % of respondents with disabilities estimate the gap correctly. Even with a larger tolerance of up to ten percentage points deviation, misperceptions remain substantially large, where only 40 % of respondents without a disability and 35 % of respondents with a disability correctly perceive the gap. Respondents without disabilities on average estimate a larger gap (35.5 percentage points) than respondents with disabilities, whose average estimate is 27.7 percentage points. Compared to the actual gap of 33.5 percentage points, respondents

9 The quality of contact may also be important. Schwab (2017) investigates if contact with pupils with disabilities in the same classroom affects pupils’ attitudes towards persons with disabilities. He finds that pupils without disabilities who voluntarily participate in joint activities with fellow pupils with disabilities have more positive attitudes towards them than those with limited contact.

10 The intervention contains the following language inaccuracies or simplifications: The employment rate (Erwerbsquote) has been abbreviated to the more familiar labour force participation rate (Erwerbsquote), but the difference between the concepts is unlikely to be familiar to the general public, and the difference between the values is small. The difference in the employment rate is 33.5 instead of 31 percentage points. The values are taken from the most recent data available from Destatis 2013 at the time of the survey.

11 Germany has committed itself to this goal by signing the United Nations Convention on the Rights of Persons with Disabilities (UN Disability Rights Convention) in March 2007.
without disabilities thus slightly overestimate the gap, while respondents with disabilities tend to underestimate it.

This difference in perceptions between respondents with and without disabilities is also confirmed in regression analyses using the ordinary least squares (OLS) estimation method. Here, the perceived gap in the employment rates was regressed stepwise on a dummy denoting if the respondent has a disability or not, on a dummy denoting contact with persons with disabilities, and several control variables. Model 1 in Table 2 confirms that respondents with disabilities estimate the gap about eight percentage points lower than respondents without disabilities. The difference is highly statistically significant and the coefficient hardly changes when relevant control variables (socio-demographic characteristics, occupational status, and industry) are taken into account in model 2. This also shows that health status does have an additional explanatory value. Instead, it is the recognised disability that matters.\(^\text{12}\)

The difference in the estimates stems mainly from the fact that respondents with disabilities estimate their own employment rate as significantly higher than respondents without disabilities (see Table A4). A possible explanation for this significant difference is that the respondents with disabilities derive their own employment situation from that of the entire group of persons with disabilities. Similar to the finding that unemployed persons overestimate the unemployment rate (see Cardoso et al. 2016), it seems that respondents with disabilities assume that many other persons with disabilities must also be employed. Both groups of respondents estimate the employment rate of persons without disabilities very similarly (see Table A5).

However, another explanation for the group difference could also be the different social environments of both groups of respondents. Model 3 tests the influence of the environment with three variables, each measuring the frequency with which respondents have contact with persons with disabilities: in their neighbourhood, at their workplace and in their circle of friends.

The results show that frequent contact at work reduces the perceived gap by almost four percentage points. The difference is statistically significant. Contact with persons with disabilities in the neighbourhood or among friends does not make a significant difference. This means that more frequent contact with employed persons with disabilities additionally reduces the estimated

\(^{12}\) See Table A3 in the online appendix, which shows the coefficients of all control variables. For download at https://www.bibb.de/dienste/veroeffentlichungen/de/publisher/show/17924.
size of the gap. In these calculations, however, the coefficient of respondents with disabilities changes only slightly. The results suggest that the difference in the perceived gap between the two groups of respondents can only be explained by the environment to a small extent. Rather, as previously suggested, respondents with disabilities seem to extrapolate their own employment situation to the employment situation of their group. However, the results also show that the (work) environment plays a role beyond the disability status of the respondents. Here, the environment has a similar effect as the own group status: Respondents with more frequent contact with employed persons with disabilities estimate the gap to be lower. They thus seem to infer the general employment situation of persons with disabilities from their own working environment.

From these first analyses it can be concluded that both one’s own status (disability or non-disability) and one’s own environment (contact with employed persons with disabilities) visibly influence the assessment of the employment rate gap.

Effects of the survey experiment

In a next step, we analyse whether the information about the actual gap passed on in the survey experiment has an influence on the attitudes of respondents with disabilities. First, we examine to what extent the treatment has an effect on how respondents with disabilities evaluate their integration in the labour market. Next, we test whether respondents in the treatment group assess various causes of the employment gap differently than respondents in the control group. For this purpose, ordinary least squares regressions are used to determine whether there is a significant difference between the treatment group and the control group for these different dependent variables. A significant difference can be causally attributed to the treatment.

Table 3 shows results of the treatment effect on the assessment of the integration of persons with disabilities in the labour market (not at all good [1] - very good [5]). In model 1, we see that respondents with disabilities who are informed about the actual gap assess their integration in the labour market as significantly worse than those who did not receive any information. This treatment effect is robust to adding control variables (model 2). The negative treatment effect makes sense because respondents with disabilities tend to be less integrated than they had assumed. The separate estimates in models 3 and 4 confirm that the significant negative effect is attributable to the treatment. There are no significant differences between both groups for a variety of variables, which the treatment should not have influenced.

Table 2: Perception of the employment rate gap (OLS-regressions)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref. without disabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents with disabilities</td>
<td>-7.757***</td>
<td>-7.986***</td>
<td>-7.668***</td>
</tr>
<tr>
<td>Ref. rare contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequent contact with persons with disabilities</td>
<td>1.624</td>
<td>1.620</td>
<td>1.526</td>
</tr>
<tr>
<td>... in the neighbourhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... at work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... among friends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control variables</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>931</td>
<td>931</td>
<td>931</td>
</tr>
<tr>
<td>R²</td>
<td>0.033</td>
<td>0.054</td>
<td>0.063</td>
</tr>
</tbody>
</table>

Notes: Weighted results with robust standard errors. The dependent variable is the perceived employment rate gap between persons with and without disabilities. The control variables are health, gender, education, age, age squared, region (eastern vs. western Germany), occupational status and sector. ***p<0.01, **p<0.05, *p<0.1.

no significant effect for the subgroup of those who estimated a too large gap.

Figure 5 depicts the treatment effects on the assessment of possible causes for the employment gap between persons with and without disabilities (completely unimportant [1] – very important [5]). The results show that respondents in the treatment and control group assess the causes differently. In particular, differences in qualification and the lack of political support were considered less important for the employment gap by the treatment group compared to the control group. However, these differences in the assessments are not statistically significant. One possible interpretation for this is that the respondents had already clear ideas about the causes for the gap and were thus not significantly influenced by the intervention.

In summary, the results presented show a significant treatment effect on respondents’ attitudes only for one variable, namely integration. It follows that respondents with disabilities, when informed about the actual gap in the employment rates, evaluate their situation but not the causes for the gap differently than respondents in the control group. The significant treatment effect can be interpreted here as the attitude of respondents with disabilities towards their integration in the labour market if they were informed about the actual situation. A consistent response behaviour emerges: Employed persons with disabilities perceive themselves as less integrated as soon as they learn that their general situation on the labour market is worse than previously assumed. The causes for the existing labour market gap can be divided into person-related (qualification, motivation, performance) and environment-related (jobs, political measures, discrimination) aspects. It is striking that respondents with disabilities do not demand more changes in the environment when being informed about the actual gap in the employment rate. Further analysis could explore the reasons for this. However, one has to keep in mind that even the respondents in the control group assess discrimination and lack of jobs as well as policy measures and performance with more than three points as important determinants of the employment rate gap. Thus, even though we do not find significant differences between treatment and control group, on an aggregate level these explanations play a significant role for all respondents. At the same time, the results on person-related aspects gain a special importance in the context of the analyses on qualification-adequate work input. Thus, from the perspective of respondents with disabilities, qualification does not play a significant role for the labour market gap. It remains here an open question how the response behaviour would have turned out in the case of a treatment that had informed respondents about the share of over- and under-qualified employment.

**Summary and outlook**

Although the employment of persons with disabilities in the general labour market has increased in recent years, their compulsory employment rate in companies is still below the legally prescribed five percent quota and the employment rate gap between persons with and without disabilities is one third. Access to the labour market is thus still associated with barriers for persons with disabilities even though most of them are well qualified. In addition to the access to the labour market, the quality of employment is also of central relevance.

The evaluations of the analyses on occupational participation show that employees with disabilities are only partially less well positioned on the general labour market than employees without disabilities. Employed persons with disabilities are less likely to have a job that corresponds to the profession they acquired and are less likely to be in a management position. At the same time, the results show that an increasing degree of disability is not associated with less independence at work. If we compare how often both groups perform complex activities that are increasingly in demand on the labour market in the course of digitalisation and Industry 4.0, the data situation is not clear. Measurements that determine the complexity of activities based on the German Classification of Occupations indicate that employees with

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**Table 3: The treatment effect on respondents with disabilities: Assessment of the integration of persons with disabilities in the labour market (OLS regressions)**

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>-0.157** (0.080)</td>
<td>-0.176** (0.075)</td>
<td>-0.276*** (0.096)</td>
<td>-0.054 (0.119)</td>
</tr>
<tr>
<td>Control variables</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
</tr>
<tr>
<td>Observations</td>
<td>650</td>
<td>650</td>
<td>281</td>
<td>168</td>
</tr>
<tr>
<td>R²</td>
<td>0.009</td>
<td>0.114</td>
<td>0.152</td>
<td>0.206</td>
</tr>
</tbody>
</table>

Notes: Weighted results with robust standard errors. The dependent variable is the assessment of the integration of persons with disabilities in the labour market (not at all good [1] – very good [5]). The control variables are health, gender, education, age, age squared, region (eastern vs. western Germany ), occupational status and sector. 

***p<0.01. **p<0.05. *p<0.1.

disabilities perform complex activities less frequently than employees without disabilities. However, individual self-assessments of employees in both groups indicate a similar frequency of dealing with complexity, change and uncertainties. As the sample only includes employed persons, it is not possible to assess to what extent the differences as well as similarities between employed persons with and without disabilities influence labour market entry. However, the analyses make it clear that more detailed information than the presence of a disability is needed to assess labour market participation. The ETB follow-up survey can be used to conduct further analyses in this regard.

Our analyses on perceptions show that a considerable share of the respondents misperceive the gap in the employment rate between persons with and without disabilities. Compared to the actual gap of 33.5 percentage points, respondents without disabilities on average slightly overestimate the employment rate gap, while respondents with disabilities tend to underestimate it. Multivariate analyses show that having a disability or being in personal contact with employed persons with disabilities significantly influence the estimates of the employment rate. Respondents with disabilities who are informed about the actual employment rate gap assess their integration in the labour market worse than respondents with disabilities who did not receive this information. However, the intervention does not significantly affect their assessments of possible causes for this gap. Respondents with disabilities in both the treatment and control group regard discrimination, lack of jobs, insufficient policy actions and performance as important causes. Building on these analyses, future studies could shed light on further demands that arise from raising awareness about knowledge gaps in participation.

Figure 5: Treatment effects for respondents with disabilities: Assessment of the causes for the employment rate gap

Note: Graphic representation of weighted results based on OLS regressions (without control variables) with robust standard errors and 95 % confidence intervals. Dependent variables are assessments of different causes for the employment difference: differences in qualifications, too few jobs, differences in ability, too few political measures to support people with disabilities, differences in work motivation and employer preference People without disabilities (discrimination).

Source: Follow-up of the BIBB/BAuA Employment Survey 2018, n = 931.
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Abstract

The quality of employment of employees with disabilities differs from that of employees without disabilities only for a few selected indicators. This is shown by analyses based on a follow-up survey of the BIBB/BAuA Employment Survey (ETB) 2018. The follow-up survey also includes a survey experiment on the perception of the situation of people with disabilities on the labour market. A significant proportion of respondents misperceive the gap in labour force participation between people with and without disabilities. Employed persons with disabilities assess the labour market integration of persons with disabilities to be worse when they are informed about the actual gap in labour market participation.