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Prof. Dr. Serfling

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CROWDWORKING MONITOR NR. 2

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I. Executive summary

This is the second in a series of four planned reports investigating the phenomenon of "crowdworking" in Germany. As the data collection is continuously ongoing, this report extends and updates the findings of the *Crowdworking Monitor No. 1* published in September 2018.

The most important results:

- Extent: This study reports a share of up to 4% of respondents who currently engage in crowdworking. If those who are not remunerated were to be excluded, then the share decreases to 2.6%. Furthermore, another 2.9% report that they could imagine participating in crowdwork in the future. 2.3% claim to have participated in crowdwork in the past. In total, up to 9.2% of the respondents can be considered "to have an affinity for crowdwork" [i.e., the sum of active crowdworkers, past but no longer active crowdworkers, and people who report being able to imagine performing crowdwork in the future] [German: "Crowdworking-Affine"]. These numbers deviate only slightly from the last report. In comparison to a recent European study conducted by Pesole et al., which estimates that 10.4% of the German population are active or past crowdworkers, this study is more conservative by estimating past and active crowdworkers at 6.9% of all respondents.

- Sociodemographic characteristics: With regard to crowdworkers' sociodemographic characteristics, this study finds that the identified trends from the last report are being confirmed or have even reinforced. Significantly more men than women are active crowdworkers (+13%); crowdworkers are overrepresented in the young age segments and in the so-called 'city states' in Germans north. A major deviation is that crowdworkers are underrepresented by 8% in the Western region of Germany (previously only by 1%). Crowdworkers are also more likely to be single – a trend that has strengthened since the last report and can be explained by the inclusion of the younger age segment of 15-18 year old, where the share of crowdworkers is higher (see above). Another major deviation from the first report is reported with regard to crowdworkers' educational level. This can be explained by the change in data weights. The share of crowdworkers without a high school degree is now a lot higher. Data

suggests that crowdworkers are on average still well-educated, however, not better-educated than the general population.

- Employment status: With regard to all active crowdworkers' employment status, it was found that the share of full-time employees and self-employed decreased, while at the same time the share of students doubled. While the share of employees is at 19% in this study's sample, Pesole et al. state that on a European level, 68% of all crowdworkers declare that they are employees. This surprisingly high number could be due to the fact that crowdworkers consider themselves as being employed by the platform they work for.

- Update on additional items: Overall, there are only few deviations from the last report. It was found that 47% of crowdworkers do not rely on crowdworking as a primary source of income (previously 56%), while 28% (previously 22%) state that crowdworking is definitely their main source of income. 41% of all respondents work less than 10 hours a week as crowdworkers. Thus, in line with the findings of Pesole et al. and other studies, it can be demonstrated that crowdworking is a side job for the large majority. In addition, this study's platform coverage has increased-- while previously only 21-26% of the respondents worked for the crowdworking platforms proposed by this survey, they now cover 37-42% of the platform market. Guru, Lieferando and Foodora are the platforms that were mentioned most by respondents.

- Income of crowdworkers: According to the survey, crowdworkers' median gross earning per hour is 30€, which goes down to 29€ as soon as search time is included as work-time. The median earning per task is 47€. The number of completed tasks per week range between 3 and 40. More than half of the respondents need less than one hour to complete a task, while 26% need more than 10 hours. Notably, there is no gender pay-gap when it comes to the median earnings. However, on average (arithmetic mean) men earn more per hour than women, while the youngest age segment earns least per task. High-school graduates with the university entrance qualification (i.e. 12-13 yrs. of schooling) earn most per task and per hour, while graduates with 9 years of schooling earn more than graduates with 10 years of schooling. Additionally, self-employed people earn more than employees and those

who claim to need special skills for their crowdworking job earn, on average, double the amount as those who state that they need generalized skills only. If analysed by task, it was found that craftsmen earn the most per hour, while consultants earn the most per task. Writers and testers earn the least.

- Motivation and satisfaction: Money is not the main rationale for crowdworking -- crowdworkers' motives vary according to their living situation, level of education and type of task (even though income satisfaction and crowdworking satisfaction are correlated). It is striking that only 5% of the sample engage in crowdworking out of necessity. Among these, a large share is unemployed and more likely to be female. Women are also less satisfied with their crowdworking job than men. If analyzed by occupational groups, it was found that the unemployed are the least satisfied, while pensioners and students are highly satisfied. At the same time, full-time crowdworkers are a lot more satisfied than part-time crowdworkers. It can be assumed that the level of satisfaction might be best explained by the degree in which crowdworking can fulfill their individual expectations and needs.

- Outlook: In the future, the data will be further analysed in order to generate more insights with regards to the specific types of crowdworkers. It is planned to place a special emphasis on crowdworkers' living arrangements and the extent of their crowdworking activities. In addition, an aggregate "Crowdworking Sentiment Indicator" that can track the developments in the crowdworking market over time will be developed.

1. Introduction

This is the second in a series of four planned reports investigating the phenomenon of “crowdworking” in Germany. As the data collection is continuously ongoing, this report extends and updates the findings of the *Crowdworking Monitor No. 1* from September 2018. As defined in the first report, “crowdworking” is seen as *the completion of paid, short-term tasks conveyed via internet platforms or smartphone apps*. This includes tasks that are completed online (such as translation or software programming) and services that are provided offline/on-location (such as delivery work or cleaning). As this definition emphasises short-term tasks, revenues generated from online trade (such as eBay), ride-hailing services conveyed via apps and platforms (such as Uber) or lease of rooms and flats via platforms (such as AirBnB) are excluded. A similar definition of crowdworking was used by a recent European study published by the Joint Research Center of the European Commission on the crowdworking market (Pesole et al., 2018).

This study series is based on a continuous online survey conducted by the Berlin-based online survey firm Civey GmbH. The data are analyzed by Prof. Oliver Serfling and his team at the Faculty of Society and Economics at Rhine-Waal University of Applied Sciences (Hochschule Rhein-Waal). The project is mainly funded by the German Ministry for Labor and Social Affairs (Bundesministerium für Arbeit und Soziales). The goal of this series of studies is to contribute to the improvement of the thus far limited data on crowdworking in Germany. The data collection is conducted via an HTML-widget embedded in more than 25,000 webpages, on blogs and news portals (e.g. Spiegel Online, Welt.de, and T-Online). This setting allows to continuously survey a panel of internet users in Germany.

The present study depicts results from the collection of data from July 2017 up to October 15, 2018, up to which approx. 495,000 respondents had been surveyed. This is the largest sample size to date for a study of crowdworking in Germany. In comparison to the first volume of this study in September 2018, this report presents updates on the characteristics of crowdworkers and their tasks. Furthermore, and in response to discussions that emerged after the publication of the first report, methodological changes as the change from the electorate to the resident population as the reference universe and the use of more weighting variables, as well as aspects of data quality are discussed. Additionally, the income generated by crowdworking, the motivation and the satisfaction of crowdworkers was measured and analyzed for the first time.

To eliminate biases resulting from multiple participation, as well as the fact that all survey participants were internet users, the data from registered Civey users were post-stratified on the basis of the marginal distribution of sociodemographic characteristics of the German resident population as measured by the German Census ("Mikrozensus", conducted by the German Federal Statistical Office). In comparison to the first report, which used the German electorate as universe, for this second report, the resident population was used in order to include foreign nationals who reside in Germany but do not hold German citizenship.

The remainder of this report is organized as follows: Chapter 2 provides an update of the academic literature on crowdworking that was published since the draft of the first report. Most importantly the COLLEEM study of the Joint European Research Center is being discussed. The third chapter presents methodological changes that have occurred since the first report and discusses data quality aspects of the collected survey data. The fourth chapter is divided into five sections. First, it compares this study's findings with those of the quite similar COLLEEM-study. Second, it gives an update on the main changes in the sociodemographic characteristics of crowdworkers. Third, an update on additional crowdworking-related characteristics is discussed. Fourth, the preliminary results from an analysis of the income that is earned by crowdworking activities is presented. Fifth, the chapter provides the results of an analysis of the motivation and satisfaction of crowdworkers in the panel. The fifth chapter concludes the report and gives an outlook towards the next steps in the course of the research project.

2. New evidence on crowdworking in Europe

New European study on crowdworking published in 2018

A recently published study by the Joint Research Center (JRC) of the European Commission shows that the lack of reliable data on crowdworkers is not exclusively a German phenomenon (Pesole, Urzí Brancati, Fernández-Macías, Biagi, & González Vázquez, 2018, p. 10). In order to allow for better policy making, the JRC commissioned an online panel survey in partnership with DG EMPL[1] to provide an initial estimation of crowdworking in the EU member states. The Public Policy and Management Institute conducted the so-called COLLEEM[2] survey in June 2017 among internet users between 16 and 74 years old in 14 countries. The respondents (approximately 2,300 in each country) were identified

[1] Directorate-General for Employment, Social Affairs and Inclusion
[2] COLLaborative Economy and EMployment

by relying on the consumer insight network (CINT)[3]. To select respondents, the survey made use of non-probability quota sampling by gender and age group and post-stratification weights were computed for the following variables: level of education, the frequency of internet use and employment status (Pesole et al., 2018, p. 10). Crowdworkers were defined in the same way as in this study, including workers who produce digital deliverables, as well as those who produce tangible deliverables on-location.

COLLEEM survey estimates the share of active crowdworkers in Europe at 7.7%

The COLLEEM-study finds that, on average, 9.7% of the European workforce is providing crowdworking services. Germany is slightly above average with 10.4%, whereas the UK and Spain have even higher estimates than Germany (12 and 11.6%). Finland, Slovakia and Hungary score between 6 and 7%, bringing up the rear of the sample (Pesole et al., 2018). If only crowdworkers who have engaged at least once a month in crowdworking in the past year are considered, the European average drops to 7.7%. This is considerably higher than published by Groen et al., whom estimate the share of crowdworkers in the EU to be 5.9%, based on an analysis of 173 European platforms (Groen, Kilhoffer, Lenaerts, & Salez, 2017, p. 351). As Groen et al. only rely on data provided by the platforms themselves, it is not clear to what extent workers might be counted twice or more if they are registered on more than one platform. Therefore, the reliability of the estimation is questionable. Furthermore, comparability is limited, as Groen et al. rely on a sample of all active workers in Europe, while Pesole et al. consider all internet users between 16 and 74 years old; additionally, Groen et al. include transportation platforms in (such as Uber and Taxify) in their sample. If these two platforms are excluded, the estimate goes even further down to 4.3%.

Sociodemographics in line with the literature

Concerning the sociodemographic characteristics, the COLLEEM survey mainly corroborates the findings of the available literature (aggregated for all European countries surveyed); crowdworkers tend to be younger than the general population and well-educated as well (Pesole et al., 2018, p. 22). However, there are quite drastic differences between countries: while in Croatia the women to men ration of crowdworkers is 1 to 3, in Slovakia it is nearly 1 to 1. An interesting trend is that the more hours crowdworkers put in, the fewer females are represented. This trend further intensifies if

[3] The authors made use of a commercially available list of internet users as a sampling frame. The characteristics of these users are not publicly known, which makes it hard to judge the overall data quality. In addition, it is not transparent, among how many users the respondents were chosen.

it is combined with age. As the workload intensifies, the share of older women decreases dramatically (Pesole et al., 2018, p. 22). Interestingly, and somewhat unexpectedly, the COLLEEM survey also found that couples with children are slightly overrepresented among crowdworkers, who work more than 20 hours per week as crowdworkers or earn more than 50% of their income through crowdworking (ibid.).

Typical platform worker is a middle-aged male with children

In summary, this means that females are on average 4.2 percentage points less likely to be crowdworkers, highly educated people are 1.4 percentage points more likely to engage in crowdworking and respondents who have children are 5 percentage points more likely to be crowdworkers (Pesole et al., 2018, p. 27).

In section 4.1, the results of this study will be compared with the COLLEEM study and further details about the employment status, tasks and work hours of European crowdworkers will be provided.

3. Methodology

To identify survey participants as crowdworkers, the online, open-access web panel of the market and public opinion research company, Civey GmbH, prompts its panel-users since July 2017 with the following question: ***"Do you complete paid tasks that are conveyed via online platforms or online marketplaces?"*** [in German: "Arbeiten Sie für bezahlte Arbeitsaufträge, die Sie über Online-Plattformen oder -Marktplätze vermittelt bekommen?"] (i.e. question no. 1043, see: https://widget.civey.com/1043). If the answer is yes, an additional set of 25 crowdworking-related items is directed to the identified (current, past or future) crowdworker.[4]

In order to reduce the self-selection bias of respondents in an open-access survey, the collected responses are post-stratified along with socio-demographic characteristics based on the statistical grid provided by the German census and other sources. While in the first report, the German Federal Electorate was used as the reference population, this was changed to the German resident population aged 15 and older for this report in order to be more inclusive with regards to foreign, non-naturalized residents. Furthermore, in order to reduce remaining biases in the collected data, highest obtained educational degree and marital status were

[4] For a detailed description of the sampling and data collection method, pls. refer to the first report: Serfling (2018) For a detailed description of the sampling and data collection method, pls. refer to the first report: Serfling, O. (2018): Crowdworkig Monitor No. 1.

added as variables for the calculation of the sampling weights[5]. Despite this improved post-stratification and reduced self-selection bias, it can still be argued that the results are not representative for the German resident population, as there are still possible and likely biases with regards to unobservable variables, such as the intrinsic motivation of taking part in online surveys, which might be correlated with crowdworking behavior[6].

After the publication of the first report, discussions surrounding the validity and representativeness of its results emerged. A main argument against using online surveys for the measurement of crowdworking behavior is the likely assumption that crowdworkers might be overrepresented on the internet compared to the general population, which has been put forward by Bonin & Rinne (2017, p. 18). Statistically, this would constitute a positive correlation in the unobserved "internet affinity" with crowdworking-behavior. However, on the backdrop of declining response rates in telephone interviews (e.g. CATI) reaching levels of less than 5% of the initially randomized target sample and the existence of interviewer effects, which are absent in online-surveys, this argument turns likewise against the use of telephone surveys. Here, it can be assumed that those few respondents who can be reached via telephone and are willing to participate and provide meaningful answers differ substantially from the reference population. Furthermore, it is likely that their responsiveness to telephone interviews is negatively correlated with their internet affinity and attitude of being engaged in crowdworking. Moreover, such a bias cannot be fully resolved with the use of sampling weights. Thus, both survey types suffer from likely biases, but in different tails of the distribution.

Notwithstanding, the described biases will likely lead to the over-estimation of the population share of crowdworkers in online-surveys and an under-estimation in telephone surveys. This can be seen in the comparison of the results from empirical studies by interview modes[7]. Furthermore, it is far from clear whether such bias only exercises an impact on the estimation of the population-share of crowdworkers or also on other crowdworking characteristics as soon as crowdworkers are identified.

As the internet penetration has surpassed fixed-line telephone in Germany (Statistisches Bundesamt, 2018, p. 182) and interviewer

[5] The other stratification variables are: age, gender, state (Bundesland), population density at ZIP-code level, purchasing power at ZIP-code level, and political-orientation.
[6] For a more careful discussion see Serfling (2018, p. 12)
[7] For a summary and comparison of studies see e,g. Serfling, O. (2018, pp. 16).

effects are absent in online surveys, online surveys can be deemed as being a superior data collection method for studying the phenomenon at hand. As long as the type and magnitude of possible biases are not understood, results also of this study can only be seen as indicative, albeit unrepresentative.

3.1 Participants' response behavior

Another point of critique against online surveys is that there is no evidence on the trustworthiness of respondents and their answers, as the interview setting is highly anonymous. Civey is using various technical possibilities to prevent the impact of so-called "trolls", fake-accounts and bot-attacks on the survey database[8]. Additionally, only the responses of known registered users who provide a minimum set of sociodemographic data in the course of the interview sessions end up in the analysis sample. Within this research project, validity checks on various questions are conducted in order to rule out logically impossible combinations of answers. Furthermore, the general response behavior of crowdworkers in the whole Civey-panel is being assessed, consisting of (a) the overall nonresponse-rate (incidence of clicking the "next question" button on the total number of responded polls), (b) the panel activity (measured by the number of conducted polls per months) and (c) the duration of membership in the Civey-Panel.

In the reference period of this report, from July 2017 to the 15th October 2018, a total of 494,970 respondents replied to this study's crowdworking identification question (Poll #1043). Of these, 15,126 have opted for clicking on the "don´t know"-option, resulting in a sample of 479,844 meaningful answers and a "don't know"-rate (DK-rate) of 3.1%. Starting from this initial sample, ever-stricter qualification criteria were applied stepwise to the analysis sample, resulting in a decreasing number of observations. In order to see whether this sample selection has an impact on the estimation of the population share of crowdworkers, these shares are depicted along with the criteria, sample size and the DK-rate in Table 1 below.

It can be seen that the imposition of an overall Item-Nonresponse Rate (INR) of less than 3% on all items in the Civey-Panel has no significant effect on the sample size and crowdworking-estimate. Requiring that users are active Civey-Users with providing at least 15 answers per month results in the loss of 125k observations and a significant decline in the population share of active crowdworkers from 4.7 to 3.9 percent. As the panel attrition in web

[8] see e.g. https://civey.com/pro/unsere-methode

panels is usually high, it is of interest whether long-term Civey-users differ in their crowdworking behaviour from short-term users. As the survey is continuously ongoing and new panellists signup and enter the panel every day, the time-period of panel membership is measured relative to the maximum possible membership, i.e. the period after having been identified by question #1043 – which differs by user- until the 15th October 2018.

Table 1: Sample selection by respondent quality criteria

	weighted					absolute	
	Active CW (%)	Future CW (%)	Past CW (%)	CW affinity (%)	Non-CW (%)	Sample size (w/o DK)	Note: DK-rate (of all)
All respondents	4.7	2.7	2.8	10.2	89.8	479,844	3.1%
└ with overall INR-rate < 3%	4.7	2.8	2.8	10.2	89.8	456,504	3.0%
└ polls per month > 15	3.9	2.5	2.7	9.0	91.0	325,091	2.7%
└ rel. panel duration >10%	3.6	2.3	2.6	8.4	91.6	161,261	2.9%
└ rel. panel duration >45%	4.0	2.3	2.9	9.3	90.7	34,364	3.3%
└ w/o DKs	4.0	2.3	2.9	9.3	90.7	34,364	0.0%

Source: own calculation

As a qualification criteria, 10 and 45 per cent of this relative panel duration is applied to the sample, i.e. 3, and 5.6 months on average respectively. As the average relative panel duration after responding to the crowdworking identification question is 21%, the sample size declines further, after the more strict qualification criteria are being imposed. The results are more interesting with respect to the sample shares of crowdworkers. As the share of active crowdworkers drops to 3.6% for those who have participated for longer than an average of 3 months (i.e. 10% relative duration) it increases again back to the initial 4% after removing all respondents that left the Civey panel within less than 45% of panel duration (i.e. 5.6 months after identification as a crowdworker).

This lets us conclude that there is no linear relationship between the panel activity of Civey-users and their crowdworking affinity. However, inactive Civey-panelists, are inclined to be more actively engaged in crowdworking, while relatively active, short-term panelists are not. Longer-term and active panelists tend to be the

average with respect to crowdworking affinity. For the subsequent analysis, the most restrictive sample definition (INR < 3%, polls per month >15, rel. panel duration > 45%) with a meaningful answer on the identification question, i.e. without the "don't know" option, is used. For this sample, the full validity of the resulting data is given, as there are no logically impossible combinations of answers.

3.2 Participants' internet usage patterns

As outlined above, there are concerns that the respondents of web-surveys systematically differ from the unknown (sic!) universe of internet users. Fortunately, Eurostat is providing some evidence about the frequency of internet usage of the population within its Community Survey on ICT usage in households and by indvidiuals[9]. Civey asks its users about their frequency of internet usage along the categories of (a) multiple times daily, (b) once a day or nearly every day, (c) weekly, (d) less. Categories (a) and (b) can easily be merged into a "daily"-category in order to make it comparable to the Eurostat questionnaire.

Table 2: Relative difference in internet usage: German population vs. Civey-users vs. crowdworkers

	Rel. Diff. Civey vs Population		Rel. Diff. CW vs. Civey					
	Population[10]	**diff. CIVEY**	**CIVEY-User**	**Non-CW**	**CW-Affinity**	**Active CW**	**Past CW**	**Future CW**
Multiple times daily			81.7%	-0.3	4.4	7.0	0.8	5.4
Once a day or nearly every day			16.0%	0.4	-4.6	-7.3	-1.2	-5.4
DAILY (sum)	78%	20	97.7%	-0.5	0.1	-0.2	0.0	0.9
WEEKLY, i.e. min. once per week (not daily)	9%	-7	1.7%	0.0	-0.5	-0.8	-0.5	0.1
LESS, i.e. not every week	13%	-12	0.6%	-0.1	0.8	1.2	0.9	-0.1
Sum	100%	0	100.0%	0.0	0.0	0.0	0.0	0.0

Source: own calculation

From our sample of respondents, approx. 50k (i.e. 10%) have replied to the internet usage item. Table 2 summarizes the differences in internet use of these Civey Users compared to the population (in column 3) and of Crowdworkers compared to these

[9] See: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals#Internet_usage (accessed: February 15, 2019) and the time series linked there; Additionally see: Eurostat regional yearbook, 2017, p. 167

[10] EC Community Survey on ICT usage in households and by indvidiuals, data-series: [isoc_ci_ifp_fu], for Germany, 2017

Civey-Users (in columns 5-9). As expected, the Civey-Users are more frequently using the internet compared to the population, and exceed the daily use by 20 percentage points. Within the daily internet use, we see that an ovewhelming majority of 82% of Civey-Users are using the internet multiple times daily. If we compare the frequency of internet use of the various crowdworking types (Non, active, future, past) we only see significant differences within the daily category: Active and future crowdworkers are using the internet more often multiple times daily than the other Civey-Users, by 7 and 5.4 percentage points respectively. However this is compensated by a lower frequency of the category (b) once per day or nearly ever day. Thus, in the aggregated daily use of the internet there is no significant difference to other Civey users. Reassuringly, we also find no significant difference of all crowdworking types to Civey users with respect to the other frequencies of internet use. The differences are mostly close to zero and not exceeding 1.2 perecentage points in maximum.

This lets us conclude that Crowdworkers are obviously originating from a same universe of highly active internet users, as participants in web surveys do. Evidently, active crowdworkers need the internet more often to perform their tasks, also future crowdworkers, as they are mostly younger.

4. Results

4.1 Comparison to the COLLEEM study

Overall estimate of crowdworking more conservative in our study

The COLLEEM survey finds that 11.8% of all German internet users have provided crowdworking services at one point in time (10.4% when taking into account that not all Germans use the internet) (Pesole et al., 2018, p. 15). Our results show that 6.9% of survey respondents are either active or past crowdworkers. If we exclude the crowdworkers who claim to not have been paid, the overall number of currently active crowdworkers whose goal is to generate income goes down from 4.0% to 2.3%. Our study is thus a lot more conservative in estimating the extent of crowdworking in Germany.

If the frequency of crowdworking is considered, the COLLEEM survey finds that 78% of all identified crowdworkers are active at least on a monthly basis (Pesole et al., 2018, p. 18). Comparably, our data show that 68% of all active crowdworkers have worked at least 6 weeks during the last half year, i.e. on average 1 week per month (see Table 3 below).

Table 3: Crowdworked weeks in the last six months

#2195	**How many weeks during the last six months have you performed a paid work task allocated through an online platform or an online market place?**	Active CW	Future CW	Past CW	Total CW
	21 - 26 weeks	43.5%			43.5%
	16 - 20 weeks	8.0%			8.0%
	11 - 15 weeks	6.2%			6.2%
	6 - 10 weeks	10.4%			10.4%
	5 weeks or less	31.9%			31.9%
	Don´t know (*)	35.1%			35.1%
	Sample size: 2,917				

Source: own calculation
Note: (*) Percentage share of "don't know" answers based on the sample size; shares of other answer options based on sample without "don't know"s.

Crowdworking is a side job for the majority

With respect to the share of the personal income that is generated by crowdworking, the comparability of both studies is limited. Nonetheless, the trends seem to be similar: In the COLLEEM study 62.8% have generated at least a quarter of their income with crowdworking and 23.9% even more than half of their income (Pesole et al., 2018, p. 18). In our sample, 25.7% of active crowdworkers state that crowdworking is clearly their main income and for 67% it is at least not a clear side income (see Table 4). However, both studies agree that for a majority crowdworking is not the main source of income.

Table 4: Main vs. incidental earnings

#2214	**In reference to the performed tasks allocated through an online platform or an online market place conducted during the last half year, were they your main income or side income?**	Active CW	Future CW	Past CW	Total CW
	Main source of income	25.7%			25.7%
	Mostly main source of income	9.0%			9.0%
	Roughly half-half	15.3%			15.3%
	Predominantly side income	16.9%			16.9%
	All side income	33.2%			33.2%
	Don´t know (*)	18.8%			18.8%
	Sample size: 2,886				

Source: own calculation
Note: (*) Percentage share of “don’t know” answers based on the sample size; shares of other answer options based on sample without “don’t know”s.

With regard to the implementation of tasks, the COLLEEM survey finds that German crowdworkers implement their services slightly more often online than on-location. In our dataset, a slight relative majority of crowdworkers provide their services in the physical world (39%) opposed to 33% of crowdworkers who complete their assignments predominantly online. A more significant difference is that another 28% state to do both, which exceeds that category of the COLLEEM study by far.

Table 5: Offline vs online crowdworkers

#2191	**Did you complete your crowdworking tasks online or in the real world?**	Active CW	Future CW	Past CW	Total CW
	Only online	24.3%			24.3%
	Predominantly online	9.1%			9.1%
	Both	27.7%			27.7%
	Rather in the real world	11.4%			11.4%
	Only in the real world	27.5%			27.5%
	Don´t know (*)	18.0%			18.0%
	Sample size: 2,928				

Source: own calculation
Note: (*) Percentage share of “don’t know” answers based on the sample size; shares of other answer options based on sample without “don’t know”s.

COLLEEM survey corroborates extent of crowdworking

Furthermore, the aggregated COLLEEM-sample for all European countries (here data for Germany is not available) shows that 42% of crowdworkers work on platforms less than 10 hours a week and three quarters work less than 30 hours a week (Pesole et al., 2018, p. 48). These findings are very similar to our study in Germany, which finds that 40% work less than 10 hours a week and 61% work less than 30 hours a week. Crowdworking is not only in Germany, but also on the European level, predominantly part-time employment. However, it seems that there are more full-time crowdworkers in our sample (39% with > 30hrs per week).

Table 6: Crowdworked hours per week

#2216	**How many hours do you spend on crowdworking in a regular week?**	Active CW	Future CW	Past CW	Total CW
	More than 40 hours	30.9%			30.9%
	30-40 hours	7.8%			7.8%
	20-30 hours	6.4%			6.4%
	15-20 hours	8.8%			8.8%
	10-15 hours	6.0%			6.0%
	5-10 hours	17.5%			17.5%
	Less than 5 hours	22.5%			22.5%
	Don´t know (*)	22.0%			22.0%
	Sample size: 2,872				

Source: own calculation
Note: (*) Percentage share of "don't know" answers based on the sample size; shares of other answer options based on sample without "don't know"s.

Concerning the sociodemographic characteristics, the COLLEEM survey mainly corroborates the following findings (aggregated for all European countries surveyed): crowdworkers tend to be younger than the general population and well-educated (Pesole et al., 2018, p. 22). Furthermore, couples with children are slightly overrepresented among crowdworkers (ibid.). Also in our survey, married persons (or couples) constitute the majority with 45.7% within the group of active crowdworkers (see Table 9 below). However, this is 6% lower than the population share of married couples. Additionally, active crowdworkers live with more children in their household than non-crowdworkers. A result of COLLEEM survey that is only partly reflected by our results is that the share of women decreases with rising intensity of crowdworking. In contrast, we find that the workload of women is more extremely distributed-- while more than 40% of all female crowdworkers work less than 5 hours a week, an additional 23% indicated working more than 40 hours a week, with lower shares in between.

Differences with regard to employment and marital status

With regard to the employment status, the results of the COLLEEM survey differ greatly in comparison to our results. In their sample, 68% consider themselves as employees (Pesole et al., 2018, p. 31), while our study finds that only 18.5% of all active crowdworkers are either full- or part-time employed. Pesole et al. hypothesize that the surprisingly high number of employees could

be explained by the fact that many crowdworkers have another job and engage in crowdworking only on the side. This hypothesis is countered by our finding that only 13% of our surveyed active crowdworkers declare that “doing it on the side” is their main motivation for being involved in crowdworking activities. A second explanation is that crowdworkers consider themselves as being employed by the platform they are working for (Pesole et al., 2018, p. 31). As the COLLEEM survey only provides aggregate results for all countries surveyed, a direct comparison is not possible. However, we believe that due to the nature of services delivered via platforms, the share of self-employed among crowdworkers should exceed their share of the population. This assumption is also supported by the finding that the share of self-employed becomes larger with the more hours that are spent on crowdworking (Pesole et al., 2018, p. 32) and provides further evidence towards the significant differences between part-time and full-time crowdworkers.

4.2 Update on the socio-demographic characteristics of crowdworkers

This section discusses major developments with regards to crowdworkers’ sociodemographic characteristics compared to the published results in our previous report *Crowdworking Monitor No. 1*. Deviations in the results might originate from two of the following sources: first, as explained in section 3, the weighting scheme has been changed such that results are post-stratified along the distribution of the German residential population (compared to the German electorate before). This involves the inclusion of the age group of 15-18 years, which was neglected before. Furthermore, additional variables, such as family status and education, have been recognized in the calculation of the weights, leading to stronger deviations in these variables compared to the last report. Second, the field time has been extended by 6 months from July 2017 to October 15, 2018 (April 15, 2018, before), involving new respondents in the analysis increasing the sample size.

The tables in this section present in the first row the overall share of the identified crowdworker-type in the analysis sample in per cent. From the second row onwards, the table presents in column 1 (“all”) the sample-share of the respective socio-demographic category that sums column-wise over all categories up to 100%[11]. Columns 2-6 present the deviation of the respondent-share by

[11] For those sociodemographic variables that were used to calculate the post-stratification weights, this column resembles the distribution within the German resident population.

crowdworker-type from the total sample-share of respective socio-demographic category (in percentage points). These deviations sum up column-wise to 0.

Gender and Age

Crowdworkers are more likely to be male and younger than the average population distribution

The trend that men are more likely to be crowdworkers than women is confirmed in our data set. Among those whom are defined as having an affinity for crowdworking, men are overrepresented by 6% (previous report: 2%). If we only take active crowdworkers into account, the difference is even more striking as women are underrepresented by 13%. This finding is in line with the literature that unanimously states that women are less likely to be crowdworkers than men (Bertschek, Ohnemus, & Viete, 2016, p. 9) (Bonin & Rinne, 2017, p. 13) (Pesole et al., 2018, p. 22). Concerning crowdworkers' ages, we find again that crowdworkers are overrepresented in the age groups below 50. In particular, young people aged 22-29 are significantly more likely to be crowdworkers (+11% in comparison to + 3% in the previous report). A fifth of all active crowdworkers is to be found within this age group. When future crowdworkers, especially the youngest age segment (ages 15-21), are compared to the average population distribution, 12% more young people state that they are willing to engage in crowdworking in the future.

Table 7: Gender and age

	Do you perform paid work tasks allocated through online platforms or market places?					
	All	**Non-CW**	**CW Affinity**	**Active CW**	**Future CW**	**Past CW**
Total	100.0%	90.7%	9.3%	4.0%	2.3%	2.9%
Gender:						
Women	51.2%	-1.8	-5.5	-12.7	2.7	-2.0
Men	48.8%	1.8	5.5	12.7	-2.7	2.0
Age:						
15-21	3.5%	-0.7	4.4	2.6	12.0	1.0
22-29	9.0%	-0.6	7.3	10.9	5.0	4.2
30-39	12.5%	0.4	1.6	0.3	4.1	1.4
40-49	15.2%	0.3	8.4	6.8	1.8	15.8
50-64	33.0%	-2.0	-12.2	-11.2	-7.8	-16.9
65+	26.8%	2.6	-9.6	-9.3	-15.2	-5.5

Source: own calculation

Region

Regarding the regional distribution of crowdworkers, we find again that crowdworkers are slightly overrepresented in Germany's so-called city states (i.e. Hamburg, Berlin, Bremen) and in the North of Germany. A major difference to our previous data set is the lower number of active crowdworkers in the Western region of Germany. Crowdworkers are underrepresented by 6% in the West, as compared to only 1% in the previous report.

Table 8: Region

	Do you perform paid work tasks allocated through online platforms or market places?					
	All	**Non-CW**	**CW Affinity**	**Active CW**	**Future CW**	**Past CW**
Total	100.0%	90.7%	9.3%	4.0%	2.3%	2.9%
Region:						
City states	7.9%	0.2	1.7	1.8	0.8	2.5
East	15.8%	1.4	-2.4	-0.2	-5.0	-3.1
North	14.0%	0.5	2.5	3.3	-0.3	3.8
South	28.3%	1.3	1.3	0.9	1.9	1.3
West	34.0%	-3.4	-3.1	-5.8	2.7	-4.5

Source: own calculation

Family status

Crowdworkers are more likely to be single

Our previous finding that crowdworkers are less likely to be married or in a relationship than the overall survey participants/population is corroborated by our current results. However, the number of active crowdworkers who state to be single is significantly higher than in our last report. Active crowdworkers are overrepresented by 5%, and when analysing crowdworking affinity, singles are overrepresented by 13% (2% previous). This amounts to an overall share of 37% of singles among all active crowdworkers. Besides the fact that the marginal distribution of the family status now resembles the German residential population, another possible explanation for this increase could be the fact that our sample now contains more crowdworkers in the age segment 22-29, who are more likely to be single than older Germans. In a similar vein, the finding that future

crowdworkers are 18% more likely to be single mirrors the finding that future crowdworkers are overrepresented in the youngest age segment.

Table 9: Family status

	Do you perform paid work tasks allocated through online platforms or market places?					
	All	Non-CW	CW Affinity	Active CW	Future CW	Past CW
Total	100.0%	90.7%	9.3%	4.0%	2.3%	2.9%
Family status						
single	31.9%	-0.2	13.3	5.4	18.3	19.5
married	51.8%	4.8	-9.4	-6.1	-12.0	-11.6
divorced	10.2%	-4.6	-4.1	-2.5	-3.3	-6.6
widowed	6.1%	0.0	0.2	3.2	-3.0	-1.3

Source: own calculation

Highest educational degree

A major deviation from the previous report concerns the highest level of achieved education, as this variable was subject to post-stratification. Active crowdworkers without a secondary school degree are now overrepresented by 14% (as compared to 6% before). The share of active crowdworkers who graduated with the university entrance qualification has dropped from 65% to 32% (which implies that this segment is underrepresented by 2 percentage points). Conversely, the share of active crowdworkers who graduated after only 9 years of schooling (in German: Hauptschulabschluss) rose from 10% to 26% (which still means an underrepresentation by 6%). Crowdworkers are thus well educated, however, not better-educated than the general population.

Table 10: Education

	Do you perform paid work tasks allocated through online platforms or market places?					
	All	Non-CW	CW Affinity	Active CW	Future CW	Past CW
Total	100.0%	90.7%	9.3%	4.0%	2.3%	2.9%
Educational attainment:						
9 years	31.8%	-3.6	-3.3	-6.0	-19.7	13.5
10 years	28.6%	2.6	-4.2	-5.5	6.8	-11.3
12-13 years	34.9%	2.4	2.1	-2.7	12.7	0.0
Pupil	0.4%	-0.1	0.8	0.3	0.9	1.3
No graduation	4.2%	-1.2	4.6	13.8	-0.8	-3.4

Source: own calculation

Employment Status

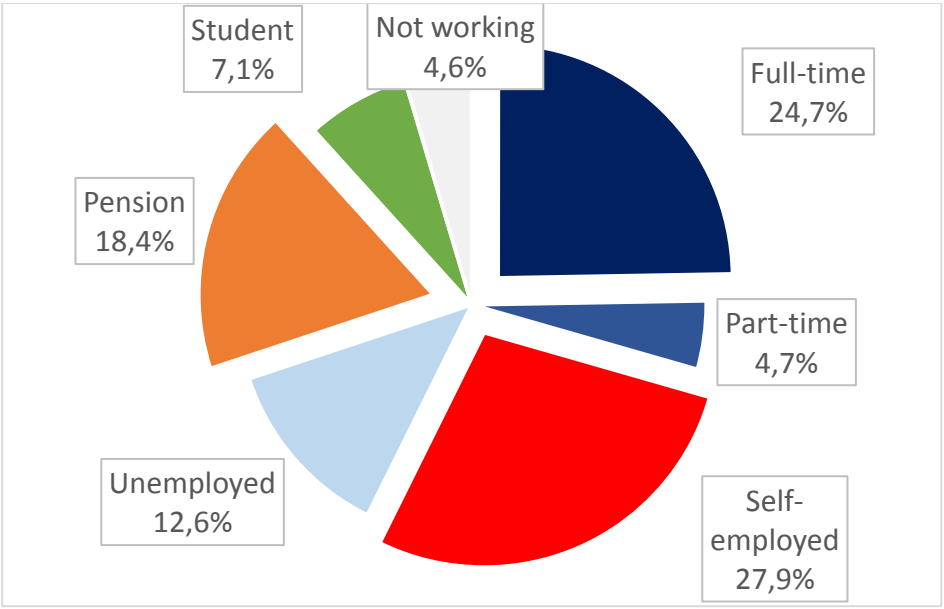
With regard to all active crowdworkers' employment status, we find that the share of self-employed crowdworkers decreased from 33% to 28%. At the same time, the share of unemployed increased by 4.5 percentage points from 8.1 to 12.6% and pensioners from 12.6 to 18.4%. However, self-employed and full-time employed remain the largest groups within active crowdworkers.

Table 11: Employment status

	Do you perform paid work tasks allocated through online platforms or market places?					
	All	Non-CW	CW Affinity	Active CW	Future CW	Past CW
Total	100.0%	90.7%	9.3%	4.0%	2.3%	2.9%
Employment status:						
Full-time	37.6%	3.9	-9.5	-11.8	-4.8	-10.9
Part-time	8.0%	0.7	-1.0	-3.1	-1.0	2.1
Self-employed	14.4%	-5.7	6.9	14.7	3.3	-1.1
Unemployed	4.8%	-1.1	6.5	8.3	6.5	3.7
Pension	27.4%	3.1	-8.2	-12.5	-15.3	4.8
Student	4.1%	-0.5	3.4	3.3	5.5	1.6
Not working	3.8%	-0.4	2.0	1.0	5.7	-0.1

Source: own calculation

Figure 1: Employment status of active crowdworkers



Source: own calculation

4.3 Update on additional items

Few deviations from the last report

In this section, the main deviations derived from the additional crowdworking questions are presented (see also the annex of Serfling, O., 2018). Due to the algorithm that is used for channeling single questions to respondents, the sample sizes vary for each question. The same data weights are applied as in the previous section. Overall, only few deviations from the previous report were identified.

47% do not rely on crowdworking alone financially

When inquiring whether respondents rely on crowdworking for their main income or whether it is an additional source of income, 33% state that they clearly do crowdworking on the side. Including another 14% who state that they rather use crowdworking as an additional source of income, the sum comes to 47% of crowdworkers who do not rely on crowdworking as a primary source of income (previously 56%). Additionally, 28% (previously 22%) state that crowdworking is definitely their main source of income.

With regard to the coverage of the platform market, we find that our coverage has now significantly increased. While previously only 21-26% of our respondents worked for the proposed crowdworking platforms, now we cover 37-42% of the platform market. Among the online crowdworking platforms, 25% of all respondents chose Guru, whereas, among the offline crowdworking platforms, 18 % opted for Lieferando and 7% for Foodora. If analysed by level of education, it is striking that among the crowdworkers without a degree, a large number indicated to be working for the above-mentioned platforms (Foodora 19%, Lieferando 48%, Guru 49%). Among all other educational levels, no particular pattern could be found with regard to a specific platform.

Polarization as to number of assignments

When asked about the number of assignments that were completed in the last half year, 53% of our respondents answered: “less than five” (previously 46%). Simultaneously, the share of respondents, who indicated to have completed more than 30 assignments increased from 18% to 29%. Furthermore, the number of crowdworkers who work less than 10 hours per week decreased from 46% to 41%, while the share of those working 30 hours or more as crowdworkers increased from 27% to 36%.

76% are free in scheduling their own work hours

Asking about the ability to schedule working hours independently, 76% of all crowdworkers specified that they are entirely free or rather free to schedule their working hours (as opposed to 60% in the previous report). The number of respondents who declared to not be free or less free decreased simultaneously from 23% to 16%.

4.4 Income of crowdworkers

This section analyses the income generated by crowdworking activities. As the overall household income is not being surveyed within our study, we cannot analyse the share of platform work in relation to the person's overall income, as studied by Pesole et al. (2018, pp. 51–52). Thus, below results might not be indicative for the living conditions of crowdworkers. However, they provide a first insight into the remuneration of crowdworkers across types of work, platforms and tasks, education and employment status.

4.4.1 Calculation method

As the survey algorithm does not allow for entering numbers, but selecting one out of up to 10 categorical answer options, all income-relevant variables had to be surveyed as intervals. Algebra with interval scaled variables require caution in calculus and in interpretation of the results. Table 12 presents the survey items that were used for the calculation of the various income variables together with their answer options' resulting intervals.

Table 12: Income and search-time related crowdworking items

Item	Question / Answer options with intervals
#2195	For how many weeks in the last six months have you been working on paid assignments through online platforms? • 5 weeks or less [1,5] • 6 - 10 weeks [6,10] • 11 - 15 weeks [11,15] • 16 - 20 weeks [16,20] • 21 - 26 weeks [21,26]
#2216	How many hours per week did you usually work for assignments through online platforms? • More than 40 hours]40,60] • 30 - 40 hours [30,40] • 20 - 30 hours [20,30[• 15 - 20 hours [15,20[• 10 - 15 hours [10,15[• 5 - 10 hours [5,10[• Less than 5 hours [1,5[
#2219	How long did you usually have to look for a task assignment on online platforms? • More than 60 minutes]1,2] • 45 - 60 minutes]0.75,1] • 30 - 45 minutes]0.5,0.75] • 15 - 30 minutes]15,30] • Up to 15 minutes [1,15] (* intervals denoted in hours)
#2220	What was your weekly gross salary for tasks assigned through online platforms? • More than 1000 €]1000,2000]

- 500 - 1000 €]500,1000]
- 200 - 500 €]200,500]
- 100 - 200 €]100,200]
- 50 - 100 €]50,100]
- 25 - 50 €]25,50]
- Less than 25 € [1,25]

#2222 How many crowdworking tasks have you completed per week over the last half year?

- More than 30]30,50]
- 26 - 30 [26,30]
- 21 - 25 [21,25]
- 16 - 20 [16-20]
- 11 - 15 [10-15]
- 5 - 10 [5-10]
- Less than 5 [1-4]

#2224 How long do you need to complete a crowdworking task that you received from a platform?

- One week or longer]40,80]
- Up to one week]10,40]
- Up to 10 hours]5,10]
- Up to 4 hours]1,4]
- Up to one hour]0.25,1]
- Up to 15 minutes]0.0833,0.25]
- Up to 5 minutes [0.0166,0.0833]

(* intervals denoted in hours)

It should be noted that all items (except no. 2195) required top-coding, as the upper interval was open. We imposed plausible upper limits to these intervals, usually 1.5 or 2 times the value of the interval's lower bound (see Table 12). When the lower bound was open, we low-coded with 1, as "zero" or negative values are implausible.

Based on these interval-scaled variables, we calculated the income variables using the rules of interval arithmetic, i.e.:

$$[X_l,X_u] \square [Y_l,Y_u] = [\min(X_l \square Y_l, X_l \square Y_u, X_u \square Y_l, X_u \square Y_u), \max(X_l \square Y_l, X_l \square Y_u, X_u \square Y_l, X_u \square Y_u)]$$

(with □ being one of the four basic arithmetic operations: addition (+), subtraction (-), multiplication (·) and division (÷)).

As none of our original intervals overlap zero or are of negative value, the calculation rules for multiplication and division can be simplified as follows:

Multiplication: $[X_l,X_u] * [Y_l,Y_u] = [\, X_l * Y_l \,,\, X_u * Y_u \,]$

Division: $[X_l,X_u] / [Y_l,Y_u] = [\, X_l / Y_u \,,\, X_u / Y_l \,]$

In empirical research, it is a pragmatic approach to apply normal arithmetic rules on the interval midpoint. While the effect on the arithmetic mean of such variables might be negligible, the

application of interval arithmetic leads to larger intervals and thus, to a higher standard deviations. This phenomenon is even more pronounced if the distribution of the variables are skewed, as it is usually the case with income data, or extremely distributed, as it is given for inhomogeneous mixed-distributions. Both applies for the income of the heterogeneous group of crowdworkers, which requires special care in the interpretation of the derived results.

We additionally calculated the following variables:

- *Average gross earnngs per crowdworked hour (HE):* the number of hours worked for the online-assigned tasks (v2216) is divided by the average weekly income generated by online assigned tasks (v2220).

$$\frac{\frac{v2220_u}{v2216_l} + \frac{v2220_l}{v2216_u}}{2}$$

- *Average Earnings per crowdworking task (EPT):* the weekly gross earnings generated with crowdworking (v2220) divided by the number of tasks which were completed on average per week during the previous six months (v2222).

$$\frac{\frac{v2220_l}{v2222_u} + \frac{v2220_u}{v2222_l}}{2}$$

- *Average search time for a crowdworking task (ST):* with a minimum search time of three minutes and maximum search time of two hours into consideration.

$$search\ time\ per\ task\ in\ minutes = (\frac{\frac{v2219_l}{v2222_u} + \frac{v2219_u}{v2222_l}}{2}) * 60$$

- *Share of work time on total time spent for crowdworking (TDshare):* task duration (v2224) divided by the sum of task duration + search time.

- *Average earnings per crowdorked hour – net of search time (HENST):* With our variables at hand, there are two ways of calculation. However since it is advisable to restrict the number of involved interval-scaled variables in order to avoid the artificial creation of extreme interval boundaries, we opted for the short way - by multiplying the hourly earnings with the share of the work time on total time for crowdworking:

$$HENST = HE * TDshare$$

- *Average gross annual income generated by crowdworking (not presented) (GAI):* Multiplying the number of weeks that were used for active crowdworking by the weekly

crowdworking earnings results in the estimated crowdworking income per six months. We double this value to represent the annual income.

4.4.2 Sample Size

As the income-relevant items were only directed to active crowdworkers, the maximum addressable respondents in our selected sample are: 12,675 (i.e. 3.9% of 325k respondents). However, as the survey on the income questions began roughly half a year after identification of Crowdworkers and the Civey-relevance algorithm assigns questions conditionally randomly to its users, it is far from sure that any crowdworking-related item is being surveyed (and replied to) by each identified active crowdowker. Additionally, the comparatively high share of “don’t know”-answers (of approx. 30%) on these variables reduce the number of relevant answers. Thus, the net sample sizes by item are far below the maximum and range from 2,489 – 1,795 observations per income-related item (v2195-v2224). Furthermore, the inclusion of various variables with missings at different observations in arithmetic operations strongly increases the number of missings in the results and hence decreases the set of meaningful results. Thus, the sample size of the calculated income variables ranges from 1,016 to 1,712. So far, only 7% of all identified, active crowdworkers responded to all income-related items with a meaningful (i.e. not a “don’t know”) answer, resulting in an analysis sample with only 862 observations.

Thus, the following results should be seen as preliminary and treated and interpreted with caution (sic!). Besides the low number of observations, the heterogeneity of the group of crowdworkers and their incomes together with its imprecise measurement through intervals adds to a high standard deviation of the presented results. Furthermore, the distribution of the income variables is, as usual, right-skewed, with an arithmetic mean exceeding the median by a lot. This phenomenon becomes even more pronounced as some of the calculated intervals yield extreme upper bounds. In the following section, we present the arithmetic mean, median, standard deviation, 25th and 75th percentile and the minimum and maximum for each variable.

4.4.3 Results

Crowdworkers’ median earning per hour is 30 €

Crowdworked tasks and hours vary greatly among crowdworkers and therefore, crowdworkers’ income varies accordingly. While 20% earn less than 25€ per week, 43% claim to have a weekly income of more than 1,000 € through

crowdworking. In between these extremes 38% state to earn between 25 and 1,000€ per week (Table 13). Translating the weekly earnings into an hourly income, we find that crowdworkers' median earnings per hour amount to 30€ (arithmetic mean: 59€). The lowest quarter earns less than 20€ per hour, while the highest quarter has an average hourly income that is higher than 60€ (see Table 15). If analyzed by task, the median income per task is 50€ (mean: 147€). Answers covered a range between 1€ and 500€. While the lowest quarter of all crowdworkers only earns up to 25€, the highest quarter earns more than 200€ per task.

Table 13: Weekly gross earnings

#2220	**How much income per week have you generated with paid work tasks allocated through online platforms or marketplaces?**	Active CW	Future CW	Past CW	Total CW
	More than 1000 €	43.4%			43.4%
	500-1000 €	17.3%			17.3%
	200-500 €	7.8%			7.8%
	100-200 €	8.4%			8.4%
	50-100 €	2.4%			2.4%
	25-50 €	2.7%			2.7%
	Less than 25 €	18.0%			18.0%
	Don´t know (*)	28.3%			28.3%
	Sample size: 2,731				

Source: own calculation
Note: (*) Percentage share of "don't know" answers based on the sample size; shares of other answer options based on sample without "don't know"s.

Completed tasks range from 1 to 6050 a week

The number of completed tasks per week varies accordingly. While the median is 7.5 tasks, the range goes from 3 to 40 tasks completed within a week (Table 15). The same holds for the average time needed to complete a task. While 26% need less than 15 minutes to complete a task, 20% need one to ten hours. 27% need more than one working day, thereof 18% even longer than a week for completing one single task (Table 14). In summary, this means that more than half of all crowdworkers need less than one hour to complete their task, which indicates a strong presence of microtaskers within our sample.

Table 14: Task duration

#2224	**How long do you need, on average, to complete one paid work task that is allocated through online platforms or marketplaces?**	Active CW	Future CW	Past CW	Total CW
	One week or longer	18.3%			18.3%
	Up to one week	9.0%			9.0%
	Up to 10 hours	11.3%			11.3%
	Up to 4 hours	9.3%			9.3%
	Up to 1 hour	16.5%			16.5%
	Up to 15 minutes	19.1%			19.1%
	Up to 5 minutes	16.6%			16.6%
	Don't know (*)	19.8%			19.8%
	Sample size: 2,788				

Source: own calculation
Note: (*) Percentage share of "don't know" answers based on the sample size; shares of other answer options based on sample without "don't know"s.

Table 15: Income, task duration and search time for crowdworking tasks

	avg. no. of tasks per week	**avg. task duration (in hours)**	**avg. gross hourly earnings**	**avg. earning per task**	**avg. search time per task (in minutes)**	**Share of crowdworking time on total time**	**avg. hourly earnings net of search time**
	v2222	**v2224**	**HE**	**EPT**	**STPT**	**TD-share**	**HENST**
N	862	862	862	862	862	862	862
Mean	**13.1**	**19.2**	**59.2**	**146.9**	**7.3**	**0.8**	**47.4**
St. Dev.	13.3	24.5	87.2	181.4	10.3	0.2	70.0
Min	3.0	0.1	1.0	1.0	0.2	0.1	0.6
25th percentile	3.0	0.6	20.0	25.0	1.1	0.7	11.8
Median	**7.5**	**2.5**	**30.0**	**50.0**	**2.6**	**0.9**	**29.3**
75th percentile	19.2	25.0	60.0	200.0	7.5	1.0	49.4
Max	40.0	60.0	500.0	500.0	30.0	1.0	474.7

Source: own calculation

To gain deeper insights into the remuneration of crowdworkers, we further analyzed our income data by taking into account crowdworkers' sociodemographic characteristics and additional items.

No gender pay gap with respect to median income

Our data shows that with respect to a median income of 30€, there is no difference among the sexes. However, the distribution of men's hourly earnings is more strongly right-skewed, as men's arithmetic mean with 62.5€ excels that of women with a mere 46€. This indicates that men earn higher incomes in the upper region of the income distribution. Pertaining to the average earnings per task, men earn on median 12.5€ more than women (50€ for a task performed by a man vs. 37.5€ for one performed by a woman). Additionally, men incur the higher per-task earnings in the upper region of the distribution. However, both genders engage, on average (mean and median), in almost the same number of tasks per week (Table 16).

Table 16: Income, task duration and search time by gender

Gender:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Women		12.5	15.3	46.1	114.9	9.1	0.8	39.7
	Median	3.0	2.5	30.0	37.5	2.6	0.9	28.5
Men	Mean	11.6	18.7	62.5	142.3	7.4	0.8	50.1
	Median	3.0	7.0	30.0	50.0	2.6	0.9	29.8

Source: own calculation

With regards to age, we find that young crowdworkers aged 15-29 earn more per hour than their middle-aged colleagues (29-65) (Table 17). However, if analysed per task, this pattern does not repeat itself. The differences are much smaller and the age group of 15-29 earns least per task, whereas the 40-49-year-olds earn the most per task. This might indicate to the fact that there are significantly more clickworkers and delivery workers among the

younger crowdworkers, as these tasks pay little and are quickly completed (median task duration: 2.5 hours). This does not mean, in turn, that younger crowdworkers work more hours.

On the contrary, both the young crowdworkers and the age group 65+ complete the least hours per week (averages of 15 and 16 hours, respectively, not presented here). This could be due to a bias on behalf of the delivery workers who assume that one task equals one shift. Further research is needed to shed light on this aspect. In the age group 30-39, the average working time per week amounts to 20 hours, while the 40-49 year-olds score the highest with 23 hours.

Table 17: Income, task duration and search time by age

Age:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
15-29	Mean	10.2	17.1	86.7	120.6	7.2	0.8	73.3
	Median	3.0	2.5	46.7	46.7	2.6	0.9	38.4
30-39	Mean	15.4	17.7	59.9	121.6	6.5	0.7	32.6
	Median	26.8	25.0	60.0	200.0	6.0	1.0	49.8
40-49	Mean	11.0	21.2	39.1	296.3	9.5	0.8	33.0
	Median	3.0	7.0	30.0	50.0	2.6	0.9	21.7
50-64	Mean	11.0	17.4	53.2	139.8	8.8	0.8	48.8
	Median	3.0	2.5	30.0	50.0	2.6	0.9	29.9
65+	Mean	11.7	17.8	76.3	138.5	5.2	0.9	62.6
	Median	7.5	7.0	30.0	9.1	2.0	0.9	29.8

Source: own calculation

Income and education not correlated

Counterintuitively, income and education are not correlated (Table 18). While crowdworkers who graduated with the university entrance qualification earn the most per task and per hour, the least is earned by graduates with 10 years of schooling. The average hourly income for crowdworkers who graduated after 9 years of schooling does not significantly deviate from the income of those who graduated with the university entrance qualification (57€ as opposed to 61€). However, the task duration and also remuneration per task differs between these two groups: crowdworkers who graduated with the university entrance qualification engage in tasks that take the longest (a median of 7 hours) compared to the other groups. As a consequence, they also appropriate the highest income per task with a median 50€ compared to 37.5€. However, the resulting median gross hourly income does not vary accordingly. The education premium becomes visible when taking the search time into account; the less educated have to accept longer search times (only 60% of total time is actually spent on the crowdworking, i.e. 40% is spent searching for a task). The higher educated only need to spend 10% on search and thus enjoy the highest earnings per hour when search time is included considered. A possible reason might be that complex tasks take longer and require a specific education and training level on the part of the crowdworker.

Table 18: Income, task duration and search time by education

Education:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
<= 9 years or no graduation	Mean	15.9	10.5	57.3	290.9	7.7	0.6	29.4
	Median	3.0	0.6	30.0	37.5	2.6	0.6	16.7
10 years	Mean	11.0	12.7	46.3	36.4	6.1	0.8	46.9
	Median	7.5	2.5	25.0	37.5	2.6	0.9	23.8
12-13 years	Mean	11.5	19.5	60.8	64.5	7.9	0.8	47.9
	Median	3.0	7.0	30.0	50.0	2.6	0.9	29.8

Source: own calculation

Self-employed earn more per hour than employees

When comparing full-time employees and self-employed crowdworkers, it is striking that those whom are self-employed earn significantly more per hour and also per task (Table 19). This could be due to the fact that some of the crowdworking professions that pay well are traditionally implemented by the self-employed in Germany and require a high degree of professionalization (e.g. craftsmen, designer, software engineers). The high average income per task (177€) can be explained by the higher complexity and therewith longer task duration. Completing a task takes an average of 23 hours for someone who is self-employed (7 hrs. median), while full-time employees need only 15 hours on average (2.5 hrs. median). This hypothesis is corroborated by the fact that those who claim to need special skills for their crowdworking job earn, on average, more than three times as much as those who state that they need generalized skills only (Table 20).

Craftsmen earn the most per hour

Table 19: Income, task duration and search time by employment status

Employment status:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Full time	Mean	12.7	14.5	56.6	124.8	420.0	0.7	53.3
	Median	7.5	2.5	30.0	42.1	2.6	0.8	29.8
Self-employed	Mean	11.0	23.3	68.4	177.2	8.8	0.9	54.4
	Median	3.0	7.0	42.9	100.0	2.4	1.0	39.3
Retired	Mean	12.1	14.8	56.2	90.3	6.0	0.7	44.9
	Median	7.5	2.5	20.0	29.8	2.6	0.9	16.6
Other: Part time, unemployed, student.	Mean	11.7	12.1	27.0	60.8	8.6	0.7	22.0
	Median	3.0	2.5	20.0	12.5	2.6	0.8	8.2

Source: own calculation

Table 20: Income, task duration and search time by required skills

Required skills:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Special skills	Mean	12.6	22.6	71.8	171.3	7.6	0.9	57.4
	Median	3.0	7.0	42.9	65.2	2.4	1.0	22.6
General skills	Mean	12.6	6.9	34.9	48.1	5.6	0.6	24.9
	Median	7.5	0.6	12.5	11.3	2.6	0.6	6.9

Source: own calculation

The analysis of different crowdworking activities finds that craftsmen receive the highest hourly wage (Table 21). They are followed by consultants, software programmers, designers and lastly, by writers and testers. The deviance is quite significant--consultants earn three times as much as writers and testers and craftsmen earn even 3.5 times more. When analysed by income per task, consultants receive, by far, the largest remuneration; their income per task is on average 204€, while writers only receive 69€. Writers also complete the least amount of tasks per week by far (14 compared to 26 completed by software programmers). Comparing the average hourly income for tasks which are implemented online vs offline (Table 22), we find that tasks that are implemented offline are better paid (63€ compared to 52€ online). This is in line with the finding that craftsmen receive the highest hourly wage, if compared to other professions.

Table 21: Income, task duration and search time by type of crowdworking task

Type of crowd-working task:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Crafting	Mean	11.7	16.6	93.4	149.2	6.1	0.8	58.7
	Median	3.0	7.0	46.7	66.7	2.6	1.0	41.8
Programming, Design	Mean	13.2	26.1	63.3	155.6	7.1	0.8	48.8
	Median	7.5	25.0	30.0	53.6	2.6	0.9	28.8
Consulting	Mean	12.6	25.1	81.8	203.9	9.2	0.9	68.6
	Median	3.0	7.0	42.9	115.4	2.6	0.9	41.8
Writing, Testing	Mean	6.9	13.7	26.8	69.3	8.6	0.7	24.4
	Median	3.0	2.5	14.0	12.5	2.6	0.8	23.6

Source: own calculation

Table 22: Income, task duration and search time by online/offline work

Online/ offline work	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Online	Mean	14.5	13.9	52.3	113.1	5.3	0.7	34.5
	Median	7.5	2.5	30.0	37.5	2.6	0.8	18.9
Equal	Mean	13.4	18.0	63.5	124.0	8.9	0.8	53.5
	Median	7.5	7.0	30.0	46.7	2.5	0.9	13.9
Offline	Mean	10.0	22.7	62.7	165.6	8.8	0.8	54.8
	Median	3.0	7.0	42.9	61.5	2.6	0.9	29.9

Source: own calculation

In addition, our data reveals that those who engage in crowdworking as their main job earn significantly more per task than those who do crowdworking on the side (Table 23). However, the average hourly income does not differ significantly. There is further research needed in order to analyse the differences between these different types of crowdworkers.

Table 23: Income, task duration and search time by scope of crowdworking

Scope of crowdworking:	Measure	avg. no. of tasks per week	avg. task duration (in hours)	avg. gross hourly earnings	avg. earning per task	avg. search time per task (in minutes)	Share of crowdworking time on total time	avg. hourly earnings net of search time
		v2222	v2224	HE	EPT	STPT	TD-share	HENST
Main job	Mean	17.8	31.0	53.3	214.6	8.6	0.8	35.4
	Median	7.5	25.0	30.0	100.0	2.6	1.0	29.9
On the side	Mean	6.8	9.8	46.7	84.1	7.4	0.7	34.5
	Median	3.0	2.5	25.0	22.5	2.6	0.8	9.8

Source: own calculation

4.5 Crowdworkers' motivation and satisfaction

Whereas in the last report, we mainly relied on the available literature to review crowdworkers' motivation and job satisfaction, this report will provide a deeper analysis with the use of our own data. As it can be assumed that motivations vary greatly across types of tasks (e.g. clickworker vs software developer) and differ also according to the working hours crowdworkers put in, we will further examine these relationships. Due to the fact that crowdworkers often engage in more than just one task, it is not entirely clear to which of these tasks they refer to when asked about their motivation, which makes the data difficult to interpret. For instance, a crowdworker could engage in design tasks to make a living and to acquire smaller software development jobs to learn new skills (cf. also Pesole et al., 2018, p. 43). As our question number 10 asks for the main reason to engage in crowdworking, we assume that the respondents prioritizes the different tasks and thus, chooses the motivation for the task that is considered most important.

Moreover, we review crowdworkers' satisfaction. Again, results need to be interpreted with caution, as the rating of individuals' satisfaction might not only be determined by their crowdworking situation, but also by other circumstances or events that happened before answering the question or their general job satisfaction. Wherever possible, we therefore rely on further available

qualitative studies for certain platform types or crowdworkers to validate and triangulate our findings.

4.5.1 Motivation

Money is not the rationale for crowdworking

With regard to the overall motivation, the picture is quite heterogeneous. While only 5% state that they do not have any other opportunity to work and 13% state that the remuneration is their main motive, flexibility is a category that is valued by 23% of all respondents (when flexibility with regards to location and time are considered together). Apart from the flexibility, other categories such as “trying out new ways of work” and “can be done on the side” were chosen frequently, i.e. the former by 12% and the latter by 13% of all respondents. The categories “easy access and short duration” scored 9%.

Table 24: Main reason for crowdworking

# 2251	**What is your main motivation for accepting paid work tasks allocated through online platforms or marketplaces?**	Active CW	Future CW	Past CW	Total CW
	Easy access and short duration	9.1%			9.1%
	Flexible working time	14.0%			14.0%
	Flexible working location	8.9%			8.9%
	Can be done on the side	12.9%			12.9%
	No other working opportunities	5.1%			5.1%
	Trying out new ways of work	11.6%			11.6%
	Good remuneration	13.4%			13.4%
	Another reason	24.9%			24.9%
	Don´t know	n/a			n/a
	Sample size 2,182				

Source: own calculation

Note: (*) Percentage share of “don’t know” answers based on the sample size; shares of other answer options based on sample without “don’t know”s.

While it is often assumed that crowdworkers are mainly driven by monetary remuneration (Blohm, Leimeister, & Zogaj, 2014, p. 60) (Durward, Blohm, & Leimeister, 2016, p. 282), our data shows that intrinsic factors play an important role as well.

Motives vary greatly among crowdworkers

If we look at crowdworkers’ motivation broken down by different categories such as age, gender, educational level and employment status we find again that rarely one motive stands

out. In the older age groups (40+), the motive “trying out new ways of work”, as well as the category “crowdworking can be done on the side”, are chosen frequently. However, for younger crowdworkers aged 15-29, the easy access to short-term assignment carries a lot of importance.

Crowdworkers who do not have other opportunities are most vulnerable

The category “I don’t have other working opportunities” deserves a closer look here, as these crowdworkers might be the most vulnerable ones in the platform economy. In the age group 30-39, 26% claim not to have any other choice than to engage in crowdworking. Moreover, it is striking that nine times as many women as men chose the answer option “I don’t have any other working opportunities” (9% of all women, compared to 1% of all men, who answered the question). With regard to employment status, it is striking that 24% of all unemployed and 29% of all part-time employees claim to not have any other choice than to engage in crowdworking, whereas persons with other employment statuses barely chose this answer (less than 10% in each category). Thus, our data suggests that out of the 5% who engage in crowdworking out of necessity, a large share is unemployed and also more likely to be female than male. As low-skilled crowdworkers will most likely end up as microworkers or delivery workers (see also section 4.2.), it seems plausible that these monotonous tasks are completed out of pure necessity. Longitudinal studies of clickworker online communities confirm that money is the most important motivator here (Codagnone, Abadie, & Biagi, 2016, p. 34).

Motivations differ according to type of task and education level

Hence, we hypothesize that motivations differ most drastically between the education level, the type of task and the living situation. As our data concerning the correlation between education level and motivation is not reliable due to the small sample size, there is a research gap that needs further exploration. A qualitative study on IT specialists and designers, of whom the large majority is highly educated, found that the primary motivation towards crowdworking is because it is fun; having an additional income comes second, followed by learning new skills (Al-Ani & Stumpp, 2015, p. 21). Especially in the IT industry, technologies and services change quickly, which requires continuous education. Professionals make use of crowdworking to familiarise themselves with the newest developments and to try out new applications (Al-Ani & Stumpp, 2015, p. 22). Another important motivation for designers is the access to new customers, brands and projects (Al-Ani & Stumpp, 2015, p. 21).

These findings are reflected by our data, which show that among the self-employed, 21% stated that they crowdwork because they want to try out this new form of labor. Similarly, among students,

19% engage in crowdworking due to this rationale. The flexibility is valued highly by all groups, except for those who are retired and unemployed. The finding by Pesole et al. suggests that those whom are self-employed choose crowdworking primarily for its flexibility, whereas employed people are motivated by monetary and intrinsic rewards cannot be corroborated by our study (Pesole et al., 2018, p. 45). Only 3% of full-time and 1% of part-time employees claimed that they are primarily motivated by payment.

4.5.2 Satisfaction

Overall, 55% of our respondents are either absolutely satisfied or rather satisfied with their crowdworking job. Less than a fifth is relatively unsatisfied or absolutely unsatisfied, while a quarter is undecided.

Table 25: Satisfaction of crowdworking tasks

# 2221	**How is your overall satisfaction with paid work tasks allocated through online platforms or marketplaces?**	Active CW	Future CW	Past CW	Total CW
	Absolutely satisfied	29.0%			29.0%
	Rather satisfied	26.4%			26.4%
	Undecided	25.9%			25.9%
	Relatively unsatisfied	2.7%			2.7%
	Absolutely unsatisfied	15.9%			15.9%
	Don´t know	n/a			n/a
	Sample size 2,833				

Source: own calculation
Note: (*) Percentage share of “don’t know” answers based on the sample size; shares of other answer options based on sample without “don’t know”s.

Perceived flexibility and satisfaction highly correlated

A common assumption with regard to crowdworking is that crowdworkers especially enjoy the flexibility the platform economy offers. This assumption is confirmed by our data; 86% of all crowdworkers who claim to be absolutely satisfied with their crowdworking job also stated that they are entirely free to schedule their work hours. Satisfaction and the freedom to determine working hours are highly correlated in our sample. This trend is only interrupted in the group of crowdworkers who asserted that they are relatively unsatisfied. In this group, 37% of respondents claim to be entirely free in scheduling working hours

while 20% state not to be free at all. A possible explanation for this polarization could be that crowdworkers whom engage in crowdworking because they cannot find another job might be unhappy about the flexibility, as they would prefer a job in the regular job market with fixed working hours. This brings us back to the section “motivation of crowdworkers”, in which we could identify quite a number of crowdworkers who do crowdworking because of the flexibility or the possibility to try out new forms of labor. While remuneration was not identified as the main motivator, our data shows that overall satisfaction with crowdworking is however correlated with income satisfaction.

Income plays a major role for crowdworkers’ satisfaction

More than half of the crowdworkers who are absolutely satisfied with crowdworking are also satisfied with their crowdworking income. Inversely, almost half of the crowdworkers who state that they are relatively unsatisfied are also not at all satisfied with their income. This means that even if crowdworkers are not mainly motivated by financial incentives, the remuneration needs to be considered appropriate in order for crowdworkers to be satisfied with their job.

Female and unemployed CWs are less satisfied

When examining crowdworkers’ age, no pattern with regard to their satisfaction can be determined. With regards to gender, it is however striking that men tend to be a lot more satisfied with their crowdworking job than women; while 68% of male crowdworkers claim to be absolutely satisfied, the same number of female crowdworkers claims to be absolutely unsatisfied. This can be explained by the fact that men earn more by crowdworking than women. If itemized by employment status, the unemployed are the least satisfied; 39% are either relatively or absolutely unsatisfied with their crowdworking job. All other employment groups score between only 10% and 21% in this category. Among students and retired people, the share of satisfied crowdworkers is the largest. This finding suggests that crowdworking is most enjoyable for those who are not necessarily totally dependent on crowdworking as their main source of income. However, our data does not confirm that part-time crowdworkers are generally more satisfied with crowdworking than full-time crowdworkers. On the contrary, 80% of those who engage in crowdworking as their main source of income are absolutely satisfied. The least satisfied group is the one who engages in crowdworking solely on the side. These might be crowdworkers who perform low-paying microtasks. Broken down by tasks, the occupational group that is by far most satisfied is designers, with 92% of whom claim to be absolutely satisfied. Software engineers, writers and consultants are also rather satisfied, while craftspeople and testers are the least satisfied.

Satisfaction depends on motives

We assume that the level of satisfaction might be better explained by whether or not crowdworking can fulfill individual expectations and needs. While IT specialists who see crowdworking as an opportunity to learn new skills might be satisfied, less-educated or unemployed crowdworkers who engage in micro-tasking out of necessity will be unsatisfied because it is hard to make a living in the field of clickwork, for example. Other groups, such as students and pensioners, might be satisfied with earning just a little extra income. Further research should examine the correlation between education and satisfaction in order to generate deeper insights. Due to a small sample size, our data does not deliver any reliable figures on this relationship. However, as depicted in section 4.2, we find that a large number of crowdworkers without a degree work on microtasking platforms, such as Guru, or work in delivery jobs, such as those provided by Lieferando and Foodora. This supports the argument that for some unskilled laborers, crowdworking is one of the few options available on an increasingly competitive labor market (according to our study, 18% of all active crowdworkers do not have a high-school degree). In addition, more research should be conducted on the group of unemployed crowdworkers who are the least satisfied.

Crowdworking market highly polarized

As of yet, the target group of low-skilled crowdworkers has not received sufficient attention by researchers. Qualitative studies tend to interview rather highly-skilled individuals who do not rely entirely on crowdworking (Eurofound, 2018, p. 34) (Al-Ani & Stumpp, 2015). An exception to this is a study conducted by Broughton et al. with 150 British crowdworkers. The authors found that one of the main determinants for the way crowdworking is experienced is whether a person is entirely dependent on the generated income or not (Broughton et al., 2018, p. 8). Many, who did not have another source of income, reported that they had difficulties paying their bills and that they enjoyed a smaller degree of flexibility, as they had to deal with fluctuations in working time and pay levels (Broughton et al., 2018, p. 27).

Reasons to quit reflect different motives for crowdworking

When inquired about the reason why respondents stopped crowdworking, a fifth stated that it was of because of the remuneration, 14% indicated that they had found another job and another 13% claimed that they quit because the work assignments were not interesting. Although 48% chose the answer option “other reason” (which shows that there is still a big research gap), we can infer from our findings that there is indeed a share of people for whom crowdworking is an interesting job, but that for some others, crowdworking is just a temporary phase in their career. The fact that 20% quit because of the remuneration furthermore

emphasizes that crowdworking is not a financially attractive form of employment for everyone.

5. Conclusion

The *Crowdworking Monitor No. 2* depicts results from the collection of data from July 2017 up to October 15, 2018, in which approx. 495,000 respondents have been surveyed. This is the largest sample size to date for a study of crowdworking in Germany. In comparison to the first volume of this study, as of September 2018, this report presents updates on the characteristics of crowdworkers and their tasks. We find that our results with respect to the magnitude of the crwodworking phenomenon are more conservative compared to other European studies. Crowdworking is largely a part-time phenomenon-- only up to 1.6% of the German resident population claim that they rely on crowdworking as their main source of income and a large part work less than 10 hours a week as crowdworkers. In line with available studies, our data suggests that the typical crowdworker is young, male and more prone to live in urban areas. However, our study deviates from available research by showing that crowdworkers are on average not better educated than the general population and that they are more likely to be single.

Furthermore, we presented new data with regards to crowdworkers' income and motivation for the first time. Even as our first results concerning income of crowdworkers need to be treated with caution, our data indicates that crowdworkers' earnings vary considerably, just as the number of tasks which are completed also vary. While the better-educated and self-employed earn the most, lower incomes are more represented among women, microworkers and those who only need generalised skills to complete their tasks. When it comes to crowdworkers' motives, it was found that only 5% engage in crowdworking out of necessity. In contrast to other studies on crowdworking, we derive from our data that money is not the main rationale for crowdworking-- crowdworkers' motives vary according to their living situation, educational level and type of task. We assume that the level of satisfaction might be best explained by whether or not crowdworking can fulfill individual expectations and needs. While for designers and craftsmen crowdworking might be a lucrative option that offers a lot of flexibility, for others, crowdworking is just a temporary and often unsatisfactory phase in their careers (this is represented in our sample by those who claim to be crowdworking out of necessity, out of which a large share is unemployed). The large variation in income and the extent of crowdworking points

furthermore to the different needs of crowdworkers with regard to policy-making. To this end, more research needs to be conducted on specific sub-groups of crowdworkers.

As this research project is still running, the upcoming third crowdworking monitor will further analyse the continuously collected interview data to generate more insights with regards to specific types of crowdworkers. Furthermore we intend to put a special emphasis on crowdworkers' living arrangements and the extent of their crowdworking activities. In addition, we will analyse the developments in the crowdworking segment over time.

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