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Acronyms

PWs Platform workers

RWs Reservation wages

Introduction 2017 were for the first time worldwide more people online than offline (Graham, 2019, p. 1). Between 2004 and 2015 the amount of data flows between countries all over the globe has increased by a factor of 45 (McKinsey & Company, 2019, p. 4). With these profound changes in societies, "scholars theorize '...' [about a] shift towards a third phase of capitalism, beyond mercantilism and industrialism, based in immaterial, digital, and cognitive labour" (Mahmoudi and Levenda, 2016, p. 100). Between those economic shifts we find surprising parallels. For example share both the promise of increasing welfare benefits for societies, both types of capitalism tend to repress previous markets¹, and both had/still have to compensate somehow for the social drawbacks which came/come along with them. This assignment wants to investigate benefits and hazards of the digitalisation of labour markets by investigating the current empirical and regulatory state of labour performed within the so called "platform economy" (or "sharing economy"). Due to extension restrictions, I will focus on mainly one aspect of each side. On the hazard side, based on the current lack of labour status regulations for platform workers, I want to describe potential regulatory frameworks which might help overcome this issue². On the benefit side, I want to focus on the platform's potential labour market inclusion potentials of disadvantaged regions in Europe³. The growth (see e.g. Paypal Inc. (2017, p. 7)) of the "platform economy" impacts both, employees and employers⁴. The European Commission (2019) finds that digitalisation changes labour market structures as "standard employment is increasingly supplemented or substituted by temporary work, from continuous/permanent employment towards project-based (casual), from single employer towards multiple concurrent clients". This called "openness paradigm" (Ettlinger, 2014, p. 100) can be seen as a "new tier in the division of labour" which entails "unregulated freelance work"⁵. This phenomenon can also be seen as the ongoing progress of the "taylorisation" of capitalist labour markets (Richardson, 2018, p. 246). With the openness of labour performed not only in the dyad of one employer and her/his employees, the declaration of the labour status becomes blurry: are platform workers em-

¹Not the issue here. For an example of how "AirBnB" impacted regional property markets, see Wachsmuth and Weisler (2018), and how "Uber" impacted the transportation market in Chicago, see Richardson (2019).

²Other hazards are the "fragmentation" of occupational trajectories, the lack of unionisation among platform workers and lacking regulations concerning working conditions (Garben, 2017).

³Other benefits are e.g. a higher degree of flexibility or higher levels of autonomy for employees with regards to their employers.

⁴The rise of online platforms now allows employers to profit from a much bigger (online) "skills pool" than their local labour market supplies (Baethge et al., 2019).

⁵Another theoretical framework which tries to explain the digital "undermining" of labour regulations is the concept of "unbundling of jobs". This task based approach suggests that digital labour is - in contrast to regular labour - tied to one specific "microtask" and thus definitions of jobs erode as they usually are a "bundle" of tasks which define them (see Pesole et al. (2018, p. 34)).

employees of the platform or are they freelancers and the platform just connects them to their clients (e.g. restaurants to couriers or companies to software developers)? Social security standards (such as pension entitlements, health and unemployment insurance and working condition regulations) are bonded to specific labour statuses. Therefore, this question is in the center of an ongoing discourse between the platform companies, legislators, politicians and scholars⁶.

On the other hand digital workers have higher autonomy and flexibility in comparison to regular work, they are "at least in theory, '...' not obliged to accept any offers of work made by their employer/principal/client" (De Stefano and Aloisi, 2018, p. 32f). The so called "democratisation of work" is another potential benefit (Baethge et al., 2019, p. 21). It refers to the inclusive potential of the digital economy for marginalized groups. Working independent of work-locations on the computer might enable people from disadvantaged regions, care givers or people with disabilities to participate in the labour market nevertheless (see Richardson (2018)).

Definitions As the field of research is relatively new, there are several ways of defining and classifying the digital economy (see for example Schmidt (2017), De Stefano and Aloisi (2018), and Baethge et al. (2019), or for an elaborated definition Schwarz (2017, p. 376ff)). Digital labour platforms can be defined as "digital networks that coordinate labour service transactions in an algorithmic way" (Pesole et al., 2018, p. 7). An online platform serves as a "middleman" between a digital worker and her/his clients, *the labour arrangement is triangular* instead of dual in regular work arrangements (*ibid.*). Schmidt (2017, p. 7) differentiates the digital economy by its sectors: a) services: Platforms that provide non-material goods and services. He separates those platforms whose worker operate *location-based* (such as "Lieferando", "Uber" or "Airbnb"), usually called "Gigworkers"⁷, and those workers, who operate digitally, or "*web-based*" (such as "Upwork", "Guru", "Amazon MTurk"), usually called "Cloud- or Crowdworkers"⁸; b) goods: Platforms that trade or rent goods, tangible ones like products on "Amazon" or "Ebay" and intangible goods like music ("Spotify") or

⁶This issue is also frequently present in the media, see for example dpa (2019), ZDF (2019), and Tagesspiegel (2019).

⁷The word gig refers to a musician, switching from one "concert" to another (Rouse, 2016).

⁸"Cloudworkers" sometimes (but not always) are workers which work "in the cloud", usually doing micro-tasks/data entry tasks in a provided online framework (e.g. Amazon's MTurk). "Crowdwork" refers to work which is similar to "Cloudwork" in terms of tasks, but the digital environment has not to be within a server based cloud.

videos ("Netflix"); c) others: platforms, which provide marketplaces for e.g. educational purposes (such as "Udemy") or financial purposes (such as "Crowdfunding"). This assignment focusses on digital platforms in the web- and local-based service sector and its Platform workers (PWs).

Prevalence and demography of platform workers The biggest location-based platforms are "Uber" (about 7 million registered drivers worldwide) and "AirBnB" (about 3 million registered workers) (Serfling, 2018, p. 12). The biggest food-delivery platform "Takeaway" (where also "Lieferando" is a part of) states to have about 4200 couriers across Europe (Takeaway, 2018, p. 10). The three biggest web-based platforms are "Freelancer" (20 million PWs), "Crowdfunder" (5 million PWs) and "Guru" (1.5 million PWs). Statements about the prevalence of platform workers among the working population are difficult because of scarce data⁹. On an European level the "Collaborative Economy and Employment" survey ("COLLEEM") conducted by the European Commission in 2017 tries to fill this gap¹⁰. They found that from the European target population, about 6% can be defined as platform workers¹¹. About 2% can be described as "main platform workers" whose main occupation is for an online platform. The United Kingdom "has the highest incidence of PWs [6.7%] [and] [b]y contrast, Finland [and] Sweden '...' show very low values [resp. 2.9% and 3.5%]" (Pesole et al., 2018, p. 3). Germany has a prevalence of 6.6%¹² (ibid., p. 18). Concerning socio-demographic characteristics of platform workers in Europe, Pesole et al. (ibid., p. 30) find that "the typical European platform worker is a [34] '...' year old male [26% are women, own remark] '...' [H]e is likely to have a family and kids, to be educated to degree level and to have fewer years of labour market experience than [no platform] '...' workers". Concerning PW's income, Pesole et al. (ibid., p. 51) find two categories: i) platform work as a secondary, flexible source of income (about 70% of all PWs) and ii) a mayor source

⁹Surveys conducted either from companies (Judith Wallenstein and Bailey, 2019; Paypal Inc., 2017; Ozimek, 2019; Payoneer, 2018) or trade unions (Baethge et al., 2019) usually only contain (specific) platform workers and don't infer to the working population.

¹⁰It aims to be representative for all internet users between 16 and 74 years of age in 14 European countries (Pesole et al., 2018, p. 3).

¹¹Platform workers are defined as individuals who a) spend at least 10 hours a week with those tasks or b) earn at least 25% of their monthly income with those tasks.

¹²This finding differs from the second study I found from the German Ministry of Labour conducted in 2018. They found a proportion of 4.8% of the *voting-eligible German population* (Serfling, 2018, p. 17). However, this difference could be explained by looking at the different target populations of those two surveys. The COLLEEM survey focusses on internet users whereas the "German Crowdfunding Monitor" focusses on the voting-eligible population. Thus the proportion should shrink with an increasing denominator, which is the case here.

of income which is associated with higher incomes in comparison to no-platform workers (about 30%). The provided tasks are very heterogeneous. Across Europe, web-based- is slightly more prevalent than local-based platform work (Pesole et al., 2018, p. 35). Most prevalent are low-skilled services such as (web-based) data entry tasks (*which account for 43% of the total services provided*), and high-skill professional services such as (web-based) software development (which account for about 30%) (ibid., p. 37). Countries do not differ crucially between tasks, but "Romania is amongst the top countries for the provision of non-professionals services [and] [t]he Netherlands mostly provides services that require high digital skills such as software and interactive [sic!].

Different regulations within Europe and policy implications Due to the triangular arrangements and heterogeneous practices of the platform economy (see above), Pesole et al. (ibid., p. 52) find, that "the status of platform workers is probably the most complex policy issue at stake". Currently, EU member states have not imposed any clear regulatory frameworks on digital platforms (De Stefano and Aloisi, 2018, p. 27). De Stefano and Aloisi (ibid.) assume, that online platforms are "mercurial in nature '...' [and that] a hefty intervention may provoke its premature asphyxiation". An European Parliament resolution finds, that "certain parts of the collaborative economy are covered by regulation at local and national level" (European Parliament, 2017). Eurofound suggests that, "[p]latform-based working templates can be labelled under the umbrella definition of *app-driven casual arrangements* [own emphasis], a subgroup of non-standard forms of work, rather than under the self-employment category" (after De Stefano and Aloisi (2018, p. 32)). Also courts find, that "platform-mediated arrangements sit uneasily with self-employed worker status" (ibid., p. 46) as the platform's "terms of service" impose PWs "to accomplish the job personally, either by forbidding subcontracting or with the assistance of software" (ibid.). As European authorities see platform work closer to the casual employment status as to the self-employed status, I want to present in the following regulations of casual work within different member states as potential possibilities to expand the labour status of platform workers (see De Stefano and Aloisi (ibid., p. 46)).

De Stefano and Aloisi (ibid., p. 33) identify very different regulations for casual work, i.e. platform work, in Europe's member states. They see the Netherlands and the United Kingdom at two poles of the spectrum. Dutch casual workers have a minimum-wage guaranty and, more important, after three months they have guaranteed minimum working hours based

on the last quarter's average working hours including social security levies for employers. Scholars assess this approach as successful (De Stefano and Aloisi, 2018, p. 33). On the other side, casual workers in the United Kingdom can fall under a "zero-hours contract", where they are not "entitled to any pay if the employer cannot provide them with work." (*ibid.*, p. 33). France (and Italy until 2017) has a voucher-based approach to regulate and monitor casual work. The government implemented a voucher system where employers had to pay their workers indirectly with governmental vouchers. This led to a quasi-minimum wage of 7,50 € and social security levies. However, employers are not obliged to pay for periods where they can not provide work. Belgium has a legal framework for triangular labour relationships. Mainly built to regulate the relationships between temporary-work-agencies, their workers and clients, this framework also covers a minimum wage and a obligation to change the contract after three months into a permanent one. German casual worker regulations (for "mini-jobbers") contain social security payments for employers. The employer has to specify the number of working hours and "[i]f not agreed otherwise, at least ten working hours per week or three hours per shift must be paid, regardless the number of hours worked" (*ibid.*, p. 34). Those frameworks could serve either as blueprints for new regulations or as expansions to include PWs into the social security system.

As local-based tasks are connected to a specific region, policy makers have in general more power to implement labour relevant policies¹³ (Schmidt, 2017, p. 19). In this respect, "Take-away" in Germany ("Lieferando") changed their PWs labour status - presumably preventively - from self-employed to regular employees (Takeaway, 2018, p. 7). But although web-based work is more prevalent than local-based work (see previous paragraph), "[i]t can be said that online crowdsourcing [i.e. web-based platform work] is the most elusive segment of [sic!] collaborative economy '...' [and] [b]eing perhaps the most genuinely unprecedented segment of this phenomenon, it has not been captured by the legislator yet" (De Stefano and Aloisi, 2018, p. 38). There are only some registration obligations for web-based PWs in Spain, the Netherlands, the United Kingdom and France. Other countries do not require any registration of this type of work (*ibid.*).

A data driven approach to "digital geographies" As the previous section focussed on the hazards of platform labour and how regulatory frameworks are situated, this ex-

¹³For example by prohibiting commercial hosting of private rooms for tourists within the "AirBnB" platform in Berlin and New York (Schmidt, 2017, p. 19).

ploratory approach wants to investigate one potential benefit. I want to investigate, if the (web-based) platform economy provides labour access and higher incomes to European regions with low levels of economic development. Concerning the current state of empirical data on online platforms, scholars find that "relatively few empirical examinations of contemporary digital geographies" are available (Richardson, 2018, p. 246). Also political advisers report: "[a] crucial issue in designing the policy response to the emergence of digital labour platforms is the lack of reliable evidence." (Pesole et al., 2018, p. 3). Therefore, I want to present a *data driven methodological approach* to investigate Reservation wages (RWs) of web-based PWs across Europe. The web-based labour platform "Guru.com" provides low level geographical information of its PWs, their digital skills as well as their reservation wages¹⁴. Due to space restrictions of this assignment, I just want to show one example how those publicly available data can serve as a fruitful enrichment of questionnaire based methods¹⁵. To ensure comparability, I only focus on the "low-skill" task "data entries"¹⁶. This is due to two reasons. First, those tasks require very few skills and therefore have a higher inclusive potential for lower-educated individuals. Moreover, as found above, the majority of web-based platform work consists of those types of task.

Figure 1 shows RWs¹⁷ across Europe (colours) as well as the number of cases which provide data entry tasks on "Guru.com". First of all, the majority of data entry workers are not located in Europe. India has by far the most data entry workers with 129.984 cases in the dataset, followed by the United States with 60.647 PWs. Besides the USA, Canada (8th place) and the United Kingdom (9th place) are the only western, developed countries in the top ten. In line with the COLEEM survey, I find the highest incidence of low-skill PWs in the United Kingdom (n=2012), followed by Romania (n=405), Serbia (n=309) and Hungary (n=157). At first glance, PWs reservation wages in Europe are divided. Former Soviet satellite countries have almost all a reservation wage of \$8.

To answer the question, if web-based platforms have an inclusive potential to spatial disadvantaged regions, this little data driven investigation can affirm this. Although the reservation

¹⁴Reservation wages are provided by the information "Freelancer starts working at \$ X".

¹⁵To extract and process the data into a statistical dataset, I used the programming language "Python" and the libraries "Beautifulsoup", "Pandas" and "Matplotlib".

¹⁶Although, "Web-Development" and "Programming" are the most common skills on "Guru.com", the third largest prevalence of skills are "data entry" tasks. My dataset consists of 239.893 PWs.

¹⁷RWs are upwards biased, as I only calculate with RWs unequal to zero. The percentage of PWs with a RW of zero would also might have been a interesting approach to investigate country differences. I found, for example, that wealthier countries with higher RWs have a lower percentage of PWs with a RW of zero. The correlation coefficient was $\rho = -0.03$.

wages in East Europe are smaller than West Europe, the potential earnings of \$8 per hour for e.g. *low-skilled* Romanian, Serbian and Hungarian PWs are much higher than their countries median gross hourly earnings of respective \$2, \$3 and \$4 (Eurostat, 2016). Thus, it is not surprising, that the highest incidence of East European PWs on "Guru.com" falls together with its poorest regions.

Concerning the hazards of an unclear labour status, national and European legislatures seem to have a "'wait-and-see' attitude" (De Stefano and Aloisi, 2018, p. 26). This might be due to the "embryonic phase" of this sector (*ibid.*). The instrument of lawsuits, from e.g. national

trade unions, only improves conditions of very particular PWs (De Stefano and Aloisi, 2018, p. 32). Until today, "[p]aradoxically, a courier performing the same activity can be classified as a quasi-subordinate worker in Italy, as a self-employed worker in France, as an employee in Germany, as a "zero-hours" contract worker in the UK or as an intermittent worker in Belgium. Definitely, a strong showing of fragmentation and weakness" (*ibid.*, p. 53). This shows, that the lack of regulations "needs to be addressed by European authorities in order to improve the situation of '...' [platform] workers" (*ibid.*, p. 33). And an often transnational relationship between platforms, platform workers and their clients "represent[s] a clear case for adapting and expanding the EU acquis in the field of '...' monitor[ing] such new forms of employment" (Pesole et al., 2018, p. 56). This assignment contributes to the current situation by showing several existing regulatory frameworks which might fit with the status of PWs across Europe. To put it in a nutshell, the findings suggest that the platform economy has some sound benefits when it comes to the inclusive potentials for workers in disadvantaged regions. However, to ensure that PWs do not only profit temporarily, the EU has to expand (or rearrange) their labour status frameworks to ensure that (hard gained) welfare-state benefits such as pension entitlements, unemployment- and health insurance reach out to them as well.

Concerning future research in this field, I want to make two suggestions. First, generally, the current shift towards a "[c]ognitive capitalism" (Mahmoudi and Levenda, 2016, p. 100) includes the chance for scholars to investigate the implementation of labour rights in a changing economy. This situation was faced by societies the last time in the first half of the 20th century with the emergence of "fordism" and "taylorism". Second, specifically, I want to emphasize that the literature I found (whether in academic journals or provided by the European Union) has a focus on Western Europe¹⁸. A broader view might be especially important as the platform economy may provide developmental potentials for East European regions - like it does for India or Pakistan.

¹⁸For example are from the 14 surveyed countries in the COLEEM survey only about 1/3 located in East Europe. This is not representative as 50% of the current EU member states are located in the former Soviet Union.

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