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Platform workers centre stage! Taking stock of current debates and approaches for improving the conditions of platform work in Europe

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Platform workers centre stage!

Taking stock of current debates and approaches for
improving the conditions of platform work in Europe

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Dominik Klaus and Thomas Gegenhuber



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Executive summary

The majority of academic literature and public debate on platform work is concerned with the question how platforms can create business value. However, platform workers, activists, unions, regulatory bodies, media outlets and scholars increasingly gain attention for debating the consequences of platform work for workers and society. Thus, we believe it is time to take stock of the current debates of platform work, analyse issues and on-going controversies and synthesize knowledge on approaches by actors on different levels for improving conditions of platform workers in Europe.

We start with discussing current terms related to platform-mediated work, including crowdwork, gig work and platform work. We conclude that their semantics remain limited to specific aspects and adopt the term *platform work*, i.e. work mediated via a web-based platform in the Internet. We further distinguish into remote and location-based platform work. In remote platform work, services can be fulfilled at any place in the world and are delivered digitally to the clients (such as Amazon Mechanical Turk or Upwork). In location-based platform work, platform workers deliver their services physically and are bound to a specific location (e.g., Uber and Foodora operating in specific cities). By this differentiation, we aim to highlight the importance to analytically consider the spatial dimension of different forms of platform work, as it has important implications for strategies aiming at improving its conditions.

Next, we assess the relevance and diffusion of platform work with a focus on European countries. Reliable numbers on platform work are scarce, mainly due to a broad heterogeneity of sampling strategies, data sources and definitions throughout the reports. Available figures suggest that platform work is still a marginal phenomenon in labour markets. Most recently, Pesole and colleagues show in their COLLEEM survey, that about 2 % of the average adult population in 14 EU member states work at least 20 hours/week and generate more than the half of their monthly income via platform work. Yet, recent figures also indicate that platform work is a growing phenomenon. Due to several arbitrage mechanisms, we contend remote platform work to primarily grow on Asian and African labour markets, which will probably affect single industries in Europe (e.g., creative industries). A growth in location-based platform work will probably lead to a growth in local labour markets throughout the globe, including those in Europe.

Concerning the motivations and working conditions of platform workers, we find that motivation structures depend on the level of economic dependence (e.g. doing the work for supplementary income or the work

is needed to make a living) as well as on the type of work (e.g. micro-task vs. innovation platforms calling for creative expertise). In general, workers enjoy the flexibility and autonomy of platform work, intrinsic and task-related motivations usually exceed extrinsic work motivations. This resonates with findings that the economic relevance of platform work remains low for the majority of workers, as many only generate a supplementary income for a limited period. We argue that the tendency towards low economic dependency and intrinsic/task-based motivation structures should not imply that there is no need for regulation. In fact, these patterns underline that platforms' business models aim to absorb excess/idle capacities on labour markets to subsequently exploit them in unregulated environments. This leads to new forms of conflict and challenges, which underline the necessity for improving work conditions in platform work – especially for those who depend on it to make a living.

Next, we identify several approaches by which actors at different levels aim to improve conditions of platform work. These include grassroots initiatives, led by workers or grassroots unions, as well as initiatives, led and/or supported by established unions. While grassroots initiatives aim at instantly improving working conditions on a particular platform or region, union led/-supported initiatives focus on the institutional level to implement improvements in working conditions in a more structural fashion. At the current stage, these initiatives are mostly successful in problematizing platform workers' situations and making issues understandable, creating workarounds and making improvements within the existing platform infrastructures. Moreover, they call regulators to actions to set the rules of the game for establishing more balanced work regimes on work platforms.

Although some platforms experiment with new governance forms (e.g., platform cooperatives), creating decent working conditions in the long-term across many platforms ultimately require regulations. Debates on the regulation of platform work are mainly concerned with the issue of worker (mis)classification. Platform worker (mis)classification as self-employed comes with several adverse implications for workers and society, including limited access to social security systems, exposure to antitrust laws, insurance and liability issues in case of accidents and loss of tax revenues from wages for governments. There are several suggestions to integrate the category of platform workers into legal institutional frameworks, including the creation of a new worker classification in labour law systems or (as known from subcontracting) or to frame combinations of platforms and clients as employing entities. Closely related to the classification issue, other current regulation themes concern minimum wages as well as approaches to make workers more independent

from single platforms, e.g., by enabling workers to transfer their reputation to other platforms, thus increasing their bargaining power and break up the monopoly of platforms. In summary, regulation debates concern the very nature of work relationships established by platforms as well as the access of fundamental labour rights for platform workers in these relationships. On a more general level, they also point to the responsibilities of platforms within a society.

Introduction

In today's world of work, platforms have become central entities in facilitating new forms of work organization (Hinings/Gegenhuber/Greenwood 2018; Kenney/Zysman 2016; Srnicek 2017). Labels such as Amazon Mechanical Turk or Upwork are well-known in the broader public by now; in every major town Uber/Lyft drivers or the colourful cubes on the backs of food couriers are integral part of the urban landscape. So far, management literature dominates the topic with a focus on how platforms create value or on corporation's strategies within a platform economy (Parker/van Alstyne/Choudary 2016; van Alstyne/Parker/Choudary 2016). However, workers, unions, media and governments increasingly debate the consequences of platform work for workers and society and question the sustainability and appropriateness of this new form of organizing.

The corporations or start-ups typically try to ignore or avoid such debates.¹ Indeed, many work platforms present themselves either as neutral mediators of labour, matching clients with freelance workers, or as vanguards of the new digital economy championing new forms of flexible and autonomous work. In either way, many platforms remain reluctant to embrace, if not, actively lobby against, any form of work regulation.

Extant research, however, shows that the balances of power between clients, platforms and platform workers are substantially imbalanced and that platform workers often face bad working conditions (Berg et al. 2018; Bormann/Pongratz 2018; Ellmer 2015; Herr 2018a; Irani/Silberman 2013; Murillo/Buckland/Val 2017). As platforms actively organize markets (Kirchner/Schüßler 2019) they exert a considerable amount of control over work relationships. Given this active role of platforms in shaping work relationships, claims raise to classify platforms as employers and platform workers as employees (Cherry 2009; De Stefano 2016; Prassl/Risak 2016). At the same time, these rather academic discussions are accompanied by an increasing number of actions and protests against platforms, organized by platform workers and unions, baring whiteness of the need to rebalance power on work platforms (Al-Ani/Stumpp 2015; Johnston/Land-Kazlauskas 2018; Vandaele 2018).

These on-going controversies indicate a general need to synthesize existing knowledge about ways how platform workers, unions and regulators aim to improve the conditions in different forms of platform work. Although recent studies suggest that platform work represents an only

1 A notable exception is the on-going conversation between German labour unions with selected Germany-based platforms.

marginal phenomenon on labour markets, it is certainly challenging established labour market institutions (Benner 2015; Kilhoffer/Lenaerts/Beblavý 2017; Murillo/Buckland/Val 2017; Srnicek 2017) and may serve as a blueprint for redesigning work organization in other industries and domains as well. We hence contend it as important to take stock of and analyse on-going controversies in platform work as well as approaches taken by platform workers and unions to assess how central issues in platform work can be mitigated or balanced. With our endeavour, we aim to advance and synthesize current knowledge about platform work and provide a foundation for activists, platforms and regulators for shaping platform-based labour markets towards a more balanced and sustainable future.

Our working paper is structured as follows. In the first chapter, we review different terms and definitions that became associated with platform-related work and propose the term *platform work* (which we further differentiate between location-based and remote platform work). Having clarified and localized our phenomenon of interest, we assess the relevance and diffusion of platform work with a focus on Europe. Next, we gather current studies presenting findings on motivations, aspirations and working conditions of platform workers. We then outline some existing initiatives that aim at improving the conditions for platform workers in Europe. We then refer to some current debates and themes concerned with the regulation of platform work. We close with an overall conclusion of the findings of our literature study and provide an outlook for future research.

Definition and typologies of platform work

The focus of this study is on *platforms connecting clients with workers that provide different kinds of services to them*. This includes platforms where services are delivered digitally (e.g. Amazon Mechanical Turk or Upwork) and where services are delivered physically (e.g. Uber or TaskRabbit).

Regarding the second type, it is important to differentiate platforms according to the commodities they trade. At a first glance, both Airbnb and Uber would fall into this category because they include a service that is delivered physically in the context of a platform-mediated relationship. Airbnb's business model is focussed on short-term 'renting' by matching clients with a market of idle resources, i.e. access to apartments which someone owns/rents and typically lives in. The host's service to the guests has a supplementary character. By contrast, Uber's business model is focussed on transport services. As a result, the mediation of work to clients is central. In contrast to typologies where renting platforms are included in platform work (e.g., Schmidt 2016), we exclusively focus on platforms where the mediation of work in the form of physical services is centre stage².

Within the academic literature, as well as in the public debate, a number of terms emerged to grasp and depict the nature of platform work. Each of it highlights a particular aspect of platform-mediated work. In the following, we discuss several terms and subsequently develop a coherent vocabulary for the present paper.

Crowdwork

The term *crowdwork* is especially popular in German-speaking contexts and occurs semantically close to the principle of crowdsourcing which denotes the outsourcing of tasks to online crowds via platforms (Howe 2006). While many articles and projects integrate the term in their headlines and titles, Pongratz (2018) argues that crowdwork is not suitable to universally grasp the broad spectrum of platform work. The term 'crowd' would suggest an anonymous and exchangeable mass of people working on simple tasks (Brabham 2012; Wexler 2011). However, many plat-

² Certainly there is room of debate for the consequences of platforms such as Airbnb negatively impacting local rental markets. Regulators are increasingly aware of this issue and seek to regulate these platforms (see e.g., Murillo/Buckland/Val 2017).

forms require workers to develop and present their individual reputation, which can be a critical success driver for accessing new jobs (e.g., on Upwork). Given the importance of individual talents and characteristics, it remains questionable whether crowdwork covers the broad variety of jobs offered on platforms. According to Pongratz (2018), the term crowdwork would best fit to microtask platforms, where the original meaning of outsourcing tasks to anonymous masses of undifferentiated people online is still present. Microtask platforms, however, only account for one-tenth of all jobs distributed by the five biggest online labour platforms (Kässi/Lehdonvirta 2018).

Gig work

The term *gig work* is mostly present in Anglo-Saxon debates and focuses on the piecemeal payment (i.e. getting paid for a 'gig') as a specific output unit, denoting a defining feature of most jobs available on platforms. Piecemeal payment concerns platforms where services are delivered digitally and physically. Gig work or the gig economy are considered as a subset of non-standard employment relationships, especially fragmented, casual and precarious work relationships (Wood/Lehdonvirta/Graham 2018). Stewart/Stanford (2017) identify several features characterising gig work, i.e., irregular work schedules, fluctuations in demand for the services, the majority of workers providing some or all of the equipment used directly in the work, often a compensation on a piecework basis and the organisation of work processes around some form of digital mediation (p. 2). It is especially "... the technology utilised to coordinate, manage and compensate the work ..." (p. 3) that is new, rather than the other core qualitative characteristics we are already familiar with in other forms of non-standard employment. The term gig work is often limited to platform work where services are delivered physically in a local setting (see e.g., Schmidt 2016). However, this payment scheme is also present in forms of platform work conducted online.

Graham et al. (2017) merge the technological underpinning of platform-mediated work and the normative notion of gig work in their term *gig work platforms*:

"By online gig work platforms, we refer to websites which facilitate contingent project-based work by connecting clients and workers. Online gig work is both transacted and delivered via digital platforms. This is made possible by the product of such labour being digital information, which can thus circulate through the Internet. This distinguishes it from other forms of non-online gig work where the product or service must be provided locally" (Graham et al. 2017, p. 2).

Platform work

The terms *platform work* or *platform-based work* focus on the distinct type of work organisation where labour becomes organised and mediated through internet-based platforms. Together with the term *platform economy*, these terms are considered the most neutral to discuss the topic (Forde et al. 2017).

The European Agency for *Safety and Health at Work* holds a rather broad definition, which reflects the diversity of activities that fall under the umbrella term of platform economy or platform(-based) work. ‘Online (labour) platform work’ includes

“all labour provided through, on, or mediated by platforms and which features a wide array of standard and non-standard working arrangements/relationships, such as (versions of) casual work, dependent self-employment, informal work, piecework, home work and platform work, in a wide range of sectors. The actual work provided can be digital or manual, in-house or outsourced, high- or low-skilled, on or off-site, large- or small-scale, permanent or temporary, all depending on the specific situation” (Garben 2017, p. 2).

Summary and conclusion

Which terminology describes the phenomenon of work organized through Internet-based platforms most coherently, yet offers enough space to cover its broad and heterogeneous spectrum? Crowdfork is especially popular in German-speaking contexts, however it inaccurately suggests that the business models of all work platforms rely on a large pool of anonymous and exchangeable workers (Pongratz 2018). Of similar popularity in the English-speaking world is the term gig economy. It aims to highlight a core aspect of platform labour, which is the piece-meal basis due to contingent working relationships. Reports and studies operating with the term ‘gig’ highlight the distinct work organisation and its technical underpinnings. However, the term tends to be applied only to location-based forms of platform work (e.g., Uber, Foodora, etc.). Terms containing ‘platform’ on the other hand point to the distinct mode of work organisation, where a digital mediated interface rather than a management hierarchy that organises, controls and remunerates labour.

To us, *platform work* seems to be the best choice, as the term operates independently from a particular semantic context or actual work form, yet grasps the phenomenon of Internet-mediated outsourcing of human labour through platforms. By platform work, we aim to express the principle that work is mediated via an online platform in the Internet. The entity ‘platform’ is of high importance. Platforms provide standards

for governing the exchange relationships between clients and workers and enable particular actions of platform owners, clients and workers (Kornberger 2017; Star/Ruhleder 1996; Vaujany et al. 2018). That is, they represent pivotal points of production (Gandini 2018) determining working conditions.

A second important characteristic of platform work, and especially for our present discussion, are the different spaces and places in which different forms of platform work occur (Flecker 2016; Graham et al. 2017; Herod/Rainnie/McGrath-Champ 2016). As we will show, spatial dimensions determine the scopes in which activists and regulatory actors can act. To account for this dimension we distinguish into remote and location-based platform work (see also Schmidt 2016). In *remote platform work*, work can be done from any place in the world with an available Internet connection. This facilitates different arbitrage mechanisms, i.e., the exploitation of differences of wage, demand and regulation levels on a global scale (Aytes 2013; Bauer/Gegenhuber 2015; Ellmer 2015; Graham/Hjorth/Lehdonvirta 2017; Prassl 2018). *Location-based platform work*, by contrast, is bound to a specific region in which the platform offers its services (e.g., cities). In such local settings, worker- or union-led actions addressing platforms and regional/national/EU regulations have much higher chances to influence platforms and improve conditions directly (Murillo et al. 2017, Schmidt 2016).

Infobox 1: Summary of core themes and findings of chapter 'Definitions and typologies of platform work'

Current terms for describing platform-mediated work only catch a certain aspect of platform work. Most fail to include semantical dimensions which are relevant for issues related to influence and regulation of platform work.

- **Crowdwork** is mainly in German-speaking countries and points to large pools of exchangeable workers yet ignores the focus on individual talents and characteristics often demanded in platform work.
- **Gig work** is mainly in English-speaking countries; focus on piece-meal compensation and technical underpinning of platform-based work organization.
- **Platform work** in its current use has a focus on the mode of work organization via platforms and includes a broad range of work activities.

We suggest the term ***platform work*** and propose to differentiate into:

- ***Remote platform work***: work can be done from any place in the world with an available Internet connection.
- ***Location-based platform work***: bound to a specific region in which the platform offers its services.

This distinction integrates the highly relevant spatial dimension of platform work into consideration which determines the scopes in which activists and regulatory actors can act.

Relevance and diffusion of platform work

Having clarified and localized our phenomenon of interest, we next discuss some recent figures of platform labour to estimate its relevance in contemporary labour markets. Although platform work is beyond question a global phenomenon (the number of workers is especially large in Asian countries, Kässä/Lehdonvirta 2018), we focus our analysis on European countries.

Finding reliable numbers for platform work remains challenging for several reasons. First, platform work is based on a triangular relationship between platform workers, clients, and platforms. As none of these groups represents a stable population, it is difficult to draw an overall picture (Bauer/Gegenhuber 2017; Ellmer/Reichel 2018; Fabo/Kilhoffer/Lenaerts 2017). Second, platform labour lacks clear, formalized and harmonized definitions and robust indicators (Florisson/Mandl 2018; Huws/Spencer/Joyce 2016), which becomes particularly apparent when browsing through the different definitions and sample compositions in pertinent reports. Finally, platform work is to date not part of any public statistics and platforms are not obliged to provide information on their services and work activities (Florisson/Mandl 2018; Manyika et al. 2016; Pongratz/Bormann 2017). As a result, studies do not have a “unified”, but many different data sources of data-bases yielding a range of different outcomes and estimates.

Despite these difficulties, we attempt to provide an overview over the most influential and recent studies of platform work. We distinguish the reports into the categories platforms and clients and crowd workers, each on global level and within Europe (and the US) and provide some background information for evaluating the validity and significance of the reports.

Platforms

Concerning the number of work platforms on a global level, no reliable estimation is available to date. The study of Evans/Gawer (2016) mentions approximately 300 operational ‘workplace platforms’ worldwide. This estimation, however, is based on a number in a blog entry, which does not provide any empirical basis for this estimation.

For Europe, available reports estimating platform numbers somehow discord, pointing to a vast heterogeneity of underlying definitions. The

winner-takes-all dynamic, facilitated by network effects in the platform economy means that a few large platforms capture a major share of the market, which is also mirrored in revenue figures of platforms. However, specialization (e.g. geographical focus or operating in a niche) also allows small platforms to survive (Florisson/Mandl 2018; Kuek/Paradi-Guilford 2015). Vaughan/Daverio (2016) estimate the existence of at least 275 platforms in nine member states (France, Belgium, Germany, UK, Poland, Spain, Italy, Sweden, and the Netherlands) within the five key sectors accommodation, transportation, household services, professional service and collaborative crowdfunding platforms. Based on desk research, Fabo/Kilhoffer/Lenaerts (2017) more recently identified 199 platforms operating in the EU28. From these platforms, 173 are labour-related platforms (Florisson/Mandl 2018). Note that the study on selected EU Member States concludes a higher number of platforms than the study covering the EU28. According to Florisson/Mandl (2018), these numbers hence have to be interpreted with great caution. Based on the extensive overview of recent estimations by Florisson/Mandl (2018) we estimate the number of work platforms between 200 and 300 work platforms, with 30 to 50 platforms situated in major European countries.

Clients

Turning to the number of clients of platform work, no estimation of the absolute number of clients exists. The Oxford Internet Institute's Online Labour Index (Kässi/Lehdonvirta 2018) provides a valuable source to estimate the relative shares of clients by countries. The index offers an approximation of the volume of tasks and projects placed by clients on the five largest and most frequently visited platforms offering remote work, representing at least 70 % of the market by traffic. The platforms are ranked according to their visitor numbers based on the online traffic measurement service Alexa and includes the platforms Upwork, Freelancer, Peopleperhour, Amazon Mechanical Turk and Guru.

By far the largest share of clients is based in the USA (> 50 %), followed by Europe (about 27 %, with GB approx. 10 % and others about 17 %), Asia and Oceania (about 27 %, of which India and Australia each account for about 15 %) and Canada with about 7 %. The index also provides evidence that the volume of remote platform work is growing. In the period from May 2016 to August 2018 the volume of available tasks on the six platforms increased by up to 40 % overall. The value in the same period, however, is very volatile and shifted within a range of 44 %, mainly decreasing during summer holidays/around New Year' Eve

and increasing in spring and autumn. Figures disclosing the task volume or market activities on location-based platform labour are, to our best knowledge, not available to date.

Platform workers

Global level

Concerning the number of platform workers, a broad range of different estimations exists. We focus here on selected studies demonstrating rigor and relevance.

The most reliable available numbers on platform workers worldwide exist for remote platform work. One frequently cited study was authored by researchers from the World Bank in which they estimate the overall number of registered remote platform workers engaged in online outsourcing about 47,800,000 (including the platforms Upwork, Freelancer, Zhubajie/Witmart, Amazon Mechanical Turk and CrowdFlower). The authors assume that a share of one-tenth of this number, that is 4.700.000, is regularly engaged in remote platform work (Kuek/Paradi-Guilford 2015). Analyses of process data on single platforms underline this estimation. For Amazon Mechanical Turk, having 500,000 registered crowd workers, Fort/Adda/Cohen (2011) estimate the number of active Turkers between 15,059 und 42,912. On oDesk (now Upwork) a share of 10–12 % actively conducts work (Graham/Hjorth/Lehdonvirta 2017). These numbers, however, cannot disclose any information on their cross-platform activities as they include worker registrations on two or more platforms (Pongratz/Bormann 2017).

Since July 2017, the Online Labour Index (Kässi/Lehdonvirta 2018) provides a worker supplement tool. This tool tracks the relative share of active platform workers, defined as persons who are gainfully employed for at least one hour in the survey week, according to their home countries. The tool includes data from the platforms Fiverr, Freelancer, Guru, and Peopleperhour³, representing at least 40 % of the global market for remote platform work. Roughly 3.5 million are registered on these platforms, with approximately 100,000 workers work at least once in any given week. Based on these figures, the authors estimate the total number of remote platform workers at 7 million. The tool also provides interesting insights into the global division in remote platform labour. Accord-

3 For details on the methodology see <http://ilabour.oii.ox.ac.uk/measuring-the-supply-of-digital-labour-how-the-oli-worker-supplement-is-constructed/> (last accessed on 25 May, 2019).

ing to the index, more than 70 % of online work available on platforms is accomplished by platform workers in Asia, followed by 12 % in Europe and about 9 % in North America. As the Online Labour Index authors note, the market shares of platforms in non-English-speaking countries are likely to be underrepresented in the figures.

US and Europe

Concerning the numbers of platform workers in Europe and the US, again, a broad range of different estimations exists. For the US, a frequently cited analysis of Katz/Krueger (2016) of the 2015 RAND-Princeton Contingent Worker Survey (RPCWS) concludes that the online workforce is relatively small compared to other forms of alternative work arrangements: Only 0.5 % of US workers report that they are working through an online intermediary (e.g., Uber or Task Rabbit). Katz/Krueger (2016), however, concede some methodological issues, such as ambiguity in questions, leading to this small number.

While for the US, available numbers of platform workers appear remarkably low, for Europe they appear remarkably high. A frequently mentioned study from Huws/Spencer/Joyce (2016) conducted an analysis of data from European Internet users in the UK, Sweden, Germany, Austria, and the Netherlands responding to the online omnibus general population surveys in the respective countries. Following the loose definition of platform work “as paid work that is organised by an online platform” (p. 2), the study reveals that in the different European countries between 9 (NL and UK) and 19 % (AT) of people have at least once searched for a platform-based employment opportunity. Between 5 (NL, SE and UK) and 9 % (AT) perform platform work tasks on a weekly and 6 (NL, SE and UK) up to 13 % (AT) on a monthly basis. These high numbers (especially for AT) can presumably be assigned to the sample of the study which is representative for Internet users in each country, possibly leading to an overrepresentation of platform workers. As the authors themselves note:

“[B]ecause only an online population was sampled, we cannot state with complete confidence that the percentages found engaging in particular types of online activity can be extrapolated to the entire population of these countries.” (Huws/Spencer/Joyce 2016, p. 20)

The most recent EU-based survey from Pesole et al. (2018) is based on the COLLEEM survey and includes respondents from 14 EU Member States. The authors defined platform work as

“providing services via online platforms, where you and the client are matched digitally, payment is conducted digitally via the platform and the work is location-independent, remote” or “work is performed on-location” (p. 3).

Their figures include categories such as clerical and data-entry work, professional services, creative and multimedia work, sales and marketing support, software development, writing and translation, interactive services or transportation and delivery services, as well as renting services such as Airbnb (thus deviating from our definitions of remote and location-based platform work). The figures reveal that on average 10 % of the adult population in the EU-14 ever used online platforms for the provision of some type of labour services. Less than 8 %, however, work on platforms with some frequency, less than 6 % spend a significant amount of time in platform labour (at least 10 hours a week) or earn a significant amount of income with it (at least 25 % of the total income). In all countries, platform work as a main form of employment (at least 20 hours a week) or main source of income (at least 50 % of total income) remains marginal, affecting about 2 % of the adult population in each country on average.

In terms of country-level insights, Pesole et al. (2018) show that countries with comparably high relative numbers in platform work are UK, Germany, the Netherlands, Spain, Portugal and Italy. By contrast, Finland, Sweden, France, Hungary and Slovakia show low relative numbers. Figures on international level from the OLI worker supplement tool on remote platform work (see above) complement this finding: The UK, Ukraine and Germany are among the top 20 countries to accomplish online platform labour globally.⁴

The currently most detailed insights into the characteristics of platform workers exist for the UK. In a recent study, Lepanjuuri/Wishart/Cornick (2018) show that 4.4 % of the population in Great Britain (roughly 2.8 million people) had conducted remote or location-based platform work in the last 12 months. Their definition is closest to our definition as it explicitly excludes digital platforms for selling goods and renting services (e.g. Etsy or Airbnb). With a share of 42 %, courier services are the most common type of platform work activity in the UK. Transport services (28 %) and food delivery services (21 %) are slightly less common. Regarding specific platforms, Uber was the most frequently men-

4 At the same time, the tool shows the high concentration of remote platform workers in Asian regions underlining the minor role of European countries in remote platform labour markets. Workers in India accomplish about 26 %, Bangladesh, about 20 % and Pakistan about 14 % of the available task volume on four major platforms. By contrast, UK workers accomplish only a share of about 6 %, Ukraine workers about 1.25 % and German workers about 1 %.

tioned platform (18 %). The online freelancing platform Peopleperhour and food delivery service Deliveroo were both mentioned by 12 %. The figures also indicate a fast growth of platform work in the past months: 38 % first got involved in the platform work in the last six months and 24 % had been working on platforms for between six months and two years. Only 14 % had been involved in platform work for more than two years.

For Germany, several studies exist which mainly focus on demographic aspects and income of remote platform work (Bertschek/Ohne-mus/Viete 2016; Leimeister/Durward/Zogaj 2016). Overall, they indicate no estimations on the overall numbers of platform workers in the country. Based on the approach of Kuek/Paradi-Guilford (2015), Pongratz/Bormann (2017) estimate the number of registered remote platform workers in Germany between 500,000 and 1,000,000 with a share of active online platform workers between 100,000 and 300,000 platform workers (active at least once a month). Between 1,000 and 5,000, according to their own estimate, make a living out of remote platform work. Compared to approximately 50 to 55 Million people in Germany who could potentially work via platforms, their numbers remain marginal.

Summary and conclusion

Despite a broad range of existing reports, it is almost impossible to sketch a clear picture of the volume of platform work and/or platform workers on global or European level. This is mainly due to the heterogeneity of sampling strategies, data sources and definitions in available reports, each yielding a slightly different result. Platforms still operate under the 'public radar': As frequently mentioned throughout the studies, there is a general lack of official numbers on platform work in public statistics. Probably due to its (still) marginal impact on labour markets or that platforms operate outside traditional institutional systems, governments respond slowly to this emerging phenomenon. If platforms were obliged to publically disclose data related to their services we would likely have a more unified data basis for studies on platform labour.

Accordingly, as detailed out above, difficulties in existing estimations may be assigned to variations in underlying definitions, data sources and samples but also to methodological issues present in the studies. The most recent studies for Europe indicate that in 14 EU Member states 10 % of the population have provided a service through platforms on average (also including renting platforms) while only 2 % gain a main share of their income via platform work. Note that the share of workers in Eu-

rope and the US is in general comparably small, especially in remote platform work. As the OLI worker supplementary tool indicates, the numbers of remote platform workers is far higher in Asian countries, accomplishing over 70 % of available tasks on four major platforms. The reason for this is that clients get these services comparably cheap through labour/regulatory arbitrage (Aytes 2013; Bauer/Gegenhuber 2015; Ellmer 2015; Prassl 2018) while at the same time platform workers can draw on due to skill arbitrage: they can set higher prices for their services compared to the market prices in their home countries by being able to escape the boundaries of their local labour markets (Graham/Hjorth/Lehdonvirta 2017).

Despite these difficulties and vagueness in current numbers, we contend an important finding of our analysis that recent numbers indicate a general growth of platform work in the past two years or the like. As indicated by the Oxford OLI, in the period from May 2016 to March 2018 the jobs offered on the six largest English-language online work platforms increased by up to 40 % overall. The most recent and detailed findings available for location-based platform work for the UK also report that 38 % first got involved in the gig economy in the last six months, 24 % had been working via platforms for between six months and two years and that 14 % had been involved in the platform work for more than two years. Note that in this period, platforms mediating location-based platform work (e.g., Uber) grew and expanded enormously due to mergers/acquisitions and initial public offerings⁵. However, it certainly matters when such studies were conducted. Studies that occurred at the time of considerable platform-growth may lead to overestimating the growth volume (since growth rate may decline over time).

This growth may also be related to wider trends in (local) labour markets. Recent studies state correlations between local unemployment rates and a growth in platform work. Borchert et al. (2018), for instance, observed a correlation between a raise in unemployment rates in the US and an increase in platform worker numbers in remote platform work. Looking at the case of Uber in US labour markets, Rozzi (2018) shows that 4 years after entering local labour markets, the platform triggers an increase of 20 % in non-employer firms relative to employment in the transportation sector and that the number of platform workers is highest where unemployment is highest.

5 See https://en.wikipedia.org/wiki/Timeline_of_Uber (last accessed on 25 May, 2019).

Infobox 2: Summary of core themes and findings of chapter 'Relevance and diffusion of platform work'

It is still **difficult to sketch a clear picture of the relevance and diffusion of platform work**. The reasons for this situation are:

- Clients, platforms and platform workers are **unstable populations** and are hence difficult to measure.
- Available reports draw on **heterogeneous definitions and sampling strategies**; most samplings include renting and selling platforms (ebay, Etsy, Airbnb)
- **No official public statistics** nor data from platforms on platform work are available to date

Recent numbers indicate that platform work is still a marginal phenomenon on European labour markets. The most important and robust estimations and figures found are:

- Platforms in the EU: between 200 and 300 work platforms, with 30 to 50 platforms situated in major European countries
- Clients: clients in the US post > 50 % of tasks available on six major remote work platforms, followed by Europe (about 27 %, with GB approx. 10 % and others about 17 %)
- Platform workers: 2 % of adult population in 14 EU Member States use platform work as main income source (> 50 % of income and more than 20 hrs./week) including location-based and remote platform work (but also renting platforms, such as Airbnb)

Due to different **arbitrage mechanisms**, remote platform work is mostly fulfilled by workers in Asian and African countries.

Overall, **recent numbers indicate that the volume of platform work is growing**. One of the most detailed reports available for the UK indicates that 38 % first got involved in the platform work in the last six months. However, the point in time such studies were conducted certainly matters. Studies published at the time of considerable platform growth may lead to overestimating the growth volume since growth rate may decline over time. Recent studies for the US suggest that a raise in (local) unemployment rates coincides with a growth of self-employed and participation in platform work.

Worker motivations, working conditions and income

For understanding approaches that aim to improve the conditions for platform workers, it is important to engage the question why platform workers participate in platform work and how current working conditions look like. In this chapter hence, we will present findings on the motivations of platform workers as well as on the working conditions on platforms. We will show that remote and location-based platform work relies on specific working conditions respectively, which are important to understand both worker motivations and working conditions. In a separate section, we will also integrate findings on income levels and the economic dependence on platform-related income, as they represent crucial factors for understanding efforts to improve the conditions of platform work.

Motivations of workers

In the first part, we consider different types of platform work, as the motives to engage in platform work are contingent to the nature of tasks. Different platforms address different populations as potential workers in terms of geographical, educational and socio-demographical dimensions, with different situations in life, different interests and opportunities. For instance, Amazon Mechanical Turk offers rather simple clickwork and may hence address different populations than Upwork or Uber, where workers fulfil more complex tasks, need different sets of resources and skills and have different wage levels. Accordingly, people doing clickwork may have different expectations and goals with their work than people who design logos or bring others to their desired destinations. For understanding motives, it is hence important to consider different types of platform work.

Remote platform work

Freelance marketplaces

Freelance marketplaces, such as Upwork, provide a wide variety of services ranging from software development over design tasks to clerical jobs, writing and translation. Most of the jobs require a certain qualification, which is why most of the platform workers are highly qualified (Schmidt 2016). On platforms, workers present themselves as individual freelancers, offering their services to potential clients. This mode of

matching emphasizes the need for an active self-presentation for platform workers, further fostered by rating and matching algorithms (Pongratz 2018; Schörpf/Flecker/Schönauer 2017).

For understanding the motivations of workers on freelance platforms, a detailed study of a Turkish freelancing platform (Abubakar/Shneikat 2017) provides a valuable point of departure. According to the authors, platform workers report a high desire for flexibility for scheduling and workload planning, which also represent popular reasons to enter platform work. Moreover, they stress autonomy and freedom of work in terms of work contents and work organization. Freelance platform workers also list a range of intrinsic motivations, including the enjoyment of solving problems, passion or the opportunity to develop skills. On the extrinsic side, workers list economic incentives in terms of higher earnings (compared to national wage) or earning online reputation. Finally, platform workers emphasize the low entry barriers of freelance platforms. Remote access to freelance labour markets enables bypassing traditional barriers by enabling participation in the global economy (by overcoming geographical boundaries). In addition, they regard sexism, disability and discrimination as largely absent.⁶

A quantitative study on online freelancers (Shevchuk/Strebkov/Davis 2018) examined the effects of intrinsic and extrinsic work value orientations on worker well-being. As the authors conclude, intrinsic work orientation reduces emotional exhaustion and leads to higher satisfaction with work-life balance. On the other side, extrinsic work values have negative effects and harm the health and satisfaction of workers. These findings are in line with studies on traditionally employed workers and show no differences between them and self-employed freelancers, despite the perceived autonomy of the latter.

Flexibility and sovereignty over the amount of work seem to be important reasons to switch to online (as well as traditional) freelancing. However, recent research in various forms of remote platform work has shown that freelance workers basically suffer under long working hours the same way that employed workers do (Lehdonvirta 2018; Schörpf/Flecker/Schönauer 2017). Another study on independent contractors (Bidwell/Briscoe 2009) has shown that expectations on flexibility and sovereignty are not met in reality due to high competition in successfully acquiring a project or client. Freelancers accept new job offer-

6 Bridging geographical boundaries matters for clients, too. For instance, 99design connects small and medium-sized firms with designers from around the world (particularly Asia as anecdotal evidence suggests, Bauer/Gegenhuber, 2017). Regarding the discrimination aspect it is worth highlighting that although platforms have a high-degree of openness regarding who can contribute, gender-discrimination still can occur (we will come back to this point later on).

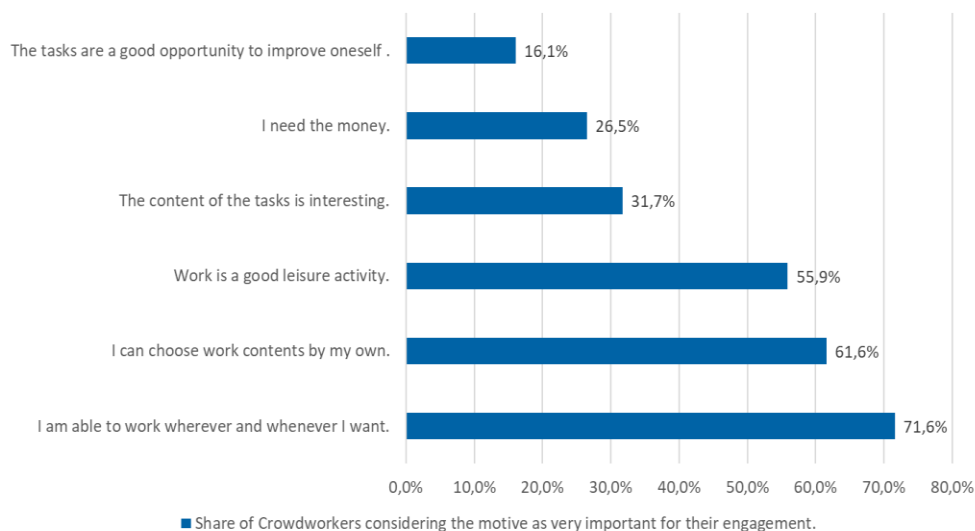
ings in most cases as potential earnings become more important than spare time and family time in the situation when they have to accept new jobs.

Microtasking platforms

Compared to freelance platforms, microtasking platforms, such as Amazon Mechanical Turk, offer rather simple jobs for very little money. The aim is to provide “humans as a service” (Jeff Bezos, see Prassl 2018), that is, to strip human labour from a person and offer their labour power without having to deal with actual employees (Ellmer/Reichel 2018). Because workers are exchangeable to a large extent, individual skills and reputation do not play a central role on such platforms. Due to highly standardized work orders and the downscaling to single tasks, there is little to no need for ensuring quality or assessment. The allocation is in many cases organized by a self-selection by the lowest possible wages, as the employers do not actively decide for an individual to do the job (Schmidt 2016).

As with freelance workers, flexibility related to location and work content occurs as important motivates to engage in microtasking. A survey conducted by Bertschek/Ohnemus/Viete (2016) on the motives of German workers on two microtasking platforms shows that being able to work whenever and wherever and being able to choose work contents are the two most prevalent motives (see figure 1).

Figure 1: Motives of remote platform workers in Germany



Source: Bertschek/Ohnemus/Viete (2016)

These self-reports might contradict the findings by Pongratz/Bormann (2017), who doubt the flexibility in microtasking due to pressures related to strict temporal requirements, deadlines and pressure of time (cf. Lehdonvirta 2018). It might also indicate disparities between the perceived work autonomy and the actual work autonomy, which are often found in research on self-employment. As stated above, work autonomy of self-employed freelancers does not change the effects of extrinsic work values for worker well-being. Freelance workers in general experience long working hours the same way that employed workers do.

Other studies mirror the results of Bertschek/Ohnemus/Viete (2016). In their review of studies on AMT workers motives, Kaufmann/Schulze/Veit (2011) find task-related motivation factors, such as applying a variety of skills and work autonomy in finding solutions, seem to play a major role in microwork. In these regards, Bucher/Fieseler (2017) found microtask workers to experience flow-like states of immersion while working. Though the “playful and absorbing nature of digital labour” (p. 1881) can produce positive peak experiences, they are also able to foster a kind of addictive state, in which the workers lose a lot of time and recreational phases to a poorly paid, exploitative occupation. Accordingly, intrinsic motives related to the experience of tasks seem to prevail in microtasking. Despite the overhang of intrinsic motivations, payment remains a relatively important motive of microtask workers across the studies.

Contest-based (creative) platforms

Platforms for contest-based creative crowd work make use of competitions, a third way of matching clients with platform workers. Contest-based platforms provide creative work and mainly aim for creative ideas or design drafts. From the view of platform workers, such contests are considered as space for personal development, often done to gain of experience (Schmidt 2016).

As the competitive setting creates winner-takes-it-all outcomes, it offers little chances for predictable incomes (Ellmer/Reichel 2018; Schmidt 2016). In accordance, intrinsic motivations seem to prevail in this form of remote platform work, too. On creative platforms, where platform workers can interact with each other and perceive each other’s work, a community can emerge (Dobusch et al. 2013). Accordingly, people may also be motivated by the sense of community they experience. Nonetheless, earnings are still an important factor to participate in (creative) contests. In his qualitative study on Threadless, Brabham (2010) suggests that people are motivated to contribute for making money, improving creative skills, networking and exposure for future opportunities, identity with community and, echoing findings from microtask platforms (see above),

because they get in a sense addicted to this kind of work (Al-Ani/Stump 2015). In another qualitative study of an European-based creative platform, Dammayr et al. (2016) report that, without money, a worker would not decide to participate in a contest. Other critical motivational factors they found are self-expression, fun as well as one comparing oneself with an international design community (which may matter even more for hobbyist designers). Further reasons for participating are learning (e.g., for designers at the beginning of their career), autonomy, staying in touch with the work life during childcare, earning extra money, filling gaps (e.g. using the free time to work on the platform between other projects), market access (e.g. for designers in eastern Europe where the local market is insufficient) as well as access to major clients (large corporations which one could not access otherwise). As a quantitative study on crowdsourcing contests in China (Zheng/Li/Hou 2011) shows, a range of intrinsic motivators (including autonomy, variety, tacitness and analysability) have a significant effect on the platform workers' participation in contests, whereas the opportunity to gain money was not associated with the intention to participate. As the development of ideas and designs is embedded in a community, most contest-based platforms also facilitate co-operative behaviour in form of comments and the exchange of ideas with like-minded peers. This enables participants to enlarge their social networks and to engage in community building. The simultaneous occurrence of cooperative and competitive elements creates a new encouraging environment of "communitation" (Hutter et al. 2011).

Location-based platform work

Platforms mediating location-based work offer a range of mid-complex tasks, such as transport services, food delivery or domestic services. Compared to the different forms of remote platform work accordingly, we find somehow different configurations of why people participate. In this section we especially focus on transportation and food delivery as these fields are well-researched, while at present domestic services require more investigation.

In location-based platform work, money appears to be the most important motive for workers. Nevertheless, studies suggest that the earnings from location-based platform work only provide a supplement income for the majority of workers (Pesole et al. 2018). For instance, just a quarter (24 %) of a sample of Uber drivers said this type of work represents the primary source of income (Hall/Krueger 2018). Similar findings can be found in platform-based food-delivery. A case study at one of the

leading food-delivery platforms showed, many workers did not rely too much on this job, e.g., were students and lived at home, received generous financial assistance from their country of origin or considered it to be a transitional job (Herr 2017, 2018a). For them the money generated a valuable bonus (CIPD 2017). Just a minority of location-based platform workers do this type of work, because they were unable to find any other income source (Lepanjuuri/Wishart/Cornick 2018).

Similarly to remote platform work, working time control and flexibility appear to be important motivational factors in location-based platform work as well. The Uber survey of Hall/Krueger (2018) shows schedule control (87 %) and the perceived flexibility (85 %) were primary reasons for working for Uber. Similarly, Balaram/Warden/Wallace-Stephens (2017) claim that a main motivation for location-based platform workers is the flexibility to meet other commitments. These aspects were also echoed in research on platform-based food-delivery (Herr 2018a).

Working conditions of platform workers

In order to grasp the actual needs and policy challenges, we will point out the general working conditions of platform work in the following. Working conditions are largely determined by the triangular relationship of this type of work organization. This relationship requires us to understand why companies opt for utilizing platform based work instead of traditional ways of outsourcing.

While low labour costs are of course an overall important factor, platform-based work organisation provides important advantages compared to 'regular' modes of outsourcing. For the case of online freelancing, Corporaal/Lehdonvirta (2017) outlined three motivations for outsourcing to a platform (platform sourcing). Firstly, platforms provide access to an easily scalable workforce, as well as to skills and experiences that are not available within the organization (Afuah/Tucci 2012; Bauer/Gegenhuber 2015; Ellmer/Reichel 2018). Secondly, they enable a great reduction of transaction costs, especially the start-up costs of a new project. Regarding the contemporary importance of agile business development and the pervasion of project-based work, this represents an essential asset (Davis 2013; Nambisan/Siegel/Kenney 2018). Thirdly, they widely reduce conventional barriers in the hiring process, such as geographical or informational distances or administrative efforts (Bauer/Gegenhuber 2015; Verona/Prandelli/Sawhney 2006). These client-sided advantages, combined the labour-as-a-service orientation by platforms, convey several issues that (can) lead to exploitative behaviour

(Choudary 2018). In the following, we outline some core issues in working conditions from the perspective of platform workers.

Information and power asymmetries

In both remote and location-based platform work, workers often face information and power asymmetries to their disadvantage which are created by platforms. In remote platform work, for instance, Amazon Mechanical Turk withholds important information regarding qualification levels and information on clients. Clients also can reject work of platform workers without reasoning (Irani/Silberman 2013; Marvit 2014). In location-based platform work, Uber withholds key information until the worker accepts the request (Choudary 2018). Another information asymmetry concerns data flows on platforms. Platforms utilize a wide range of labour process-related data flows to create, modify and improve matching algorithms. Due to lacking transparency from the side of platforms, workers often have a limited understanding of their functioning (Choudary 2018; Ivanova et al. 2018).

New forms of control

As platforms actively shape work relations, platform work also comes with new forms of labour control. In remote platform work, the control over work processes is comparably loose. Upwork, however, provides a good example for a fairly fine-mashed, yet voluntary control system, the so-called Freelancers Work Diary. This diary is a document created by a desktop app that includes screenshots of the freelancer's current screen in 10 minute lags. The system keeps record of the work progress and subsequently serves as the basis for the hourly rate (Ellmer/Reichel 2018).

Standardized jobs in location-based platform work are comparably easy to govern by means of digital technologies, especially by means of app-based techniques of control. For instance, workers are tracked by global positioning systems to enable the algorithm to assign fares or deliveries (Rosenblat/Stark 2016; Shapiro 2017). By means of these systems, platforms may force workers into unprofitable interactions, such as Deliveroo riders who have 30 seconds to accept an order. These time-based acceptance systems force workers to decide without the necessary information (size, payment amount, location and distance) to base this decision on (CIPD 2017). Food delivery workers inquired by Herr

(2018a) had no opportunity to decline an order, although the app showed this option. If workers pressed ‘decline’ the order would re-appear.

A more subtle and implicit form of app-based control is metrics-driven feedback to control and influence platform workers’ behaviour. For instance, platform workers on many platforms depend on reputation systems as positive ratings determine their access to new jobs or tasks. Much in favour of the employer side, these systems put a constant need for high service orientation and commitment on the employees⁷. As a result, reputation systems also help to discipline platform workers as they facilitate unpaid overtime or working at unsocial hours just to meet clients demands and avoid a bad rating (Schörpf/Flecker/Schönauer 2017). The dependency on reputation systems also limits workers agency when they are inaccurate, but also when it is not possible for workers to transfer their reputation to other platforms (Choudary 2018). The power imbalance is reduced, however, if workers can also rate their clients (Gegenhuber/Ellmer/Scheba 2018; Irani/Silberman 2013).

As another example, workers have to meet a certain threshold of accepted jobs on some platforms. A Deliveroo rider interviewed for the report of CIPD (2017) explains that if he turns down two jobs in a row, he would automatically be logged out of the app. In a similar manner, transportation platforms, such as Uber or Lyft, require workers to maintain a certain acceptance rate (Rosenblat/Stark 2016), couriers on Postmates can be excluded from the platform when they fall below a certain rate (Shapiro 2017).

Finally, metrics-driven mechanisms to influence worker’s behaviour include elements of gamification and nudging to stimulate worker productivity (Gandini 2018). For instance, apps display courier’s working times, digital interactions and individual performance data fostering the achievement of ‘personal bests’ (Scheiber 2017; Schreyer/Schrape 2018a, 2018b). Pre-defined thresholds in achievements also allow higher compensation levels and succession within the driver’s hierarchy (Schreyer/Schrape 2018a), providing a further source of metrics-based incentives for higher workloads.

⁷ This effect applies to the other side of the market too. As Scott/Orlikowski (2012) show, Tripadvisor puts pressure on hotels to make every client happy in the hope to receive a positive review.

Outsourcing of unpaid (overhead) costs

Another frequently mentioned issue is that platforms tend to outsource costs and risk onto workers (Choudary 2018) which has a strong influence on the working conditions. By outsourcing costs onto workers, platforms are able to offer services at a low price (Corporaal/Lehdonvirta 2017). Combined with the mode of work organization, the outsourcing of (overhead) costs leads to an intensification of work.

A prototypical example for outsourcing costs to the workers can be found on contest-based platforms. In a design competition on 99Designs, say, 100 people participate in a contest but only one submission wins the award. That implies that 99 people do work without getting any payment but generating substantial value for the platform (since a key part of the value proposition of 99designs is that clients can choose among a large variety of designs; Bauer/Gegenhuber 2017). Further examples for unpaid overhead costs in remote platform work is that AMT workers spend up to 20 minutes of every hour for searching for tasks (Berg 2016), indicating that large parts of necessary work-initiating tasks become invisible (Martin et al. 2014) and are accomplished within an informal context (Hofbauer/Klaus/Schmidt 2019).

In location-based platform work, a survey-based study by Zoepf et al. (2018) covering 1,100 Uber and Lyft drivers compared drivers' self-reported revenue, mileage and choice of vehicle with the estimates on costs, e.g., maintenance, fuel and insurance. They find that 30 % of the drivers are actually losing money once vehicle expenses are included. Food-delivery platforms usually do not cover repair costs for bikes or gloves or other expenses, such as the running costs of a phone data during work, etc. (Todolí-Signes 2017). Platforms also shift risks of low demand from the platform to the workers, because (as with other on-demand transport services (see Möhlmann/Zalmanson 2017), waiting periods are not paid (Herr 2018a). Finally, platforms shift overhead costs for employment to workers (see next point).

Self-employment

Most platform workers are in a difficult situation of self-employment, which limits the access to protections and social security options (Coddagnone/Abadie/Biagi 2016; European Commission 2018). Due to self-employment status, companies do not have to pay for overtime, social security contributions, health insurance, unemployment benefits, paid sick leave or paid holidays (Shapiro 2017). In fact, these costs are out-

sourced to platform workers themselves (see above). It should be noted that for some platforms (like e.g., Uber) the lack of regulations and protection by law is not a side effect but a constitutive element of the business model (cf. chapter on regulation of platform work).

Generally, remote platform work shares similar burdens with more common forms of self-employment, including high economic uncertainty or even loss of earnings and long working hours (Bormann/Pongratz 2018). As mentioned above, finding an actual job there is very hard and can take quite a while on freelance platforms such as Upwork. Due to the rating algorithms and systems of reputations, only a small amount of the registered workers receives actual offers. Consequently, the majority of the workers feel replaceable and face high economic insecurity regarding their job situation (Graham/Hjorth/Lehdonvirta 2017).

Earnings from platform-based work often undercut minimum wages (Hara et al. 2018; Leimeister/Durward/Zogaj 2016). Sometimes, platform workers face a (potential) loss of earnings for already performed jobs (Irani/Silberman 2013; Marvit 2014). The terms and conditions on some platforms allow clients the refusal of payment, sometimes without the declaration of reasons. Cases of abuse are inevitable and are hard to avoid, especially when the conditions set tight work schedules and deadlines.

In terms of working hours, heavy variations in workloads, low earnings and rapid communication patterns, the opportunities for flexible working times are limited. Instead, online workers often feel stressed by a platform's demands and the strict and unforgiving terms and conditions. As a short response time of the workers is part of good ratings, enhancing the chances for new orders, freelancers feel a permanent need to be online and available (Schörpf/Flecker/Schönauer 2017).

Virtuality

The consequences of virtuality surface mostly in remote platform work⁸. Following issues arise due to virtuality (Bormann/Pongratz 2018): invisibility, social isolation and decontextualisation. First, as work does not take place within a corporal social environment, it is potentially invisible to the employer as to any colleagues. The relationship between employ-

⁸ We can attribute this also due to sample bias of platforms. Certainly, workers for food delivery services meet each other in the real world. This may not necessarily be the case for cleaning service workers. We need more research on this issue, particularly comparative studies. For instance, we expect that microtask platforms feel more isolated than, say, workers in a creative community platform such as Threadless.

er (customer) and employee is very limited, as the platform acts as intermediary, with a self-interest to keep the superiority on communication. Orders are processed without any personal contact, which might also change the way the employers treat the workers (Koslowski 2016). Second, the lack of any personal contact also results in a feeling of social isolation, as well as to a lack of any acknowledgement and appreciation. Workers also criticize the missing of briefings or any kind of exchange during the initiation of the order (Bormann/Pongratz 2018). Third, within the field of platform work, the division of labour reached an even higher level than more traditional forms of work organization (Ellmer 2015). When workers do not know their clients on the other side of the globe, they lack of a bigger picture of what they are actually contributing to (Ellmer/Reichel 2018). For the case of microtasks, the sense of the task itself may not be comprehensible. This decontextualisation accounts for a major difference to other forms of freelancing (self-employment), where the experience of autonomy and self-efficacy can at least partly compensate for the various stresses and strains.

Income levels and economic dependency

As already indicated, other important factors to understand current issues in platform work are income levels and the workers' economic dependency on platform work. As we have pointed out before, the importance of income varies between types of platform work as well as between workers. There are also variations according to the economic situations in countries. Especially in remote platform work, platforms create a foundation to arbitrate labour across spatial and temporal boundaries. In urban regions of low-wage countries, having a good coverage of higher education and internet access (e.g. in Manila, Kuala Lumpur, and Nairobi), platform work can be an attractive source of primary income (Graham/Hjorth/Lehdonvirta 2017), while in Western countries, the income levels of platform work may be interpreted as unfair or sheer exploitation. At the same time, platforms tap into excess capacities (Bauer/Gegenhuber 2015) of platform willing accepting lower pay because they are not dependent on it (e.g. doing it just for fun – intrinsic motivation prevails) or they can at least make some money with their idle labour resources (e.g. using platform work as supplementary income source). In this section, we briefly summarize current studies on income levels in platform work and economic dependency.

Income Levels

In terms of income levels, a recent study on platform workers in the UK (Lepanjuuri/Wishart/Cornick 2018) provides the most detailed insights for both remote and location-based platform work. The authors report that 25 % of the surveyed platform workers earned an hourly income of less than £7.50 per hour, with variations depending on the actual type of platform work. Those performing other types of jobs found through websites and apps were significantly more likely to earn less than £7.50 per hour (45 %) while those providing location-based platform work (courier services) earned the highest levels of hourly income from their work: A third (32 %) earned £13 per hour and above. Again, platform work provides mostly a supplementary income: Only 9 % of the respondents earned a large majority of their income and 87 % of platform workers earned less than £10,000 in the last 12 months. Accordingly, respondents saw the income from the gig economy as an extra source of income on top of their regular income (32 per cent).

In another study in the US, Hara et al. (2018) took a closer look at the actual earnings of remote platform workers (AMT workers), concluding that the median hourly wage is around \$2, while only 4 % of the workers earn more than the US federal minimum wage of \$7.25. Notably, they included three sources of unpaid work (i.e., searching for tasks, working on tasks that are rejected, and working on tasks that are not submitted) in their calculations. If those unpaid but necessary tasks were to be ignored, the median hourly wage would rise to \$3.18. This stresses the importance of taking the full amount of necessary working time into account.

In order to facilitate more transparency on the income opportunities, the Fair Crowd Work Project (cf. chapter on worker influence on platforms) inquired workers on the biggest micro tasking and freelancing platforms and published data on the actual income levels, business terms and overall work experiences on <http://faircrowd.work>. This provides detailed information on some cases. Table 1 shows the hourly wages and the experience of non-payment (meaning, at least once, the worker didn't get paid despite doing work)

Table 1: Income levels in remote platform work

	Micro tasking			Freelancing
	CrowdFlower	Amazon Mechanical Turk	Clickworker	Upwork
Hourly Wage (min.)	€ 0.51	€ 3.77	€ 0.50	€ 3.94
Hourly Wage (max.)	€ 15.00	€ 29.43	€ 17.68	€ 26.32
Hourly Wage (average)	€ 2.93	€ 10.65	€ 3.84	€ 12.81
Hourly Wage (median)	€ 1.57	€ 8.67	€ 2.92	€ 12.91
Non-Payment Experienced (% of workers)	11 %	60 %	41 %	18 %

Source: <http://faircrowd.work/platform-reviews/>

As the table shows, the income varies greatly, between workers as well as between platforms. The experience of not being paid by clients remains a serious issue and is a source of frustration. And it reflects the outsourcing of risks to platform workers that business terms are designed in favour of the clients and platforms.

In terms of location-based platform work, several studies provide insights into income levels in this sector of the platform economy. Harris/Krueger (2015) show that Uber drivers in the US earn up to \$6 more than their fellow worker in the traditional taxi industry. However, unpaid waiting time and running costs were not included in this calculation. A survey of over 1,100 drivers at the taxi platforms Uber and Lyft showed that 74 % of drivers earn less than the minimum wage in their state and 30 % of them are actually losing money once the vehicle expenses are included (Zoepf et al. 2018). Again, this stresses the importance to include all costs into the calculation to get a clear picture of the actual income level. Platform food deliverers in Europe are likely to earn between € 8 and € 10 on average, which is comparable to similar jobs in the delivery sector, such as bicycle couriers (Herr 2018a). There are even platforms that commit to a fair pay, such as TaskRabbit, which has set a minimum hourly rate for their US workers which is even higher than most

minimum wage standards across US states (Codagnone/Abadie/Biagi 2016).

An emerging topic in platform work wages is gender pay gaps. The mode of work organization in platform work would suggest that discrimination and unequal pay would reduce. For remote platform work, Foong et al. (2018) analysed 48,019 workers in the United States (48.8 % women) on Upwork. The median female worker set hourly bill rates are 74 % of the median man's hourly bill rates, indicating a substantial gender wage gap. This finding can to a large extent be explained through work experience, education level, and job category; however, in some job categories women earned more overall than men by working more hours, outpacing the effect of lower hourly bill rates. Similar patterns occur in location-based platform work. Analysing data of more than one million Uber drivers, Cook/Diamon/Hall (2018) document a gender earnings gap of about 7 %. While this gap can be entirely explained through experience on the platform (learning-by-doing), preferences over where to work (driven largely by where drivers live and, to a lesser extent, safety), and preferences for driving speed, the authors assign this gap to women's relatively high opportunity cost of non-paid-work time and gender-based differences in preferences and constraints.

Economic dependency on platform work

As stated, platform work is a supplementary income for most of the workers, accompanied by a range of intrinsic motivations, at least regarding remote work. It is not quite the same within location-based platform work, as workers name money as their key motivator, but again, it is just a supplementary or temporary source for them. To emphasize this once more, it is a constitutive element of platform work to provide secondary jobs and occasional work and to undermine labour law and regulations, rather than providing traditional employment. The business works because people are doing this without calculating the full risks and efforts, the full cost of work with all its overheads.

For most of the workers, this seems to be fine, as inquires show that the majority is happy with their engagement in platforms. Most independent workers have actively chosen their working style and report high levels of satisfaction with it (Manyika et al. 2016). More than half of the respondents in the UK-based study were either very or fairly satisfied with their experience of providing services on websites and apps (53 %) (Lepanjuuri/Wishart/Cornick 2018). It is important to notice that this is

only the case for workers who use platform work as supplementary income.

Also in Germany, the economic dependency on platform work is limited. As Leimeister/Durward/Zogaj (2016) have shown in a first quantitative inquiry, the majority of German remote platform workers do not rely on the income of their platform-based jobs. Of course, there are differences between the various types of platforms: Market-based platforms show the highest number of workers which describe their earnings as their main source of income. This is not surprising since the type of platform often hosts professional freelancers with a comparably high level of qualification. Microtasking platforms are the least important income sources. Again, this is not surprising since they offer tasks requiring only low qualification.

As these workers do not rely on their engagement in platform work, they are able to decline bad jobs and reduce their overall workload when they favour other engagements/spare time. However, not all of the workers share this opportunity, as there are some that depend on the income that is generated by platform work. Due to the economic dependency, they are forced to accept even poorly or non-paid jobs, in order to get ratings and allocate more jobs. They hardly have the chance to withdraw from the market, and they are in dire need for protection by regulations and secure income. This duality seems to be rarely considered, yet is crucial for policy making and shaping the platform work of tomorrow.

Summary and conclusion

As we have shown, the motivations to engage in remote platform work are focussed on intrinsic and task-related factors, reaching from excitement of creative challenges to gaining of skills and experience in a desired field of work. Certainly, many people would not participate, if they would not receive any money at all. However, if platform work is a side job, subsidized by other sources of income or done for other long-term considerations (e.g. learning), it makes sense why monetary reasons may be a secondary reason to engage in remote platform work in Germany. Indeed, remote platform work is often done as a second or third job (sometimes also during the working time of another paid job) in order to acquire additional income, or as a temporary solution between other employments. Additionally, remote platform work is often done with an attempt to change to another occupation or to gather new experience within a desired field of work. This is especially the case for creative work, what is heavily utilized by competition-based platforms (e.g., de-

sign students enjoy gaining more experience on platforms compared to internships in creative agencies where they do not receive highly creative tasks due to their position within the firm).

Regarding location-based platform work, money appears as the core motivation for people to do these kinds of jobs. For the majority, income from platform work represents a supplement income. Another motivation is the flexibility to meet other commitments. Just a minority of people conduct location-based platform work because they are unable to find other sources of income (Lepanjuuri/Wishart/Cornick 2018).

Platform work is shaped by the triangular relationship between the clients, the workers and the platform. As the platform holds a key position of power, it has a major role in the constitution of working conditions. Core issues in working conditions are information and power asymmetries in favour of platforms and clients, new forms of work control and influence on behaviour, the outsourcing of unpaid work onto workers, self-employment as well as virtuality (especially in remote platform work). Although most of the workers do not rely on income generated in platform work, bad working conditions are still an issue in wide areas.

For example, Berg (2016) concludes in her study on microtask workers that most of them

“are nonetheless frustrated with the low level of pay, the lack of a reliable and steady source of work, the unresponsiveness of platforms to their concerns and the poor, and at times abusive, relationship with requesters” (p. 18).

Nevertheless, most workers seem to be fairly content with their engagement in platform work (Lepanjuuri/Wishart/Cornick 2018; Manyika et al. 2016).

In summary, we find that motivation structures highly depend on the level of economic dependency of workers as well as the type of platform work. First, when economic dependency is low, workers can conduct platform work in a voluntary fashion for a few hours/week which in turn leads to the emphasis of intrinsic work motivations. Note that in remote platform work, the level of economic dependency is contingent to the geographical location of workers. Due to economic differences and skill arbitrage, the same amount of platform work may be far more profitable for platform workers in Asia or Africa than for platform workers in the US or Europe. As it is more likely that platform workers in these regions have higher levels of economic dependency on platform work, they may have more extrinsic work motivations. Second, different types of platform relate to different kinds of motivations. Platform workers doing freelance jobs or participate in creative contests and communities have different work experiences than platform workers delivering food. Accordingly,

creative freelancers have higher intrinsic motivations while food couriers have more extrinsic motivations.

Low levels of economic dependency also helps to understand why platform workers accept the often disadvantageous working conditions, such as low wages or (bogus) self-employment. Findings from Herr (2018a) for location-based platform work show for instance, that workers who had some source of financial support were more likely to accept casual conditions. By contrast, workers who were dependent on their platform income clearly stated problems with the working conditions, some eventually quitted the job (Herr 2017).

Given these findings, it is important to note that the tendency towards low economic dependency and intrinsic, task-based motivation structures as well as the often temporal character of platform work should not imply that there is no need for regulation. In fact, these patterns underline that platforms' business models aim to absorb excess/idle capacities on labour markets to subsequently exploit them in unregulated environments. This leads to new forms of conflict and challenges, which underline the necessity for improving work conditions in platform work – especially for those who depend on it to make a living.

Infobox 3: Summary of core themes and findings of chapter 'Worker motivations, working conditions and income'

Core motivations to conduct remote platform work are intrinsic motives, creativity, job experience and skill development and circumventing hiring barriers. In location-based platform work, the core motivation is supplementary income. Overall, **platform workers emphasize the high level of flexibility (and autonomy)** in platform work. The motivation structures of platform workers depend on

- the level of economic dependency (generating supplementary income vs. full dependency on platform work)
- the type of platform work (e.g. creative platform work facilitates intrinsic motivation vs. delivering food facilitates extrinsic motivation)

Core issues in working conditions of platform workers are

- information and power asymmetries (platforms withholding information about clients or algorithms distributing tasks)
- new forms of work control and influence on behaviour (screenshots of platform worker's screens to track their progress; reputation systems; metric-based gamification and nudging)

- outsourcing of unpaid (overhead) costs (for searching tasks, insurances, work equipment, etc.)
- self-employment (limited access to social protection)
- virtuality (in remote platform work: invisibility, social isolation and decontextualisation)

In terms of income levels and economic relevance of platform work we find that **the majority of platform workers generate supplementary income via platforms**. Those relying on platform work as a primary source of income suffer most from the disadvantages of platform work. Because platform workers in remote platform work can offer their skills to a higher price than on local labour markets (skill arbitrage), there is a higher importance of platform work in low-wage countries.

Worker influence on work platforms

Given numerous issues in the working conditions in platform work, workers, unions, media and governments increasingly raise the issue of participation and influence of platform workers on platforms. Participation can be defined as any type of mechanism, structure or practice (on platform level or on institutional level), which provides crowd workers with the opportunity to express an opinion or participate in decision-making (Lavelle/Gunnigle/McDonnell 2010). Platform work in general lacks legal regulation (see next chapter). As a result, institutionalized participation channels founded on a legal basis (e.g., a works council) do not exist on commercial platforms in a structural fashion (despite some notable, platform-worker led examples exist on Foodora and Delivery Hero, as we will show below).

Initiatives to increase worker influence on platforms basically divide into two types: initiatives external to platforms, aiming to integrate the opinions and interests into the platforms from the outside, and initiatives taking place directly on platforms themselves. In the following, we outline different initiatives external to platforms and on platforms and give representative examples for each.

Influence and participation external to platforms

The majority of initiatives to extend the influence of workers on platforms are situated external to platforms. External initiatives can be divided into grassroots and union led/-supported initiatives. Grassroots initiatives result of platform workers or grass-roots movements and usually try to influence working conditions on platforms via direct action. Union led/-supported initiatives are backed by established unions and try to influence platform actions on an institutional level. In the following, we detail out some examples for grassroots and union led/-supported initiatives for remote and location-based platform work.

Grassroots initiatives

Grassroots initiatives include actions originating from the side of platform workers to directly address (issues on) platforms. In remote platform work, grassroots initiatives mainly include online forums and tools. The most famous examples are related to Amazon Mechanical Turk (AMT).

As mentioned before, research on AMT has shown fundamental information asymmetries that result from one-sided evaluation systems to the favour of clients (Requesters). An ecosystem of grassroots initiatives aims to balance the information asymmetries by providing opportunities for platform workers (Turkers) to express and discuss their needs and interests in a public online space. These include worker-moderated information and discussion channels such as TurkerNation, mTurk Grind, mturk Wiki or channels in social media (as on reddit), mainly serving as information source for Turkers. An acclaimed initiative related to AMT is Turkopticon (Irani & Silberman, 2013). Turkopticon provides a browser extension adding a review system to the interface of AMT – a function not present for Turkers on the platform. This enables Turkers to publically evaluate Requesters which in turn balances power and information asymmetries on the platform. Another example is Dymano (co-initiated by Lilly Irani), a platform to “support collective action in the AMT ecology” for “creating publics that are just large enough to take action – unities without unions.” (Salehi et al. 2015) The discussions on the platform have transformed in two campaigns: “Guidelines for Academic Requesters”, which are worker-generated guidelines for ethical research on AMT, and “Letter Writing Campaign”, in which Turkers sent e-mails directly to Jeff Bezos, containing details on Turkers’ personal lives, their work on AMT, and the difficulties they face to create a positive image of Turkers in the public eye.

In location-based platform labour, grassroots initiatives take the form of organizing within online communities. In the US, Uber and Lyft workers established an initiative called ‘App-based Drivers Association’ to urge platforms to improve working conditions⁹. Another interesting project is the ‘Transnational Food Platform Strike Map’¹⁰, mapping collective actions that took place in Europe until early 2018. Although not updated, it still provides a vivid picture of the situation in platform food delivery from the perspective of collective action. Initiatives in location-based platform labour also take the form of union-affiliated guilds or initiatives led by grassroots unions. Examples for union-affiliated guilds are Collectif des coursier-e-s/KoeriersKollektief in Belgium, the Plataforma Riders X Derechos BCN in Spain, the Italian Deliverance Milano or the Dutch Riders Union which lobby for better working conditions in the respective cities. Examples for a grassroots union initiatives are Deliverunion, a union for food couriers, led by Freie Arbeiterinnen- und Arbeiter-Union (FAU) in Berlin which currently facilitates the set-up of a works council

9 <https://www.abdaseattle.org/> (last accessed on 25 May, 2019).

10 http://umap.openstreetmap.fr/fr/map/transnational-food-platform-strike-map_182749#7/49.926/1.176 (last accessed on 25 May, 2019).

within Deliveroo (Vandaele 2018), the Independent Workers Union of Great Britain (IWGB) which supported Deliveroo workers in their protests outside the Deliveroo head office for preserving previous pay terms (Johnston/Land-Kazlauskas 2018) or rank-and-file unions such as the International Workers of the World (IWW) in the cities such as Bristol or Leeds.

Union-led or union-supported initiatives

Union-led initiatives denote projects where established unions support workers in engaging in direct action and/or facilitate political lobbying or collective bargaining. These initiatives mainly emphasize institutions to respective industrial relation systems, such as social dialogue and collective bargaining (Johnston/Land-Kazlauskas 2018; Vandaele 2018), predominantly aiming at changing the regulative environment to enforce platforms adapting their governance systems.

Direct action

An example for union(-backed) initiatives engaging in direct action in remote platform work is the initiative <http://faircrowd.work/>. The website was initiated by the German union IG Metall in cooperation with Austrian and Swedish unions and labour institutions (Harmon/Silberman 2018) and offers evaluations of the platforms' terms and conditions by legal experts as well as on the results of worker ratings. A quite similar initiative from Graham/Woodcock (2018), which is still in progress, intends to build a public platform certification system. Their scheme builds directly on the criteria of the Frankfurt Declaration on Platform-Based Work (see below). In location-based platform work, food courier workers have started initiatives throughout Europe some of which actively connected to established unions (or city governments) to support their cause. Examples are protests from platform workers in Switzerland, backed by the union Unia or a charter signed by the Riders Union Bologna, by three unions, the city and a local food delivery platform to provide minimum working standards on a voluntary basis. Another example can be found in Vienna, where Foodora delivery couriers have set up a works council with the support of the Vida union, an Austrian union for transport and services. In Germany, food delivery couriers across various cities replicated this initiative supported by the Gewerkschaft Nahrung-Genuss-Gaststätten (Food, Beverages and Catering Union) (Degner/Kocher

2018).¹¹ Recently Uber drivers went on strike with the support of a transport union. The aim was to protest against their low income and to achieve an increase in the commission fee (Erickson 2018). In September 2018, Uber Eats workers protested in London against pay cuts and demanded a 5£ minimum pay per delivery (Herr 2018b).

Political lobbying

Political lobbying usually resides on a symbolic or voluntary agreement between platforms and labour-side actors and usually covers recommendations for platforms. One example for lobbying covering both forms of platform labour is the Frankfurt Declaration on Platform-Based Work, an Austrian-German-Swedish union initiative. The declaration aims to set the demands for socially sustainable working conditions on digital labour platforms and was signed by a range of international experts and (grassroots) unions. Another lobbying initiative is a charter being signed between the Riders Union Bologna, the three main trade union confederations, the centre-left city council and the local food delivery platforms Sgnam and MyMenu. The charter, labelled Charter of fundamental rights of digital work in an urban context (*Carta dei diritti fondamentali del lavoro digitale nel contesto urbano*), sets a framework of minimum standards covering remuneration, working time and insurance cover to be respected by the signatory platforms on a voluntary basis. At European level, the European Trade Union Confederation (ETUC) has taken the initiative to foster a social dialogue with platforms. They held a ‘sharers and workers’ conference in January 2018 and lobby European decision-making institutions for setting up a regulatory framework governing the platform economy (Vandaele, 2018).

Collective bargaining

The third category of union-backed initiatives aims at collective bargaining. For instance, the Danish union 3F has concluded the world’s first-ever collective agreement in the platform economy with Hilfr.dk, a platform for cleaning services in private homes (Vandaele, 2018). Collective bargaining, however, has not made much progress in platform labour contexts. Johnston/Land-Kazlauskas (2018) contend four factors to hinder “fully fledged” collective bargaining in platform labour: First, platform labour is a quite new phenomenon, which suggests that collective bargaining has yet to be fully established in line with traditional definitions. Second, platform workers are only of marginal importance since they

¹¹ Founding a works council in these cases was possible as the platforms employ a small share of the riders for scheduling reasons. Employed riders were up for the election.

represent, despite extensive media coverage, only a small proportion of the overall workforce. Third, platforms (like Uber) have actively resisted collective bargaining and unionization, framing it as inconsistent with their business model and worker flexibility. Fourth, collective bargaining undertaken by independent contractors can be considered as contrary to or even illegal according to competition statutes and anti-trust laws.

In terms of regulation, a recent success in Europe was reached in the case of Delivery Hero, a parent group, holding, among others, Foodora. After Delivery Hero decided to adopt the legal form of a *Societas Europaea* (SE), this status legally obliged them to provide employee involvement in the constitution and the life of the SE, through information, consultation and participation procedures. As a result, in April 2018 Delivery Hero signed an agreement with the European Federation of Food, Agriculture and Tourism Trade (EFFAT) unions to establish a cross-border works council and employee participation in its supervisory board (Vandaele 2018). As a SE can only be formally established only after clarifying the involvement of employees, this result was facilitated by a decision of the Landgericht Berlin in March 2018, stating Delivery Hero comes under German co-determination laws (Hinck 2018).

Influence and participation on platforms

Platform cooperatives and democratic governance

As we have outlined above, we propose to understand platforms as providing standards for governing the exchange relationships between clients and workers and platforms themselves and enable particular actions for all parties. Ideas facilitating platform worker participation directly on platforms mainly address the governance systems of platforms. Among these, the idea of platform cooperatives is the most developed. In tandem with fundamental principles of cooperatives (Cheney et al. 2014; Esim/Katajamaki 2017), platform cooperatives are platforms that distribute ownership and management of the enterprise to its participants. As a result, they are collectively owned and governed by the people who depend on platforms and deliver the underlying service by contributing labour, time, skills, and/or assets (Scholz 2016; Sutton 2016).

According to Scholz (2016), the concept of platform cooperativism is based on three parts: First, it is about cloning the technological heart of platforms while adhering to democratic values; second, platforms can be owned and operated by inventive unions, cities, and various other forms of cooperatives, ranging from multi-stakeholder and worker-owned co-

ops to producer-owned platform cooperatives; third, platform cooperativism is built on the reframing of concepts like innovation and efficiency with an eye on benefiting all, and just profits for a few. Drawing on support from the Google research foundation, they already work on a platform cooperative ‘starter kit’ (Platform-Coop 2018).

A recent example for a ‘pure’ platform coop is situated in Barcelona. Departing from the campaign ‘RidersXDerechos’ (Riders4Rights)¹², food delivery platform workers started a crowdfunding campaign to gain financial support for their idea of a food delivery coop called ‘Mensakas’¹³. Mensakas follows the idea of self-organization and the maintenance of a solidary business model, where the fight against precarious work relationships is a top priority. The idea is to establish a food delivery platform where all workers are employed, rather than freelancers. By August 10, 2018 the project could reach its minimum funding goal. As a result, the initiators will be able to implement the coop in the nearer future¹⁴.

Participation and democratic governance on platforms

Next to the idea cooperatives, platforms themselves can offer opportunities for workers to participate and take influence. While many platforms do not encourage interpersonal and face-to-face contact among workers, thereby limiting the opportunities of collective action among platform workers (Choudary 2018), some platforms voluntarily offer participation mechanisms to their workers. Deamo, an experimental microtask marketplace run by researchers at the Stanford University for instance, is run on a balanced governance system in which three researchers, three clients and three crowd workers determine the direction of the platform (Gaikwad et al. 2017). Apart from integrating platform workers into their governance systems, platforms also may provide participation opportunities in a more informal manner.

A recent study from Gegenhuber/Ellmer/Scheba (2018), examining six German online labour platforms, reveals that remote platform workers have numerous opportunities to access and receive information to and/or report on task-related contents and issues related to platform-wide work organization. However, there are far fewer opportunities to discuss or vote on issues on or with platforms, especially in terms of platform-wide work organization as well as strategic development. The

12 See <https://www.facebook.com/ridersxderechos/> (last accessed on 25 May, 2019).

13 See <https://twitter.com/ridersxderechos?lang=de> (last accessed on 25 May, 2019).

14 See <https://en.goteo.org/project/mensakas--app-de-menjar-a-domicili-responsable> (last accessed on 25 May, 2019).

authors hence conclude that platforms facilitate a functional character of worker participation. However, platforms are reluctant to use more powerful participation modes and influence in substantial topics that would facilitate a more democratic form of worker participation. Table 2 summarizes the findings how participation modes on work platforms relate to different tools, goals and best-practices.

Table 2: Participation modes on work platforms, related tools, goals and best-practices

Participation mode	Tools	Goal	Best-practice examples found
Inform	Platform, website, blog, newsletter, notifications, applications	Transparent communication on relevant corporate topics for platform workers	Earnings calculator
Report	Chats, contact forms, two-way evaluation systems, surveys	Communication channels for platform workers to report issues and improve working situation	Evaluation system by which platform workers can evaluate clients
Discuss	Project-related and/or platform-wide forums, blogs (and other social media channels)	Options for open discussions to facilitate collective opinion building	Combination of project-related and platform-wide forums
Vote	Voting tools	Integration of platform workers in organisational decision-making	n/a [authors propose a voting system found in a different context]

Source: based on Gegenhuber/Ellmer/Scheba (2018)

Summary and conclusion

Our analysis provides a record of a broad range of initiatives in Europe by which platform workers (try to) gain influence on platforms. These initiatives can be distinguished into grassroots initiatives, where actions originate from the side of platform workers to directly address platforms and union-led/-supported initiatives, where established unions support the actions of platform workers on different levels. Union-led/-supported initiatives mainly address institutional settings with the aim to change the regulative environment in which platforms operate. There is a range of successful initiatives. In terms of remote platform work, for instance, Turkopticon is a still vividly used tool throughout the Turker community and provides valuable information for Turkers to identify shady employers. In terms of location-based platform labour, success stories such as the establishment of works councils, etc. points to the strong potentials of legally anchored influence and regulation in this type of platform labour compared to remote platform labour.

Many initiatives, however, tend to remain on a rather symbolic level as they remain limited to a published document or website. As Vandaele (2018) argues, the bargaining power of platform workers varies according to different types of platform work. He differentiates into institutional and structural bargaining power. Due to the weak and non-existent institutional settings, the framing of platform workers as independent contractors and the missing right to unionize and collective bargaining (see next chapter), platform workers have only weak to no institutional power. Structural power (Silver 2003) differentiates into marketplace bargaining power and workplace bargaining power. Marketplace bargaining power results from the desirability of workers skills to the employer, the degree of unemployment in general and to the extent workers can live from non-wage income sources; workplace bargaining power results from the workers strategic position in a distribution or production process which influences their capacity to disrupt business through direct action. Based on this framework, Vandaele (2018) assesses power resources for four types of platform labour. Low-skill online platform workers have low marketplace and workplace bargaining power. High-skilled online workers have high marketplace bargaining power in the global South due to skill arbitrage since this group can sent higher prices than on location-based labour markets but also lacks workplace bargaining power. Location-based platform labour providing personal social or physical services, too, have both low marketplace and workplace bargaining power. Location-based platform workers, such as those doing transport services, have low marketplace power but high workplace bargaining power.

It is important to acknowledge the limited willingness of both platforms and platform workers in terms of influence and participation. This particularly pertains to remote platform work. Platforms basically exacerbate participation, as the majority do not provide opportunities for social network creation between workers (Choudary 2018). There is also limited willingness on the side of platform workers. For instance, a study of Wang et al. (2017) shows that the main reason why Turkers organize in online groups and forums (Turker Nation, MTurk Crowd, MTurkGrind, MTurk Forum) is primarily to "find good HITs", instead of unionizing to get better paid. As a result, participation is positively associated with higher income. These results resonate with a survey of Turkers by Ellmer (2016) about Turkopticon showing that Turkers reason their participation in Turkopticon only in a restrained manner with motives related to solidarity. This suggests that participation in Turker communities might lead to better working conditions on an individual level, but that it is difficult to organize collectives via online forums.

There are also limitations of online tools in organizing platform worker collectives. Complex discussions are quite difficult to conduct in digital contexts due to limited social presence and media richness (Gegenhuber/Ellmer/Scheba 2018). The moderators of the Dynamo initiative (see above), for instance, report a need to constantly resolving "stalling" and "friction" in online discussions (Salehi et al. 2015). However, platforms, such as innovation platforms, are based on mutual feedback from platformworkers. These communication opportunities facilitate participation since crowd workers can get in contact with each other very easily. On the other hand, digital communication tools may facilitate certain forms of participation more than others.

In location-based work, organizing works different due to the bounded geographical space platforms cover with their services (e.g., cities). Usually, workers use digital technologies to schedule face-to-face meetings. Vandaele (2018), in reflecting successful initiatives of location-based platform workers, argues that "mass self-communication networks", such as worker-driven messaging apps with group chats facilitate mobilization and provide means to forge a shared identity. The combination of entering alliances with unions and cities and gaining attention in public discourse can explain their success to a large extent because they enable platform workers to leverage different power resources in the confrontations.

Infobox 4: Summary of core themes and findings of chapter 'Worker influence on work platforms'

Recently, research devoted to **issues of workplace democracy and participation of platform workers**. Initiatives **external to platforms** include

- **Grassroots initiatives** are initiated by workers and operate with direct action (online organizing, charters, ...)
- **Union-led initiatives** are backed by established unions and aim at the institutional and regulatory level (lobbying, collective bargaining, ...)

Opportunities for platform workers **directly on platforms** include

- **Voluntary organized** participation systems by platforms
- Structural integration of platform workers in platform **governance systems**; examples are Deamo or platform cooperatives

The extent of influence is dependent on different **power resources**.

- **Institutional power** (in general very low in platform work due to legal status as self-employed)
- **Structural power**, including marketplace bargaining power and workplace bargaining power
- **Associational power**, i.e., the support by other actors, such as unions (see union-led/-supported initiatives)

The more complex a task, the more marketplace bargaining power platform workers have. The more locally dependent a task is the more workplace bargaining power platform workers have. Power resources depend on task complexity and the extent to which a task is bound to a specific location.

It is important to acknowledge the **limitations of worker influence in the context of digital work platforms**.

- Limitations **on the side of platforms** include resource constraints, competencies, and their general will due to their bargaining power
- Limitations **on the side of platform workers** include their heterogeneity of interest as well as their general will to participate
- Limitations also concern the **constraints of digital communication tools** for forming interest online

Generally, the extent of influence in location-based forms of platform work is much higher as compared to remote forms: Location-based platform workers can influence platforms more directly as the platform operates in limited space and hence depends on local labour supply.

Regulation of platform work

In the final chapter, we briefly summarize some core debates and themes on regulatory level presenting arguments for improving conditions of platform work in the context of labour law¹⁵. In general, platform work shares several features with other contingent and non-standard forms of employment (De Stefano 2016). Compared to these forms, platform work remains widely under-regulated and is hence of great interest for labour law scholars and regulators (Stewart/Stanford 2017).

We identified two core concerns in regulatory discussions on platform work: First, the legal classification and status of platform workers, highlighting the fact that the majority of platform workers are (incorrectly) working as self-employed individual contractors. Second, and closely related to classification issues, the regulation of minimum wage and the mitigation of platform monopolies.

Worker classification and status

The main regulatory issue in the debate on platform work is the legal status of platform workers. Platform workers are usually contracted as freelancers and thus self-employed (Donovan/Bradley/Shimabukuro 2016; Hensel et al. 2016; Prassl 2018; Prassl/Risak 2016; Waas et al. 2017). Worker classification is an important issue, as the self-employed status offers competitive advantages for platforms. When traditional firms employ people, they have to apply labour law and face concomitant responsibilities and costs in terms of minimum wage regulations, paid holiday, paid overtime, sick leaves and contributions to other public social benefits (e.g., unemployment/health insurance) (Shapiro 2017; Todolí-Signes 2017). Platforms evade such costs by classifying workers as freelancers to leverage regulatory arbitrage (Prassl 2018), allowing platforms to provide services at a lower price than under regulation. This classification, however, comes with a range of adverse implications on many levels, as we will detail out in the following.

¹⁵ Note that a detailed legal analysis is beyond the scope of this paper. We simply discern critical regulative issues from the literature.

Adverse implications of legal (mis)classifications

As outlined earlier (see chapter on working conditions), the self-employed status of workers has several adverse implications for platform workers, such as the limited access to labour protections and social security options (Codagnone/Abadie/Biagi 2016; European Commission 2018). Misclassification, however, also has adverse legal implications and externalities.

Concerning the legal level, current antitrust laws deny self-employed the freedom of collective bargaining, showing that classification affects platform worker's access to fundamental labour rights (De Stefano/Aloisi 2018; Lao 2018). According to antitrust laws, collective bargaining of self-employed platform workers would be classified as illegal price agreements which could have a cartel-like character. However, there are several arguments against this classification, including that many platform workers depend on the platform's price politics and cannot negotiate/adapt their individual pricing (as normal self-employed would be able to, see Kilhoffer/Lenaerts/Beblavý 2017). Lao (2018) hence argues for an extension of antitrust labour exemptions for platform workers to enable collective negotiations with platforms over compensation and benefits without exposure to antitrust liability (also Degner/Kocher 2018).

Concerning adverse externalities, critics argue that platform business models affect government tax revenues. For platform taxi drivers, Zoepf et al. (2018) show that operating expenses reduce the real driver profit to the extent that drivers can declare a loss on their taxes. If they can completely capitalize on these losses for tax purposes, almost \$5 billion dollars in annual ride-hailing driver profit remain untaxed. According to the authors, this untaxed profit represents a social subsidy for these types of location-based platforms.

Others point to negative externalities of misclassification in terms of insurance and liability. Kilhoffer/Lenaerts/Beblavý (2017) mention a case in which an Uber driver killed a six year old child in an accident. The driver was under-insured and Uber attorneys claimed no liability as the driver was classified as an independent contractor. A related issue is that Uber drivers do not have maximum driving times which may lead to additional accidents by exhausted drivers (Kilhoffer/Lenaerts/Beblavý 2017). Putting this in a bigger picture we see that platform business models do not only affect platform workers, but also a society as a whole, pointing to further issues of economic and social responsibilities of platforms.

Suggestions for platform worker (re-)classifications

Given these adverse implications due to legal classification, researchers in labour law criticize the self-employment status of the majority of platform workers. In core, they argue that a self-employed status inaccurately reflects the actual nature of the work relationship (Forde et al. 2017). In fact, platforms exert a large extent of control over the labour processes, i.e., how work is done, paid and organised (Dullinger 2017; Prassl/Risak 2016). From the perspective of regulators and researchers in labour law, this extent of control founds the basis to classify platform workers as employees of platforms.

The European Commission (2016) proposes three criteria (subordination link, nature of work and remuneration) to scrutinize whether the factual reality of a work relationship resembles an actual employment relationship. Applying these criteria is sometimes difficult when confronted with the realities of platform work. For instance, authors argue that the existence of a subordination link can be found in the extensive monitoring practices for ratings (Waas et al. 2017) or through the setting of shifts (Dullinger 2017). Todolí-Signes (2017) argue that a direct instruction to a worker cannot be a reliable indicator of an employment relationship. The nature of work requires workers to pursue a factual economic activity that is more than purely marginal, to fit with the notion of being an employee (European Commission 2016). With regards to the gig-like remuneration structures of platform work this could cause difficulties, since the piece-meal payments in platform labour market activities are barely comparable with the suggested time and wage thresholds by the Commission.

As a result, establishing a third legal category for platform workers entered stage recently (Harris/Krueger 2015). Despite a legal category for dependent self-employed workers already exists in many European countries (Pedersini/Coletto 2010), including Germany, having the category of a 'employee-similar person' ('arbeitnehmerähnliche Person'), neither a classification as self-employed nor employed would adequately account for the situation of platform workers. Harris/Krueger (2015) hence promote a third category, termed 'dependent contractor' or 'independent worker', to protect and extend the social compact between workers and employers, and reduce the legal uncertainty and costs in current platform work relationships. In this vein, a UK government commissioned report which examined the possibility of introducing a dependent-contractor category (Taylor et al. 2017). Prassl/Risak (2016) suggests a different approach by forwarding a functional conceptualisation of the employer. An employer exercises five functions: the inception

and termination of the employment relationship, receiving labour and its fruits, providing work and pay, and managing the enterprise internally and externally. In many forms of platform work, some employer functions may be executed by platforms, some by clients. Drawing from legal arguments related to multi-party arrangements in subcontracted labour, they suggest that a combination/chain of multiple employers can in summary exert all employer functions and hence be an employing entity – which would in turn classify platform workers as employees. Finally, Stewart/Stanford (2017) discuss the radical legal approach to establish rights for *workers*, not just for employees. This would guarantee protection to anyone performing work regardless of the precise work relationship to the intermediary. Because in the end, tasks on work platforms are jobs and need to be fully recognised as jobs (De Stefano 2016).

Minimum wage and worker independence

Regulation also concerns the issue of wages in platform work. Minimum wage is an issue related to worker classification. Since the majority of platform workers are contracted as independent contractors (see above), hardly any minimum wage regulation applies to them. Cherry (2009) argues in favour of a minimum wage for virtual work, because regardless “... of where the work occurs, it must be acknowledged that some basic protections are needed” (p. 1077). In this line, Silberman (2017) recommends that platforms should set a pay that at least complies with minimum wage regulations in the worker’s location. This minimum wage could preferably be extended to a median local wage.

Regulatory suggestions also aim at reducing the dependency of platform workers from single platforms. Most importantly in these regards, platform workers should be enabled to transfer their reputation/portfolio to another platform for being able to start at a level according to their already gained experiences. When workers can easily switch platforms, this could reduce the network effects and concomitant bargaining power platforms leverage, reduce the creation of oligopolies by facilitating competition between platforms and augment the bargaining power of crowd workers (Choudary 2018; De Stefano 2016; Todolí-Signes 2017). As known from ride-hailing service platforms, workers run multiple accounts on different platforms on several phones simultaneously and instantly switch platforms when conditions fall below a desired level (Möhlmann/Zalmanson 2017). Such mechanisms, let alone reputation transfer, do not exist on a structural level so far.

Another important precondition for worker independence is transparent information about work and working conditions on platforms (Gegenhuber/Ellmer/Scheba 2018). Recently, the European Commission (2017) has adopted a proposal for a new Directive for more transparent and predictable working conditions in non-standard forms of employment across the EU— including platform work. The directive aims to complement and modernise existing obligations to inform each worker of his or her working conditions, in particular by obliging employers to provide information on training opportunities, arrangements and remuneration for overtime, information on working time and social security institutions where contributions are paid.

Summary and conclusion

As platform work remains largely under-regulated, several proponents argue for proactive labour regulation in this domain. Debates on labour regulation within the platform economy predominantly focus on the status of the work relationship and the related issue of legal classification and status of platform work/ers. The majority of platform workers are contracted as self-employed freelancers, which might not be an accurate reflection of the actual work reality. The three criteria established by the European Commission (2016) to assess an employment relationship is ill-suited to grasp work relationships in the platform economy. To circumvent that, establishing a third category ('dependent contractor', 'independent worker') is a prominent suggestion in the debate (Harris/Krueger 2015; Taylor et al. 2017), while also being criticized of not solving the problem at hand (Prassl/Risak 2016). The most radical option would be the provision of protections to anyone performing work regardless of the precise form of the work relationship to the intermediary (Steward/Stanford 2017).

An important, yet open question related to regulation is what legal framework can offer the most appropriate standards for working conditions. While in location-based platform work, EU labour standards as well as labour standards in respective countries may provide appropriate standards, this issue is far more complex in remote platform work. Given the globally dispersed nature of remote platform work, as well as the possibilities of arbitrage that come with it, the most important issue is whether remote platform workers should be paid according to the labour standards of their country or the one of the platform's/their client's location. This question is particularly difficult to answer in the context of remote platform work, where workers can fulfil tasks from any place in the world. Take for instance AMT, where workers in India are carrying out jobs for US clients. What are fair and appropriate standards in such a constellation?

In summary, regulation debates concern the access of fundamental labour rights for platform workers (De Stefano/Aloisi 2018) as well as related debates on the very nature of work relationships established by platforms. As such, the discussion shows that platform work is certainly challenging existing labour institutions. Regulatory debates also point to fundamental responsibilities of platforms in a society and the role they should play in an economic system.

Infobox 5: Summary of core themes and findings of chapter 'Regulation of platform work'

Platform workers are **usually contracted as independent contractors and thus self-employed**. This classification and status allows platforms offering services at a low price. Classification as independent contractors is closely connected to **adverse implications** (lacking access to social security, exposure to antitrust laws, economic externalities)

Suggestion for alternative classifications in the literature are:

- Defining a third legal category between employee and self-employed
- Functional conceptualization of employer: combination of platforms and clients as employing entities
- Offering protections to anyone performing paid work independently from actual employment relationship

Concluding remarks

As we have shown in the chapters throughout this paper, the conditions of platform work have become subject to numerous worker/union actions as well as academic and regulatory debates within different domains. In this final chapter, we sum up the most important findings related to current debates and approaches for improving the conditions of platform work in Europe.

As current figures indicate, platform work is a marginal phenomenon in European labour markets—only few people engage in platform work (compared to the average of adult population in European countries), only a few economically depend on it. The most accurate numbers suggest that about 2 % of the average adult population works for more than 20 hours on platforms (Pesole et al. 2018), earning more than a half of their monthly income (including platforms such as Airbnb). Platform work is, however, not properly depicted in public statistics. To provide a basis for improving the conditions in platform work the public sphere needs to pay more attention to the phenomenon. A recent publication of the U.S. Bureau of Labor Statistics (2018) indicates efforts to develop valid methods for measuring and representing the share of platform work in US labour markets. Similar efforts would be desirable for European labour markets. Official and accessible data sets could harmonize the debates on platform work and provide an important foundation for policy crafting. This also concerns data from platforms: Registration numbers of workers and clients, their activity levels as well as numbers on details on work processes, could augment the statistical picture and provide a basis for more agile and decentralized regulatory structures (Choudary 2018).

Even though platform work remains a marginal phenomenon to date, recent numbers indicate that both remote and location-based forms of platform work are growing. Due to several arbitrage mechanisms, we contend the increasing volume in remote platform labour will most probably facilitate a growth of platform work in labour markets in the global south, more specifically in the regions of Asia and sub-Saharan Africa, where currently the major share of remote platform work is accomplished. This trend will continue to put pressure on workers operating in respective domains within the European Union. Due to its location-dependence, we contend a growth in location-based platform work will most probably affect local labour markets throughout the globe, including those in European countries. This may further depend on regulation levels in single countries and/or regions/cities within countries.

When aiming at improving the conditions of platform workers, it is also important to understand the motivations of platform workers as well

as their working condition against the backdrop of the type of excess capacity unleashed (e.g. hobbyists vs. working to make a living on a platform) and the type of platform work (e.g. highly creative innovation work vs. micro-tasks). Compared to traditional employment, the working conditions in platform work are rather unfavourable, even though most of the workers state to be quite constant with their contribution to platforms. We see a strong interplay between the motivations of platform workers and the conditions of platform work: If workers are not dependent on the platform income they may accept unfavourable economic conditions as long as other parts of their work experience are in line with their needs. However, the low economic dependency and the temporary or supplementary role should not imply that there is no need for regulation. In fact, these patterns underline that platforms' business models tap into idle excess capacities in ideally unregulated environments which leads to new forms of conflict and challenges, most famously exemplified by the flood of lawsuits against major platforms. Hence, sooner or later, some form of regulation may be necessary – especially for those who depend on platform work (cf. evidence on the positive correlations between local unemployment levels and platform work).

This picture leaves us with a twofold reasoning regarding the future development of platform work: On the one hand, the quantitative significance is limited by the relatively small amount of workers which rely on online labour as their primary source of income. On the other hand, it proves that income is by far not the only reason to engage in work, especially when another job already generates that income. Moreover, people tend to engage in second jobs in order to fill vacancies within their schedules. This forwards the capitalization of life (“Landnahme”, cf. Bauer/Gegenhuber 2017; Dörre 2009), as well as the scale of inequality within the world of work.

Platform work has become subject to a range of actions taken from labour side. There are several grassroots initiatives, led by workers or grass-roots unions as well as union-led/-supported initiatives. While grassroots initiatives aim at instantly improving working conditions on a particular platform or region, union-led/-supported initiatives focus on the institutional level to integrate improvements in working conditions in a more structural manner. Despite a range of successful initiatives, many of them remain on a symbolic and voluntary level which cannot guarantee an improvement of working conditions in a sustainable fashion. This again calls for actions of regulators to set the rules of the game.

With regards to regulation, we summarized some core issues and suggestions. The most central regulatory issue is the legal status of platform workers. As platform workers are self-employed in most cases,

platforms can leverage a competitive advantage compared to traditional businesses as it significantly reduces their labour costs (Todolí-Signes 2017). The criteria of the European Commission (2016) to access employment status hardly fit with the working realities on platforms. The literature suggests, that the categorization of most platform workers as self-employed is incorrect (Donovan/Bradley/Shimabukuro 2016; Forde et al. 2017; Waas et al. 2017). To solve this issue, several options are on the table ranging from a clearer definition of a platform worker category (Harris/Krueger 2015; Prassl/Risak 2016; Taylor et al. 2017) to universal social protection regardless of the precise form of the work relationship (Stewart/Stanford 2017). Apart from the question of worker status, reputation transferability would reduce the dependency of workers to particular platforms (Choudary 2018) and break up platform monopolies. With regard to the debate on minimum wage for platform work, the discussion appears especially complex in remote platform work, where workers can work from any place in the world. Such a setting bears the question of what is 'economically appropriate' in a global context. For instance, a \$4 hourly wage might be appropriate for a person working on AMT in Asia but not for a person working on AMT in Western Europe.

Epilogue

In this paper, we gave an overview of current debates and approaches for improving the conditions of platform work in Europe. While the focus here was shedding light on the adverse implications for workers, we certainly subscribe to the fact that platform work has a range of positive sides for workers (e.g. easy access to work or flexibility). We also wish to state that platforms should not underestimate that improving conditions of platform work is compatible with their interests too. Good working conditions can signal respect and facilitate identification with a platform which can positively affect platform workers' engagement and activity level and could help to attract engaged platform workers (Boons/Stam/Barkema 2015; Kuhn/Maleki 2017).

We want to close with a recent example that shows what happens *when independent contractors become employees*. In the course of a legal change in California, cannabis delivery workers had to be classified as employees by state law to ensure the product being handled by trained people. As employees, former independent workers now receive labour protections, overtime pay, predictable working hours; the company now also provides vehicles for deliveries to them. While this reclassification also had some downsides for workers (especially in terms of flexible scheduling) companies and workers welcomed the new situation as it had a lot of favourable outcomes for both parties. This example demonstrates that a regulated yet flexible and scalable business model is possible. As Semuels (2018) concludes her article:

“Uber alone was valued at \$72 billion earlier this year. Those companies complain that their business model wouldn't work if they made workers employees, yet other companies have shown that it can be done.” (online)

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A growing body of literature seeks to understand the conditions and consequences of platform work for platform workers and society at large. This study takes stock of current literature on platform work in Europe, discerns central debates (terms and definitions, relevance and diffusion, worker motivations and working conditions) and synthesizes knowledge on approaches for improving platform worker's conditions at different levels (worker, platform and regulatory level).
