25. With or without algorithms: managing the self-employed in the Danish platform economy

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INTRODUCTION

> It is a question of who is responsible – us or the customers. I have very little control with our cleaners during working hours and that is the great freedom in the platform economy. But this also makes it difficult to follow up. (Manager, Hilfr, cleaning platform)

Digital labour platforms such as Uber, which coordinate tasks between customers and workers through an app-based digital infrastructure, have recently sparked much academic and political debate,[1,2] particularly on the question of employer responsibilities (Vallas and Schor, 2020). A central concern in these debates is that many platforms operate with the self-employed as their main workforce in order to curb the costs of wages, social benefits and management, thus abrogating responsibilities and shifting economic risks to the workers in order to scale their business and gain a competitive edge (Steinberger, 2018; Benassi and Kornelakis, 2020).

Therefore, many platforms do not consider themselves employers in a traditional sense and often do without both traditional management practices relating to bureaucratic and technical control measures, and the presence of human managers (Prassl, 2018; Edwards, 1979). Ample research shows that management on digital labour platforms often takes a different shape: managers rely on algorithms informed by ratings and customer behaviour as important tools to remotely distribute work tasks and monitor the performance of platform workers through algorithm-based decision-making systems (Adams-Prassl, 2019; Möhlmann et al., 2021). However, how the management of self-employed workers on platforms genuinely unfolds in practice remains unclear and less researched (Duggan et al., 2020; Meijerink et al., 2021).

This chapter addresses this literature gap and offers a fresh perspective on the management of self-employed workers in the platform economy, including the challenges and possibilities management may entail from an employer/platform perspective. Our main research question is: *How do digital labour platforms utilise algorithmic and traditional management practices when managing self-employed workers – and why?*

We approach our research questions through illustrative in-depth case studies of three digital labour platforms, Wolt, Hilfr and Voocali, which all operate in Denmark but facilitate very different services. Wolt and Hilfr, a food delivery and a cleaning platform, respectively, facilitate *gig work*: low-skilled, on-site, short-duration tasks. Voocali, a platform for interpretation services, facilitates *freelance work*: high-skilled, on-site/remote, long-duration tasks. We focus on the management of the mainly self-employed platform workers conducting the tasks facilitated by the platforms (i.e. food delivery, cleaning and interpretation tasks), which, for instance, exclude in-house support workers and software developers. Most self-employed platform workers are so-called solo self-employed, as platforms typically facilitate tasks that workers perform individually (Bögenhold et al., 2017). Apart from a small proportion of employed platform workers at Hilfr, we include various subcategories of the self-employed,

such as solo, bogus and genuinely self-employed, to capture the diversity of self-employed platform workers in our analysis (Arum and Müller, 2009). Danish legislation, on the other hand, differentiates between only two distinct categories with respect to individual employment status: employed or self-employed (Kristiansen, 2020).

Analytically, we draw on concepts from the literature on algorithmic management and labour law to capture and discuss management practices in the specific platform business models. From this analysis, we develop two tentative hypotheses: (1) In line with the literature, we expect the platforms to mainly use algorithmic management practices for *instructions, working time* and *control*. (2) We posit that the platforms utilise traditional management practices for *hiring, dismissals* and *rules of conduct*. Our analysis thereby contributes to the discussions of management on labour platforms, which we relate to the EU's proposed directive on platform work in the discussion of our findings.

The chapter is structured as follows: First, we develop an analytical framework that draws from the literature on algorithmic management and labour law. Second, we present our methodology and interview data, and then analyse the management practices in use in our three case studies. Lastly, we discuss and compare our findings and draw main conclusions.

MANAGING THE SELF-EMPLOYED – A PLATFORM PERSPECTIVE: LITERATURE REVIEW AND KEY CONCEPTS

Within the platform literature, the business models of labour platforms have been conceptualised with respect to two core features: algorithmic management and self-employment (Duggan et al., 2020). Whereas formal management–employee relations tend to be limited within the platform economy because platform workers typically are treated as self-employed, labour platforms do often incorporate traditional human resource management (HRM) practices in their business models, primarily because they are vulnerable to recruitment and worker retention issues (Meijerink and Keegan, 2019; Ilsøe and Larsen, 2021). These practices vary significantly between platforms according to the type of services and tasks they mediate and the skill levels of platform workers (Jabagi et al., 2019).

However, the existing research rarely considers how and why platforms utilise algorithmic management and traditional management practices, or the opportunities and implications these practices have for the platforms (Benassi and Kornelakis, 2020; Ilsøe and Larsen, 2021). To analyse these management practices, we draw on the concepts of algorithmic management and managerial prerogatives from labour law, from which we advance two tentative hypotheses regarding platforms' use of these practices (Kellogg et al., 2020; Kristiansen, 2020).

Algorithmic Management

Within the platform literature, algorithmic management is considered a key feature in the business models of digital labour platforms, separating them from other types of labour-intensive businesses (De Stefano and Taes, 2021). Algorithmic management is typically conceptualised as a data-driven "evaluative infrastructure" and increasingly AI-based system used for automated decision-making to optimise work processes and the productivity of platform workers (Kornberger et al., 2017; Adams-Prassl, 2019). It has been suggested that platforms use algorithms for three management purposes, typically reflected in three concepts derived

from traditional management theory: *direction, evaluation* and *discipline* (Edwards, 1979; Kellogg et al., 2020). First, platforms use algorithms to direct platform workers by restricting and recommending how to perform the work. Second, labour platforms use algorithms to evaluate workers by reviewing their profiles and performance through app activity and customer ratings. Third, platforms use algorithms to discipline workers by nudging and adding elements of "gamification" to the app design that reward high-performing workers and replace low-performing workers (Rosenblat and Stark, 2016). However, some studies emphasise that platforms in many situations are unable to inspect and control worker behaviour, which opens the question of to what extent workers genuinely comply with the algorithms (Galière, 2020). Thus, the data-driven and quantitative nature of algorithms as tools to replace traditional management functions may vary between platforms and only relate to certain aspects of the work process that can be managed and measured with app data (Baiocco et al., 2022; Kusk and Bossen, 2022).

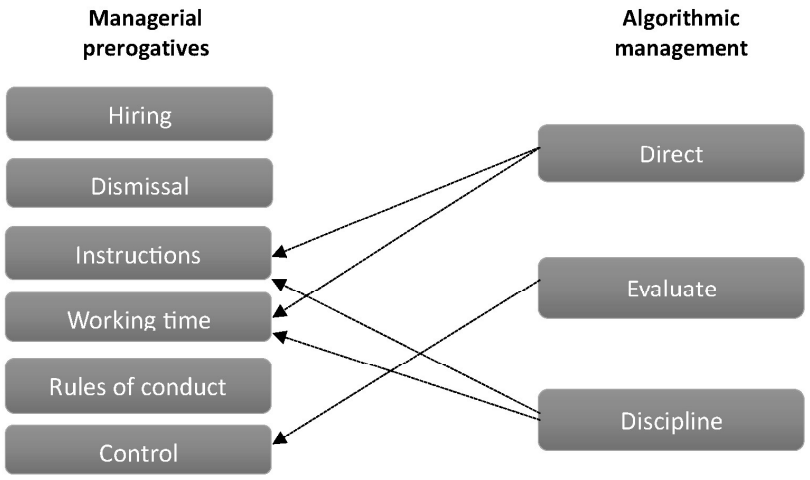
Traditional Management

The three concepts outlined by Kellogg and colleagues – direction, evaluation and discipline – reflect how platforms use algorithmic management to handle the work processes of platform workers. However, as suggested in much literature on contingent work, key managerial decisions also involve how platforms can adjust their self-employed workforce to shifting work functions and changing economic cycles in terms of their size (numerical flexibility) and composition (functional flexibility) (Atkinson, 1987; Cappelli and Neumark, 2004; Benassi and Kornelakis, 2020). We thus find it helpful to expand our analytical framework on management to include concepts other than the three aspects suggested in the literature on algorithmic management. In doing so, we draw on the six managerial prerogatives from Danish labour law that cover distinct management responsibilities in the traditional employer–employee relationship (Kristiansen, 2020). These prerogatives are the (a) hiring of employees, (b) dismissal of employees, (c) issuing of instructions for the execution of work, (d) determination of working time, (e) issuing of rules of conduct and (f) imposition of control measures.

The first two prerogatives concern the employer's management of the size and composition of the workforce (numerical and functional flexibility), the two subsequent relate to the employer's right to direct and organise work, and the last two deal with rules for worker behaviour and evaluation (Benassi and Kornelakis, 2020; Kristiansen, 2020). For the purposes of this chapter, we do not engage in the discussion on the legal employment status of platform workers, but instead use these managerial prerogatives as heuristic tools to inform our analysis of the potential variations in the use of algorithmic and traditional managerial practices across distinct types of labour platforms.

Interestingly, and in accordance with Kellogg and colleagues (2020), some of the prerogatives share similarities with the aforementioned concepts from the algorithmic management literature (see Table 25.1 for a conceptual overview). Platforms use algorithms to direct and discipline workers by distributing tasks, recommending when to work and using economic incentives to reward, for example, those who work during peak hours. As such, both concepts correspond to issuing instructions for the execution of work and working time (Rosenblat and Stark, 2016; Kellogg et al., 2020; Kristiansen, 2020). Likewise, algorithms are used to evaluate the workers, which corresponds to control measures, because platforms use ranking systems to monitor work performance (Kellogg et al., 2020). However, Kellogg and colleagues (2020)

do not address how algorithmic management relates to hiring, dismissals and rules of conduct. These prerogatives may be dominated by traditional management practices because the platforms need to comply with bureaucratic rules and formalised procedures for hiring workers (Edwards, 1979). Similarly, platform managers may need to examine specific situations when considering appropriate worker behaviour in order to make decisions on whether to remove individual worker profiles from the platform (ibid.).



Source: Inspired by conceptualizations developed by Kristiansen et al. 2020 and Kellogg et al. 2020.

Figure 25.1 Managerial prerogatives and algorithmic management practices

Tentative Hypotheses

Following our brief literature review, we developed two tentative hypotheses as to when platforms use algorithmic and traditional management practices, respectively:

(1) We expect platforms to use algorithmic management practices for *instructions*, *working time* and *control* to handle work processes on the platform.
(2) We posit that the platforms use traditional management practices for *hiring*, *dismissal* and *rules of conduct* to adjust the size and composition of the workforce (numerical and functional flexibility), and to examine whether worker behaviour is in conflict with rules of conduct.

CASES, METHODS AND ANALYTICAL APPROACH

Our subjects of analysis are three digital labour platforms operating in Denmark: Wolt, Hilfr and Voocali. While other competing labour platforms operate in these markets, we have chosen these three platforms for reasons of maximum variation because they differ substantively with regard to important parameters (George and Bennett, 2005). These parameters

are platform size, business model and working arrangements, as well as the services that the platforms facilitate and the industry in which they operate (food delivery/transportation, cleaning or interpretation). As such, these platform case studies represent variations allowing us to conduct in-depth studies of approaches to managing platform workers in different platform businesses (Flyvbjerg, 2006). All three labour platforms operate in industries that in different ways are characterised by less favourable working conditions in Denmark. The cleaning industry is characterised by weak collective agreement coverage and a high level of undeclared work (especially in the subsector of private household cleaning), combined with labour-intensive, low-wage work and a high share of non-standard work, notably marginal part-time work (Larsen and Mailand, 2018). Both the transportation and interpreting industries struggle with low pay and fluctuating working hours despite relatively high collective bargaining coverage (Larsen and Ilsøe, 2022). Further, both the cleaning industry and the delivery/transportation industry are dominated by low-skilled workers, while young people with a foreign background are overrepresented within all three industries (ibid.).

The first case, Wolt, is a large and fast-growing platform that facilitates food deliveries by the self-employed, primarily for individual customers. Up to this point, Wolt and the Danish unions have been unable to settle the terms of a collective agreement for couriers working on the platform (Ilsøe et al., 2020). The second case, Hilfr, is a medium-sized platform that facilitates cleaning in private homes. Hilfr is covered by a collective agreement and offers the opportunity to work either as a self-employed "Freelance Hilfr" or as an employed "Super Hilfr" (Ilsøe and Larsen, 2021). The third platform, Voocali, is a smaller start-up platform that facilitates interpretation services, primarily for public institutions. Voocali facilitates work for interpreters as self-employed freelancers on the platform; between 2018 and 2020, it offered a freelance agreement specifying a minimum wage and other features such as automated tax reporting (Ilsøe and Larsen, 2022). However, this agreement was withdrawn following a verdict by the Danish competition authorities (Konkurrencerådet, 2020).

In all three cases, we interviewed platform managers – who were either CEOs, founders or part of platform management – because we consider them to be key informants for analysing the platforms' approaches to management. Between 2018 and 2021, we conducted a total of twelve interviews with different platform managers (five with Wolt, four with Hilfr and three with Voocali), which we documented with extensive notes and anonymised. The interview data was complemented with desk research on platform webpages, relevant collective agreements and policy documents. Information from the platform webpages was used to cross-check the statements of managers in interviews, and to identify management practices that were not emphasised by the interviewed managers. For the interviews, we used a loosely structured interview guide that focused on the managers' perspectives and understanding of different management practices on the platform, including algorithmic management practices such as rating and task distribution systems (Möhlmann et al., 2021). Moreover, the interviews also included questions about specific platform characteristics, such as the type of industry and business model. We used our analytical framework to code and analyse the interview material and desk research with respect to the platform's use of algorithmic and traditional management practices, which were then contextualised with the six concepts for managerial prerogatives identified in the labour law literature. One limitation is that our findings exclusively reflect the perspective of the platform companies, so that our analysis may not address all aspects of the management practices taking place on the platforms. For example, out of concerns about competition, platform management may decide to withhold various aspects of these practices.

In our analytical approach to the case studies, we begin by briefly describing each platform's history and recent development. We then analyse specific management practices on each of the three platforms. In the analysis, we differ between algorithmic management practices and traditional management practices, and use the six managerial prerogatives to guide our analysis. This approach allows us to compare for which purposes platforms are managing by algorithms or by traditional managerial practices, and to what extent the platforms utilise these practices in the triangular structure of the platform. Before presenting the case analyses, we provide an overview of self-employment in the Danish platform economy.

ANALYSIS

Self-Employment in the Danish Platform Economy

While there has been much debate about the employment status of self-employed platform workers in Denmark and Europe, the Danish platform economy remains small in size, with around 1 per cent of all employed people in Denmark having worked by means of labour platforms in 2019 (Löhr, 2020; Ilsøe and Larsen, 2020; Jacqueson, 2021). The findings are similar to those found for other Western contexts, with a share of 2 per cent in the European Union and 2.5 per cent in the United States reporting platform work (Urzì Brancati et al., 2020; Piasna et al., 2022). The majority of platform workers in Denmark has a relatively small income from online work (less than €3,300 per year before taxes), and many rely on platform work as an income supplement rather than as their main source of income (Ilsøe and Larsen, 2020). Around 8 per cent of the workforce is self-employed in Denmark, which is comparatively low in the European context, although the share of solo self-employed is increasing in the country (Mailand and Larsen, 2018).

Self-employed workers in Denmark can earn up to €6,600 per year before they are required to register as self-employed with a VAT number. Due to Danish competition laws, the self-employed in Denmark cannot set hourly minimum wages through collective bargaining (Due et al., 2017). This restriction was underlined in 2020, when the Danish competition authorities issued a verdict involving the two cleaning platforms Hilfr and Happy Helper, specifying that minimum wages for the self-employed are not in line with the competition laws. The newly adopted guidelines by the European Commission may overturn this ruling, as these guidelines allow certain groups of solo self-employed workers to reach collective agreements without being in conflict with EU and Danish competition laws (Konkurrencerådet, 2020). Registered self-employed are eligible to sign up for certain unemployment insurance funds as well as publicly funded benefits such as maternity leave and sickness benefits (Mailand and Larsen, 2018). However, few platform workers in Denmark are required to register as self-employed, as only a limited number of workers earn more than the €6,600 threshold (Ilsøe and Larsen, 2020). In consequence, they are not eligible for the same benefits as the registered self-employed. Moreover, even if they are registered as self-employed, many platform workers may struggle to qualify for social benefits due to their relatively small earnings (Mailand and Larsen, 2018).

Wolt

Wolt was established as a food delivery platform in Finland in 2014. Since then, Wolt has expanded to more than 129 different cities in 23 countries.[3] In 2021, the platform began offering delivery of other products such as groceries, and merged with the American food delivery platform DoorDash, increasing their total market share.[4] Wolt entered the Danish market in 2017 and operates in 16 different Danish cities with approximately 4,000 couriers on the platform.[5] Wolt is the second-largest platform for food deliveries in Denmark, surpassed only by Just Eat, which was the first Danish platform for food delivery and continues to have the largest market share. Based on an app design, Wolt builds its business model on partnerships with restaurants and "courier partners" (i.e. self-employed freelancers), with the latter delivering the orders to the customers.[6] Payment of couriers is based on a competitive model: couriers receive a base fee of €4.70 for each delivery, which is topped up with a number of potential bonuses. Average hourly earnings are estimated to range from €21 to €25 per hour (or €8 per task) according to the Wolt managers interviewed, and other research corroborates these figures (Larsen and Ilsøe, 2022; Ilsøe and Larsen, 2021).

Management practices

Although the growing platform has a consistently high total number of active couriers, Wolt managers explained that their business model results in a "coming and going" culture on the platform. Many of the self-employed couriers use the platform on a short-term basis and tend to "shop around" on different platforms. For instance, couriers have the option to cancel an order at Wolt and simultaneously accept a gig on a competing platform offering higher earnings. While the managers consider this employment arrangement to be beneficial for the couriers because it offers flexibility, they also stress the need to make use of management practices to retain couriers on the platform.

Wolt's use of algorithmic management practices is described in an "Algorithmic Transparency Report" available on its website, and mainly involves measures to optimise the efficiency of deliveries and to offer economic incentives to couriers.[7] The report states that the algorithm distributes tasks to available couriers on the basis of a combination of the courier's vehicle type and the courier's distance to the restaurant locations from which customers order. For example, Wolt nudges couriers by means of algorithms on the app to work during peak hours by offering additional bonuses for completing orders in the evenings and on weekends. The algorithm is also designed to offer couriers distance bonuses and bonuses for large orders, including "bundled tasks," which gives couriers the option to pick up orders for several customers before delivering the food. In addition, couriers can contact Wolt's support team to clarify information provided by the app such as the correct address for a delivery or information about "hotspot areas" with many orders.

The previous examples reflect how Wolt seeks to influence *working time* and provide *instructions* on how to optimise deliveries, in that it makes use of algorithmic management practices to *direct* and *discipline* the couriers' performance on the platform (Kellogg et al., 2020; Kristiansen, 2020). However, Wolt's information about its use of algorithms suggests that they do not function as *control* measures to *evaluate* the performance of couriers (ibid.). Wolt states that couriers are neither ranked directly by customers nor sanctioned if they reject or cancel a task offered by the app or fail to complete deliveries within an estimated time

frame. Findings from an ethnographic study of Wolt couriers in Denmark support this claim (Kusk and Bossen, 2022).

The traditional management practices at Wolt are reflected in their formal recruitment procedures as well as their standards for courier behaviour and termination of contracts, which relate to the prerogatives of *hiring*, *rules of conduct* and *dismissals,* respectively (Kristiansen, 2020). For example, on its website Wolt lists a number of requirements when individuals apply for registration as a potential courier on the platform, including an ID, permission to work, ownership of a smartphone, access to a vehicle and acceptance of a "partnership agreement." In addition, national authorities require potential couriers to use a thermal bag and to acquire a license for handling food deliveries.[8] Wolt further conducts a brief application check before allowing applicants to start work as couriers on the platform.[9] As for rules of conduct, the Wolt website lists a number of examples of how to comply with the partnership agreement.[10] For example, couriers are expected to act appropriately towards customers and to comply with the requirements set by national authorities. In the event couriers violate these standards, Wolt may decide to remove their profiles, an action corresponding to the prerogative of dismissals. Wolt also states that courier profiles cannot be removed on account of poor courier performance because customers rate different aspects of their service experience, such as the restaurant's food, the app's delivery time estimates and the courier's handling of the food. Customer ratings are reported directly to Wolt's support team, which may decide to follow up if the customer had a bad service experience.[11] For instance, if the courier damaged a product during delivery, Wolt may reduce earnings from the task completed.[12] Apart from these traditional management practices, Wolt provides guidelines but does not describe any further procedures on its website for controlling work processes. On the basis of the website information, it seems Wolt does not check whether the self-employed couriers adhere to these guidelines, such as reporting for taxes or complying with hygienic standards with respect to their thermal bag.[13]

Hilfr

A Danish-owned labour platform established in 2017, Hilfr facilitates cleaning in private homes.[14] The company has more than 2,000 customers and is the second-largest platform in Denmark for mediating cleaning services in private homes (the cleaning platform Happy Helper has the largest market share).[15] Currently, more than 270 cleaners across all major Danish cities are using Hilfr. Some of the cleaners on Hilfr are employees covered by a collective agreement (Super Hilfrs), whereas others are self-employed (Freelance Hilfrs). The Hilfr managers estimate that Freelance Hilfrs and Super Hilfrs make up 75 per cent and 25 per cent of the workforce, respectively. However, around two thirds of the total cleaning tasks are conducted by Super Hilfrs. Under Hilfr's hourly wage system, the employed Super Hilfrs receive a minimum hourly wage of €19, along with accruing rights to pensions, paid holiday and sick pay. Super Hilfrs can also set their hourly wage higher than the collectively agreed wage floor. Freelance Hilfrs are not entitled to a minimum wage, but are estimated to earn an average €17 per hour, which is topped up by a "welfare supplement" of €3 per hour.

Management practices

In the interviews, the Hilfr managers note that their platform's two types of employment relations give them a competitive edge: the platform attracts self-employed cleaners by offering them the benefits if they work as a Super Hilfr, which include management standards

such as automated tax reporting. However, Hilfr managers also point to factors contributing to recruitment and retention challenges on the platform: in general, cleaning is considered a low-status industry, and cleaners tend to shop around between different platforms. Likewise, new Super Hilfrs often struggle to establish themselves on the platform with a higher hourly wage because they lack profile reviews and ratings. In response, Hilfr managers use various supportive measures to retain cleaners and customers on the platform. At the same time, the managers stress that the company is a start-up with limited managerial resources for managing and supporting the cleaners.

With respect to algorithmic management, Hilfr managers indicate that rating systems on the platforms are used to assess both the cleaner's performance and the cleaner's experience with the customers. Ratings are based on an average of different parameters. For instance, the customer's rating of the cleaner's performance includes parameters such as thoroughness and punctuality. The managers also state that ratings from customers are used to highlight the best-performing profiles on the platform. This practice suggests that Hilfr relies on algorithmic management practices to control worker performance by using rating systems to *evaluate* individual cleaners (Kellogg et al., 2020). Apart from these practices, Hilfr does not in the interviews or on the website touch upon further measures that relate to algorithmic management.

The majority of Hilfr's management practices are traditional measures such as recruitment standards and practices for the termination of cleaners, as well as different guidelines related to the cleaning service, which correspond to the prerogatives of *hiring*, *dismissals* and *rules of conduct* (Kristiansen, 2020). Regarding the first, Hilfr requires cleaners to provide basic information, including ID, geographical area, available hours and a profile picture, in order to be eligible to work on the platform.[16] In terms of *dismissals*, the Hilfr managers interviewed report that they occasionally terminate odd-looking profiles with suspicious content or false information. Super Hilfrs are via the collective agreement entitled to two weeks' notice if management intends to remove their profile from the platform.[17] On the company website, Hilfr management also provides general guidelines on profile management, hourly wage setting, the collective agreement, cleaning standards and how to manage customer relations (the latter corresponds to *rules of conduct*).[18] In addition, customers and cleaners can contact Hilfr's support team to get help and settle various issues.

Because Hilfr mainly operates with guidelines related to the work process, the company deliberately delegates substantial aspects of management to the customers and cleaners, namely, those involving the prerogatives of *instructions*, *working time* and *control* (Kristiansen, 2020). For example, Hilfr encourages its cleaners to come to an agreement with the customers on the specific cleaning tasks and also states that it is the customer's responsibility to provide the necessary cleaning equipment to the cleaners.[19] Furthermore, both Freelance Hilfrs and Super Hilfrs are responsible for entering their available hours in the profile calendar. Likewise, on its website, Hilfr specifies that disputes between cleaners and customers are to be resolved in the first instance by the two parties, before requesting Hilfr's support team to intervene.[20] Because of the high level of autonomy on the platform for both Freelance and Super Hilfrs, the managers state that they are unable to control important aspects of the cleaners' work processes, such as whether cleaning chemicals provided by customers adhere to statutory health and safety regulations. Another example is how Hilfr management encourages cleaners to work for a flat hourly wage for all types of cleaning tasks. This pricing is encouraged because Hilfr managers consider consistent and transparent price-setting attractive to new customers. However, according to the managers, customers often book the same cleaners on a continual

basis; as such, the two parties tend to agree on specific conditions, including hourly payment. These arrangements result in cleaners receiving hourly wages that differ according to the individual customer.

Voocali

Established in 2017 as a Danish-owned labour platform, Voocali facilitates interpretation services primarily for public institutions and organisations. Currently, the company has around 100 customers and 150 interpreters affiliated with the platform. Voocali has had 500 interpretation transactions since January 2019, of which 80 per cent required physical attendance. Voocali has an hourly wage system, with interpreters receiving an hourly minimum wage of €54. Voocali is one of several interpretation service platforms operating in Denmark.

Management practices

In the interviews, Voocali managers express that their platform design is attractive for interpreters and organisations (i.e. customers) because it helps facilitate interpretation services by reducing administrative costs for both parties. In addition, the managers highlight the possibility of greater worker autonomy when working as a self-employed person on the platform instead of being employed at an interpretation agency. However, like their Hilfr counterparts, Voocali managers experience retention and recruitment challenges on the platform. According to Voocali, the industry has a tarnished reputation; for this reason, many interpreters consider it a stepping stone to other jobs. Hence, Voocali relies on a core group of loyal interpreters, and yet Voocali managers express difficulties in finding qualified interpreters owing to the limited scale of the platform. The company requires interpreters who work in different languages and dialects and who have interpretation experience in specific areas (e.g. integration, health, employment services). In addition, Voocali managers indicate that being a small start-up company with limited resources makes it difficult for them to keep the promise of reduced administrative costs for customers and workers. For instance, Voocali reports the interpreters' taxes manually because they have not yet managed to automate this service. As such, Voocali management is mainly concerned with developing management practices related to the platform design in order to attract potential interpreters to the platform.

Voocali primarily relies on algorithmic management practices related to the prerogative of *control* (Kristiansen, 2020). Like Hilfr, Voocali evaluates the interpreters' performance by displaying profile ratings on the app (Kellogg et al., 2020). The Voocali collective agreement indicates that ratings on the platform are used to evaluate worker performances, and that positive profile reviews increase the number of potential tasks for the individual interpreters.[21] In addition, Voocali managers note that automated data management is used indirectly for economic incentives to attract interpreters and customers to the platform. For example, data management can calculate the interpreter's transport expenses, automate attendance subsidies included in the interpretation service, and provide for data portability, which enables interpreters to transfer ratings from other platforms. Although these features do not explicitly *direct* the performance of interpreters, Voocali managers contend that they increase the interpreters' hourly earnings by lowering the amount of time they spend on administrative tasks – which may serve to *discipline* interpreters as they perform their assignments (Kellogg et al., 2020).

Like Wolt and Hilfr, Voocali relies on traditional management practices for the prerogatives of *hiring*, *dismissal* and *rules of conduct* (Edwards, 1979; Kristiansen, 2020). In the case of

hiring, Voocali operates, unlike the two other platforms, with a high entry barrier, reflecting the highly skilled nature of interpretation services. Voocali management is more directly involved in the recruitment process than are the other platforms, where documentation of skills and education plays less of a role. Voocali's website lists a number of requirements for eligibility to work as an interpreter on the platform.[22] Apart from being a fluent speaker of the languages in question, aspiring interpreters must be certified by national authorities and have a relevant education or complete a professional interpreter program in the Danish educational system to qualify for work through the platform. With respect to *dismissals*, the Voocali managers interviewed state that they occasionally remove worker profiles, notably when interpreters provide misleading information about their interpretation skills. As for *rules of conduct*, Voocali's website declares that interpreters are expected to comply with the ethical procedures outlined by the Danish Association of Certified Translators and Interpreters, among them the duties of confidentiality and incorruptibility, the avoidance of conflicts of interest, and loyalty to the customer.[23]

With respect to *instructions*, Voocali provides general tips on good interpretation practices and how to arrange interpretations in the most convenient way.[24] Otherwise, Voocali's management practices reflect how interpreters and customers are largely responsible for directing the work process of the interpretation service. For instance, although Voocali sets the hourly wages, the Voocali managers interviewed stress that it is up to clients and interpreters to negotiate conditions for different interpretation services. While in principle self-employed interpreters are in charge of controlling their working time, Voocali managers mention that most interpretations take place early in the day, when public authorities typically prefer to have consultations with citizens with special needs, including interpretation. In this way, customers decide de facto at what time of day interpreters perform interpretation services.

DISCUSSION

Algorithmic Management

Our in-depth analyses of the three platforms Wolt, Hilfr and Voocali indicate that algorithmic management on labour platforms has a less omnipresent and a more complex character than suggested in much of the algorithmic management literature (Rosenblat and Stark, 2016; Frenken and Fuenfschilling, 2021). In line with our first tentative hypothesis, on all three platforms algorithmic management practices are used for the three managerial prerogatives of *instructions for the execution of work*, *working time* and *control*, though, it appears, in quite different ways (Benassi and Kornelakis, 2020; Kristiansen, 2020). Wolt uses algorithmic management practices for *directive* and *disciplining* purposes, for example to distribute tasks and nudge couriers to complete larger gigs and to work at peak hours, thus influencing the execution of work and the working time (Kellogg et al., 2020). These aspects also reflect the competitive wage model used at Wolt (Jabagi et al., 2019). Voocali also indirectly uses algorithmic management as a tool by automating certain administrative obligations for their interpreters in order to increase their hourly wages. Human intervention seems to go hand in hand with the use of these algorithms, as reflected in the use of support workers at Wolt and manual tax reporting at Voocali (Barrett and Mayson, 2006; Kusk and Bossen, 2022). In the

case of control, Hilfr and Voocali employ algorithmic management practices by using rating systems to evaluate work performance through quantitative means (Baiocco et al., 2022).

Traditional Management

As anticipated in our second hypothesis, all three platforms fulfil the managerial prerogatives of *hiring*, *dismissal* and *rules of conduct* solely through traditional management practices (Edwards, 1979). There are formal and often bureaucratic processes for recruitment, with low barriers for entry at Wolt and Hilfr, and high skill levels required at Voocali. At Hilfr and Voocali, confidential worker–customer relations play a significant role because customers often request the same cleaners and interpreters. As such, work functions and skills are critical concerns for both Hilfr and Voocali, but typically for different reasons: Voocali is a platform requiring high skill levels, whereas Hilfr focuses on work functions and skills because of the nature of the work tasks (Jabagi et al., 2019). Furthermore, all three platforms rely on human decision-making to assess whether workers violate behavioural rules or provide false information on their profiles (Edwards, 1979). Thus, the three platforms rely on traditional management practices to adjust the size and composition of their workforce and to examine worker behaviour, thereby managing beyond algorithms when handling their *numerical* and *functional* flexibility in self-employment arrangements (Cappelli and Neumark, 2004; Benassi and Kornelakis, 2020). According to our findings, Kellogg and colleagues' conceptual framework of algorithmic management should be expanded to include these aspects when considering the extent of algorithmic management on platforms. This adjustment would offer insights into the role of traditional management on platforms as well as the dynamics between algorithmic and traditional management (Kellogg et al., 2020).

Delegated Management Responsibilities

Our findings also point to examples of management practices being delegated to customers and workers; as a result, the platforms rely on neither algorithmic nor traditional management practices for some managerial prerogatives. For example, with respect to *instructions*, interpreters at Voocali seem to be responsible for their own work process, which may be due to the highly skilled nature of the work (Jabagi et al., 2019). In the case of *working time*, customers at Voocali seem to have the final say owing to various organisational constraints, whereas cleaners can have substantial influence on planning their schedule at Hilfr (ibid.). With respect to *control*, all three platforms rely on customer reports (in addition to ratings at Hilfr and Voocali), but they also appear unable to control certain aspects. Examples include health and safety measures at work as well as job satisfaction, as seen with the lack of inspection of the couriers' thermal bag at Wolt, or of the cleaning chemicals at Hilfr. At Voocali, self-employed interpreters are solely responsible for maintaining and developing their interpreter skills and thus their quality of service and employability. In these different contexts, the combination of the relaxed self-employed working arrangement, the distribution of management responsibilities to others and the digital space of the platform amplifies the distance between the platform and the workers (Galière, 2020; Kusk and Bossen, 2022). Our findings suggest that all three platforms are concerned to varying degrees with establishing measures to develop long-term employment relationships with some of their platform workers – these findings differ slightly from those of other platform research. However, these attempts are challenged by the lack of

control of worker performance and productivity in several situations (Meijerink and Keegan, 2019; Duggan et al., 2020).

Policy Implications

Our three case platforms as well as other labour platforms may also need to reconsider their use of different management practices in the future. Recently, the European Commission proposed a Directive for Improving the Working Conditions in Platform Work. The proposed directive includes a presumption rule on platforms' employment relationships that may lead to platforms being presumed to be employers if they fulfil two of five listed parameters, which largely echo the managerial prerogatives used in our analysis (e.g. instructions, rules of conduct, control) (Kristiansen, 2020; European Commission, 2021). However, our findings also suggest that the platforms tend to delegate management tasks such as working time and control to individual workers and customers, so that some platforms may evade the presumption rule if the directive is adopted in its current form. In addition to the proposed directive, the European Commission suggested a number of guidelines allowing for collective bargaining for the solo self-employed in certain situations – including solo self-employed platform workers (European Commission, 2022). These guidelines were adopted in September 2022 and will make it easier for labour platforms like Hilfr and Voocali to negotiate collective agreements.

The proposed directive also outlines principles for the platforms' use of algorithmic management practices, which apply to both employees and the self-employed operating by means of the platforms, which is unique in both the EU and the Danish context as labour law typically applies only to employees (European Commission, 2021). The different aspects of algorithmic management listed in the directive (e.g. evaluation, access to work tasks, control of working time) echo many of the concepts advanced by Kellogg and colleagues (2020). The proposed directive also addresses a number of principles related to transparency, including platform workers' rights to written information about the functioning of, and eventual changes to, the automated decision-making systems used by labour platforms to allocate work tasks, ratings, bonuses and so forth. Labour platforms are also requested to continuously evaluate and inspect their automated systems to prevent discriminatory practices, and to develop and secure rights to information and consultation (European Commission, 2021). Some of these principles touch upon traditional management tools (human inspection, written documentation, information and consultation rights) and point to the close interplay between algorithmic and traditional management that is often overlooked within much of the platform literature.

CONCLUSION

In this chapter, we have analysed how and for what purposes digital labour platforms make use of algorithmic and traditional management practices when they manage a workforce of mainly self-employed platform workers. The findings from our three in-depth case studies suggest that the platforms to some extent rely on algorithmic management practices for economic incentives and control measures (Duggan et al., 2020). The platforms supplement these practices with human intervention, and in other cases they rely exclusively on traditional management practices for recruitment purposes and the inspection and sanctioning of worker behaviour (Edwards, 1979; Meijerink and Keegan, 2019). Furthermore, the platforms appear

to delegate certain management responsibilities, such as control or instructions, to workers or customers.

As such, the findings suggest that algorithmic management is less intensive on these three platforms and takes a much more complex form than suggested in much of the platform literature (Kellogg et al., 2020; Frenken and Fuenfschilling, 2021). Due to the remote relations between the platform and the worker, along with the delegation of management responsibilities, they continue to experience challenges with controlling aspects of the working arrangements (Duggan et al., 2020). In the light of the EU's recently proposed directive on platform work as well as the recently adopted guidelines that allow for collective bargaining for certain groups of the solo self-employed, including platform workers, these issues may with time have important implications for the platforms' various business models and different approaches to managing their workers on the platform (European Commission, 2021; European Commission, 2022).

NOTES

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