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Psychosocial work environment and mental wellbeing of food delivery platform workers in Helsinki, Finland: A qualitative study

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ABSTRACT

Purpose: Food delivery platform work is a relatively new phenomenon in Finland and has not been studied widely hence limited knowledge on its work environment. The aim of this study was to explore and understand its psychosocial work environment in the Helsinki region and how it relates to the mental wellbeing of its couriers.

Methods: The study draws its findings from 20 semi-structured, in-depth interviews with food delivery platform workers in Helsinki. Data were approached through thematic analysis where the six phases of thematic analysis were meticulously followed.

Results: Food delivery platform work provided couriers with income and labour market opportunities. However, its work environment was psychosocially burdening, which posed detrimental challenges to the mental wellbeing of its couriers.

Conclusion: Study findings indicated that food delivery platform workers worked in an onerous work environment, which accentuated their occupational mental health. Thus, this study recommends future longitudinal research that would examine the association between food delivery platform work and mental health of couriers working through such platforms. Also, interventions and policies that aim at improving its psychosocial work environment are required for a more decent and healthier work environment that enhances mental health and wellbeing of its couriers.

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1. Introduction

Having a job is linked to higher overall wellbeing for its provision of financial resources, social integration, personal identity and the possibility for meaningful contribution to the society, all of which have been found to enhance the mental health and wellbeing of workers (Boreham et al., 2016). While several factors in a workplace can promote worker's mental wellbeing, a workplace is also one of the "key environments" that can impair workers mental health and wellbeing. (WHO & ILO, 2022). These work factors, known as psychosocial factors, are linked to the design of work; organization and management of work; social, physical, psychological, and economic factors, and how workers relate to them. They constitute a psychosocial work environment [PWE] which, refers to the aspects of work that influence or have the potential to influence the mental health and wellbeing of workers. (WHO & ILO, 2022; 1986, p. 5 - 11).

Research on work environment for various types of jobs in traditional forms of employment (e.g., Belloni et al., 2022; Fan et al., 2019; Shahidi et al., 2021) have established a link between poor psychosocial work factors and elevated stress among workers, which resulted in adverse effects on their mental health and wellbeing. These work-related unfavourable outcomes arose from poor-working conditions such as excessive work overload, time pressures, work insecurity, job insecurity, poor

work environment, poor work relationships, lack of support from management or work colleagues, lack of/limited work resources and unclear labour relations.

Nevertheless, digitalization and advancement of technologies have given rise to new forms of work, e.g., platform work, which emerged in the European Union [EU] about a decade ago (Eurofound, 2018). As there is no commonly agreed definition of platform work within the EU (Eurofound, 2018; Forde et al., 2017; Garben, 2017), its definition in this study corresponds to that of Eurofound (2018) which is "a form of employment that uses an online platform to match the supply of and demand for paid labour using an algorithm".

Platform work [PW] has transformed the way work is organized and the way people work (Pesole et al., 2018; Urzi Brancati et al., 2019). Although empirical studies on occupational health and wellbeing of platform workers have just recently begun (Freni-Sterrantino & Salerno, 2021) and is still in its infancy, a wealth of studies on PW (e.g., Kilhoffer et al., 2020; Lenaerts et al., 2022) have associated it with poor working conditions. However, as there is a diversity on the types of jobs offered in the platforms, the working conditions and experiences of platform workers should not be generalized for all types of PW.

Also, as noted by Jesnes and Oppegaard (2020), many new platform companies are emerging, whereas some

are rapidly expanding. Among them is food delivery platform work [FDPW], which is one of the most widespread type of PW in Europe (Eurofound, 2018) and the most visible in Finland (Mattila, 2020). Currently in Helsinki, there are two major food delivery platforms [FDPs] known by their brand names: Wolt and Foodora. They both started their operations in Helsinki in the summer of 2015. While there is no precise statistics of FDP workers in Finland at the time of writing this, Huws et al. (2019), reported that in 2018, 21.8% of platform workers in Finland had delivered meals by car or van, and 22.8% had delivered meals by bicycle, moped or scooter. Nonetheless, FDPW is relatively a new phenomenon in Finland and is yet to be studied, thus scarcity of knowledge on it.

Accordingly, this study generates new scientific knowledge on the understanding of psychosocial work environment of food delivery platform work in Helsinki and how it relates to the mental wellbeing of its couriers. It answers the research question: what are the experiences and perceptions of food delivery platform workers on their working conditions in Helsinki? The study results do not only contribute to the field of occupational health but are also useful to policy makers and actors of PW as reference in the implementation of interventions and policies aiming to improve the working environment of platform workers in Finland. To the best of my knowledge, this was the first large study to thoroughly investigate the PWE of the two main FDPs in Finland. In this study, the terms “courier”, is used to refer to food delivery platform worker and platform is the organization organizing the work through its apps.

2. Materials and methods

A phenomenological approach (Creswell et al., 2007; Groenewald, 2016; Wilson, 2015) was employed to this study to enable explore and understand the experiences and perceptions of participants on their working environment. Rich and detailed descriptions on participants' experiences and perspectives were captured through semi-structured, in-depth interviews with them. Thematic analysis (Braun & Clarke, 2006; Clarke & Braun, 2017) was applied to the data to enhance the understanding on, and identify the commonality of, participants' experiences and perspectives through formation of themes. The methodological details of this qualitative study are described in the following sections.

2.1. Data collection

Data comprised semi-structured, in-depth interviews with 20 FDP workers in Helsinki and were conducted between July and August of 2020 without the knowledge nor support from the platforms. Data were collected separately by me and fellow junior researcher using a semi-structured interview [SSI] guide. The

guide covered open-ended questions on thematic topics which reflected elements of work environment. These were: working conditions and motivation, platforms' application, work division, precarity, social protection, social relations, wellbeing and health, racism, future and work satisfaction.

The SSI guide helped us in guiding participants on discussing issues on our thematic topics, thus limiting the chances of us collecting dubious data that did not respond to the aims and objectives of our study. The open-ended questions of the SSI guide gave room for participants to respond freely to the questions as they wished. We also carried out follow-up questions, probes and comments which, enhanced in-depth exploration of participants' perceptions, emotions, experiences and points of view on issues under discussion. This enabled us to obtain rich detailed data. To enhance in-depth discussion and detailed probes on the discussion, we did not ask the questions in the order in which they were structured in the guide but asked following the way they arose during the discussion.

Nevertheless, we conducted the interviews face to face and virtually (via Facebook and WhatsApp) through video calls and voice calls at the request of participants. We recorded all interviews by use of two different recording devices for back up. While the average time for the interviews was 60 minutes, the shortest interview lasted for 26 minutes and the longest lasted for 140 minutes.

2.2. Participants

Participants were selected through purposive/purposeful sampling approach (Palinkas et al., 2015; Patton, 2002) where only participants who were at that time working as couriers in the two FDPs in Helsinki were selected for interviews. Due to their current positions as workers within the platforms, we believed they had affluent, relevant and diverse data pertinent to this research.

While on the field, those who were spotted in work gears were approached for interviews though not all of them participated in the interview. While some of them expressed disinterest, some cited lack of time for the interview due to their “tight” work conditions. They therefore left their contacts with us to contact them later to arrange for the interview. Some potential participants who proposed interview times cancelled in the last minute while some did not show up at all nor answered their phone calls. Following these arduous efforts of recruiting participants from the field, an advert call for participation was made in some relevant Facebook (social media) groups, where some participants were found and met with face to face for the interviews. Notably, during this call, participants initiated their willingness to participate in the interview by responding to the advert call. Though forty-one requests for participation were

received in response to this call, some participants did not meet the criteria of participation because they:

- i). were currently working in the platforms but were not working within the Helsinki region,
- ii). had never worked as couriers in any of the platforms under this study but requested to participate because their friends or relatives worked in the platforms.

Table 1 gives a summary of the social demographics' description of participants.

2.3. Analysis

I approached the data through thematic analysis not only for its flexibility but also that it helps to identify and understand participants' experiences, views, perspectives, behaviour, practices, thoughts, and feelings. Furthermore, the use of themes in thematic analysis helps to identify and interpret data rather than just summarizing its findings. (Braun & Clarke, 2006; Clarke & Braun, 2017). I rigorously carried out the six phases of thematic analysis (Braun & Clarke, 2006) as described below.

Familiarization with data: I listened to recorded data at the end of every interview day. The weekly reports to the research team and manual transcription of raw data augmented data familiarization. I compared raw data with transcribed data which augmented data immersion and familiarization. Also, I noted down initial perceptions and concepts relevant to answering the research question for further reference in the next phases.

Generating initial codes: I transcribed data of each interview and re-read them word by word. I applied inductive coding (Braun & Clarke, 2006, 2013) whereby I highlighted and grouped sentences, phrases and words that were pertinent to the research question into codes. I re-read the highlighted codes, analysed, and divided them into categories depending on their similarities- this gave me insights on the main issues which recurred in the dataset and were relevant to answering the research question.

Searching for themes: I again reviewed collated codes, analysed, and named them into themes and sub-themes. As some codes did not fit into any

theme, I temporarily placed them in own miscellaneous theme. I ultimately had four potential themes, and 4–5 sub-themes under each theme.

Reviewing themes: I read the excerpts containing the themes multiple times to determine their coherency. I discarded codes and sub-themes that were not closely relevant to the research question, as well as those that had insufficient supporting data. I incorporated some sub-themes to one theme. At this point, I had nine themes of which three of them had two sub-themes.

Defining and naming themes: I analysed the key descriptive words and codes from excerpts where themes derived, upon which, I identified similarity in the meanings of some themes and sub-themes. This prompted me to repeat phase 4 to ensure lack of redundancy. Ultimately, I had seven themes of which two of them had two sub-themes. I then defined and deductively named the themes to reflect the psychosocial aspects of FDPW which were identified in the dataset. Although I applied a deductive approach in the naming of themes, the inductive coding in phase 2 contributed to generating the names of themes.

Producing the report: In this last phase, I wrote up an analytical report to elucidate the findings of the data. During the writing, I recognized similarities in the meanings of the sub-themes of the two themes. This made me to repeat phases 4 and 5. I then merged the sub-themes to the themes and finally had no sub-themes but only seven themes which are discussed in the next section. In the report, I included interview excerpts in the findings to underpin the reliability of the results.

3. Findings

Following the thematic analysis process applied to the data, seven main themes which reflected the factors of food delivery platform work [FDPW] in Helsinki were captured. These work aspects were considered to influence or had the potential to influence the mental wellbeing of participants either positively or negatively. These themes as presented in this section were: "algorithmic management", "flexibility and

Table 1. Summary description of participants' social demographics.

| Social demographics | |
|--------------------------------------|---|
| Age | 18/20 were below 35 yrs 2 were 36 yrs |
| Ethnicity | 20/20 were of (im)migrant backgrounds |
| Gender | 17/20 were male 3/20 were female |
| Education level | 15/20 had attained either masters or bachelor's degrees from Finland or were students in Finland. 5/20 had education from their home countries only. |
| Duration of working in the platforms | 2/20 had worked for over 3 years 5/20 had worked for 2 years 9/20 had worked for about 1 year 4/20 had worked for 4 months or less |
| Main source of income | 17/20 had this job as their main source of income |

autonomy”, “workload and work intensity”, “social relationships”, “incentives and remunerations” “physical work environment” and “job satisfaction”.

3.1. Algorithmic management

Algorithmic management is the use of software functions to remotely control and manage the work. This include but not limited to the way tasks are allocated, monitored and evaluated. (Lee et al., 2015; Mateescu & Nguyen, 2019). Interviews showed that, while these two platforms used algorithms in the management of their workforce, they employed algorithms differently thus drawing varying experiences and perceptions among couriers in each platform.

For instance, interviews indicated that there was neither ranking nor evaluation of couriers’ performances in Wolt whereas Foodora used algorithms to evaluate and rank their couriers. This ranking system in Foodora was determined by badge numbers assigned to couriers based on their performances. Participants termed it as “badge system”, which, on the basis of the interviews, it could be defined as a ranking appraisal used by the platform to classify their couriers to badge numbers based on their performance. In this platform, participants told they were divided into badge numbers 1–5, i.e., “top to bottom” ranks respectively. Depending on their work performance, they were evaluated every fortnight and received points, which were used to determine their badge numbers. According to couriers, the evaluation criteria for the ranking were based on the frequency of missing or cancelling shifts; working speed for task completion; working on the weekends; frequency of task declination; and lateness. Notably from the interviews, lateness was defined by logging in the app from a different location other than the designated location for starting the work; logging in the app more than five minutes from the starting time of the shift; and completing tasks in over the allocated time for tasks completion.

Nevertheless, interviews drew attention to an automated algorithmic system which monitored and evaluated couriers’ performances upon which it added or deducted couriers’ points. Thus, without any warning, couriers were penalized by placing them in lower badges for their inability to fulfil any of the set evaluation criterion regardless of having informed the platform. Ostensibly, couriers were still penalized for emergency and unavoidable situations (e.g., illness, stolen/broken work equipment), even when informed to the platform. Participants who worked in Foodora regarded this ranking system as unfair and as a punishment to them since it had enormous implications on their working hours—which determined their income. They explicitly portrayed feelings of stress and frustrations resulting from the ranking system as

they were still penalized for informing their inability to fulfil a certain criterion. Participants who worked in Foodora mentioned, for example:

“FH09”: In Foodora, if you have a shift, computer will not know that you are sick, they will say that oh no, please don’t do it, get well soon, but next week you will not be in badges. The badge system should be changed in Foodora, it’s very unfair with workers, the computer thing, there should be some human behaviour or human errand should be controlling it.

“FH06”: ... even if you are like five minutes late or you didn’t go for the shift even if you notify that you are sick you wouldn’t be able to make to the shift, that would deduct your points in the system... even if you inform them that you are not able to come to work because of this and that reason, your point will be deducted coz you didn’t make it to the shift. So, if once the point is deducted, it was very hard if you want to go to the top badges to get enough shifts...from badge three, if you want work that suits you, it would be very hard to find.

Also as mentioned by participants who worked in Foodora, work was done in shifts which were released to them on a weekly basis to choose own suitable shifts. However, getting shifts depended on their badge numbers. Those in first badge group were the first to access and select their shifts and the remaining shifts would be released to those in the second badge group, then third, and so on. This chronological allocation of shifts enabled those in top badge groups to have enough and suitable shifts that met their schedules compared to those in lower badge groups who would even go for months without getting any shifts. The impossibility to work without shifts meant less or unavailability of work for those in lower badge groups. Moreover, as mentioned by participants, once in lower badge groups, it was difficult to rise to upper badge groups because of fewer or no shifts which was stressful.

Similarly, interviews showed that algorithms enabled both platforms to monitor couriers’ locations if they consented to location monitoring and turned on their locations. Couriers pointed out that it was impossible to log-in to the platforms’ app for work without consenting to location monitoring. Nonetheless, in both platforms, participants had positive perceptions on the monitoring of their locations because: (i) it was the only way platforms could provide them tasks considering that tasks were assigned only to logged-in couriers waiting closest to the restaurant of delivery pick-ups, and (ii) it enabled the platform personnel to locate their location and guide them when lost to delivery destinations.

In response to consequences arising from location monitoring, “FH03” who worked for Foodora positively mentioned: *“we have to put our location service on, so basically they will know where we are at a particular time, either we are near the working area;*

and it's a good thing also because sometimes, when we are going to customer house, and it is taking long time, or I am taking the wrong route, then they just notify me that it seems that you are taking wrong route please check your map kind of. It's like they want to know which rider is where, because based on that, so for example, if the working place is place A, that is the restaurant to pick the order from, and if I am nearby that place, I will get order from that restaurant, and somewhere which is far, you won't get that because I will reach there quickly; so that's why they need this location permission." "FH02" who worked for Wolt shared: *"The app especially can know like what, how, how much distance you are connected with the restaurant so then you can pick the order ... they monitor like my location, and what kind of order I took up, and where I have to go and where I have to deliver. So, if I need any help, they guide me to the proper destination."*

Despite positive perceptions among participants on the monitoring of their locations, there were no consequences nor penalties associated with it in Wolt. On the contrary, penalties through the badge system were mentioned by participants who worked in Foodora if they logged in to work from a different location than the assigned location. For example, "FH18" who worked in Foodora said: *"you need to be at a particular location. So, if you are not in the location, they will mark you late, and in that case your ranking goes down and you can't book the shifts in the next two weeks."*

These experiences show differences in how each platform employed algorithms in the management of their couriers. Discernibly, Foodora applied high control on its couriers through its use of "badge system", which some participants described as "unfair". Participants were frustrated and stressed as a result. On the other hand, participants who worked in Wolt shared positive feelings following its relatively placid use of algorithms.

3.2. Flexibility and autonomy

Given the similarities on the meanings of workplace flexibility (e.g., Bal & Izak, 2020; Hill et al., 2008) and workplace autonomy (e.g., Karasek et al., 1998; Morgeson & Humphrey, 2006; Wu & Zhou, 2020), this theme refers to the aspects of work allowing the worker the control and freedom of choosing where and when to work, duration of work and freedom of work arrangement. The theme presents the elements of flexibility and autonomy that were revealed in the dataset, as well as how they were perceived by participants.

Based on the interviews, all participants regarded flexibility as the main attraction and motivation for working with the platforms. This, as they described,

provided them the opportunity to choose their own working time and enabled them to balance their work with other personal engagements like studies and other jobs. Nevertheless, interviews enunciated varying management systems between these platforms which portrayed flexibility and autonomy in the platforms differently.

For instance, participants who worked in Foodora mentioned they worked in shifts and chose own shifts suitable to their personal schedules. However, they cited being controlled, evaluated and penalized through the "badge system" (elaborated in the first theme), which they said made them feel like employees without freedom even though they worked as independent contractors. For example, "FH09" said: *"they say you must pick up the shift yourself, like I am the one who choose. So I am responsible to work and be available and be online in the app for Foodora, but there's nobody put gun on my head or something, no nobody push me to, but if I stop, or if I am late, or if I am not fulfilling the computer, coz I am fighting against the computer app, if you do some mistakes or you are late, the system will put you or judge you or evaluation your task like your shift and then give you your badge numbers every two weeks ... when I log on somebody is listening me, somebody is evaluating me ... I know I am a freelancer, but they do not have to order me, and monitor me ... Foodora they are controlling me by this badge system... they are not freelancing; they are treating me like their employee".* Moreover, cancelling or rejecting tasks in Foodora was penalized by putting the courier on an unpaid mandatory break. This was perceived as stressful by its couriers owing to the strenuous nature of the job as they would sometimes feel tired but had no option than to continue working. For example: "FH18" said of Foodora: *"in the case of Foodora, you need to pick the order, if you cancel, they are going to put you on hold. Sometimes it feels very hectic because you know you can't cancel the orders. So even if you are tired you have to work."*

Unlike in Foodora where couriers were obliged to start their shift at an assigned location and time, Wolt couriers were not bound by any obligations regarding their work time arrangement. They started and ended their work whenever they wished and in any place within their chosen location of work. In Wolt, there were no restrictions on working time nor penalties. Couriers of Wolt perceived this as stress free and a freedom which made them feel like own bosses. For example, "FH02", said: *"you are the boss of your work, you can choose at what time you want to start and you can decide what time you want to leave the work, that's the kind of freedom we get in Wolt ... it is totally stress free, you don't have to listen to anyone, only what you had to do is go, just pick the food and do the job."*

Based on the interviews, longer periods of break without logging in Foodora's app for work would subject the courier to account deactivation which was done after a one-time warning. For example, "FH06" shared his experience when he did not book any shifts as he was concentrating on his thesis work: *"with Foodora, I didn't do shifts for like two or two and a half months, so they notified you have been very passive not working. So do you want to continue or not, if not we end this contract with you. And once the contract is ended, you can't log in to their platform to work"*. On the contrary, participants who worked in Wolt mentioned the ability to log in the app and continue working normally even after longer breaks of several months. As mentioned by some of them, this gave them the confidence of a stable partnership with the platform. For example, "FH05" shared his experience: *"the thing is, uhm, in 2018–2019, I took the whole year off because I was working on an internship for six months, and then I got another contract, temporary part time job, so I didn't do any deliveries for a whole year. Then when I came back there was no questions asked, they just let me to continue working. So, if I can take a whole year off, it's absolutely nothing for them and then just come back with no questions asked also. So, I'm really confident that my partnership with them is quite safe."*

Theoretically, independent contractors should be able to freely choose and decide when and where to work as well as which tasks to perform without being controlled. While interviews indicated that flexibility and autonomy were valuable to all participants, couriers working for Wolt implied a more flexible working environment which they considered to enhance their mental wellbeing. However, Foodora couriers reported lack of or limited flexibility around their working time and choice of tasks. Even though Foodora did not directly dictate their couriers on their working time and choice of tasks, through their "badge system", they covertly controlled couriers' working time and forced them to take up on given tasks.

3.3. Workload and work intensity

Literature on workload (e.g., Hart et al., 1988; Inegbedion et al., 2020) and work intensity (e.g., Burke et al., 2010) relates both workload and work intensity with psychological and physical strain, amount of work done and duration of work. However, work intensity is further associated with work pace (Kalleberg, 2013), i.e., the speed in which work is completed. Accordingly in this theme, workload refers to the amount of work assigned to or completed by the worker and the duration of work whereas work intensity is regarded here as the working pace in which the worker accomplishes an assigned task. Both physical and mental strain

perceived/encountered during the accomplishment of tasks are considered when referring to workload and work intensity in this theme.

As highlighted in the previous themes, there were differences in the management systems of these two platforms. These influenced the workload and work intensity among couriers working in these platforms.

For instance, while work was regulated and organized in shifts in Foodora, Wolt mainly allowed its couriers to work freely without restricting nor regulating their working hours. Consequently, participants who worked in Wolt had the propensity to work longer hours, mostly as much as they could. For example, "FH07" mentioned of Wolt: *"Usually, I work until I am tired, I go home to eat I come back again because you can work as much as you want"*. In essence, this exposed Wolt couriers at a risk of overworking considering the general rule of regular working time as stipulated in the working time Act in Finland (see e.g., ref. Working time act (872/2019). However, as was realized in the interviews, there was no risk of over working in Foodora not only because of limited work shifts or work unavailability for couriers in lower badges (discussed in the first theme), but also because of the regulated work hours per week. Interviews revealed that, the working hours of Foodora couriers were regulated to a maximum number of hours depending on their migration statuses as outlined in the migration laws of Finland (e.g., 25hrs/week maximum for those on student residence permits and 40hrs/week maximum for others). Nevertheless, regardless of the type of residence permits, their shifts were not guaranteed as it was determined by badge numbers.

Also, interviews indicated that wages were mainly determined by the number of completed tasks in both platforms. While Wolt paid its couriers per each completed task, Foodora paid its couriers on an hourly basis and expected them to complete about 3 tasks per hour. However, each extra task completed within an hour was not only a plus for extra payment but also for attaining or maintaining good ranking. Otherwise on quiet days, participants in both platforms said they spent time roaming around restaurants waiting for work. Unlike couriers not working in shifts (e.g., in Wolt), those working in shifts reported a guaranteed hourly pay even when tasks were not available. Nonetheless, interviews revealed that due to low payments, couriers in both platforms worked under rush and many hours (in Wolt) to be able to complete as many tasks as they could for sufficient income for their monthly expenses. This is demonstrated by participants below:

"FH07": "the work is such that you have to be really hurry, because that is the nature of the job, it's like survival of the fittest, you have to be really hurry to get

something decent because some days when you come to work for eight hours you will not get even half of the minimum wage."

"FH01": "But, here in this job, if you work the less time, then you got the less money that will not meet your living expenses, the main reason is your living expenses. That is why you have to work more."

Additionally, participants who worked in Foodora mentioned they worked under high intensity to enhance their chances of retaining or being promoted to better ranking levels. This spurred competition among them as they scrambled to be on better badges at the expense of their health. Ergo, some participants mentioned they worked without rest days or breaks while some drove fast and risked over-speeding fines. When asked how ranking influenced their work, participant "FH11" responded: *"It influences your work in the sense that you have to be fast, you have to always be fast in order to be at a group one. You have to be very very fast. And if you have to be fast, it means that you have to drive fast. Sometimes you have to drive fast in order to maintain that ranking."*

Nevertheless, in both platforms, participants regarded work as intense, strenuous and physically draining. Climbing apartment stairs and or cycling for longer hours was tiring for some couriers. "FH05" explained: *"sometimes if it is a long shift and very busy, like it can be physically draining coz you walk around, . . . and also you're climbing up at the apartment stairs so it can be a little bit busy and tiring."* And "FH04" who was delivering on bicycle said: *"It's not easy cycling, so sometimes I'm just too tired to go to work."*

Notably from the interviews, the low income in both platforms, coupled with limited or unavailability of work in Foodora, prompted couriers to work either in both platforms or in other unskilled jobs- only two participants worked only in Foodora. Consequently, except for the two participants who worked only in Foodora, other participants mentioned being usually too tired and had depleted energy to socialize, perform personal chores and hobbies after a workday as stated by participants below:

"FH04": Most of the times when I get home, I am too tired to even eat. So, I just go home, take a shower, if I can eat I eat, if not I just go straight to bed, and the rest continues the next day.

"FH02": Well, I do have many hobbies but then when it comes to this courier work then some of your hobbies has to go, you have to give up some of your hobbies because, you know, if you want to earn, you really have to work hard for that.

"FH01": if you, uhm, want to earn like other jobs, it's very hard work . . . You cannot give the time to your friends like the other jobs.

These experiences of participants indicate that work in both platforms was intrinsically of high intensity and of

high workload to enable them to earn decent income. They worked under high intensity for longer hours for many days in a week to be able to maximize their income due to low pay, which posed negative challenges on their occupational mental wellbeing. Some participants associated it with lose of health. For instance participant "FH09" said: *" . . . of course you work harder like a donkey, work as many hours as you can, and work as a robot to get paid a lot of money and lose your health"*.

3.4. Social relationships

It is indisputable that couriers were at the centre of the food delivery service. Hence, around deliveries, they acted as intermediaries between the platform and the customers, as well as between the restaurants and customers. Thus, this theme presents how they interacted and related with them. However, this theme does not focus on their relationship with customers due to minimal/zero contact and interaction they had with them.

On the ground of interviews, despite couriers being regarded as "business partners" of the platforms, their interaction and communication with the platforms was entirely virtual. Participants mentioned lack of a direct phone number for reaching out to platforms' except in Wolt where participants mentioned it provided a calling option on its app. However, they mainly communicated with the platforms through the chat box integrated in their apps on day-to-day matters that involved deliveries but other matters not involving deliveries were communicated through email. As they mentioned, the response rate on matters related to day-to-day deliveries were usually quick (normally within 3 minutes) in both platforms and they received quick help and guidance on those issues, but other matters written in the email were rarely responded to. Nevertheless, lack of direct phone number was perceived as a stressful challenge by some participants working in Foodora like participant "FH14" who mentioned: *"a challenge we face with the app or with Foodora as a whole is just the fact that they don't have a fixed phone number you can call in case you have difficulties, you just need to write on the app but I prefer to call maybe when you find yourself in situations"*

Based on participants' accounts, these platforms in the Helsinki region had an office where couriers visited only on their recruitment day for info sessions but did not have a common office space where couriers met each other nor visited for day-to-day work-related issues. While 16 participants felt an unnecessary need for an office, the rest four felt it was important to have an office to enable them to interact with other couriers and uplift each other, fix their bikes, charge their phones, visit the toilet, and interact with the management personnel of the platforms. Nonetheless, the

virtual communication with the platform personnel and inability to meet them face to face was frustrating to some participants. Like participant “FH09” who said: *“because it is a non-human interaction work, we can’t go their offices, we can’t meet high management, people who are hire us, we can’t even speak on the phone, we can only write text messages in our app, this is something frustration to me.”*

In this type of work, it is indisputable that couriers were more in contact with restaurants compared to customers and platform personnel. Yet, interviews indicated a strained relationship between couriers and some restaurants. Fourteen out of the interviewed 20 participants elucidated an unfavourable treatment by restaurant workers. Participants felt belittled due to the unskilled nature of their job. For example, some of them mentioned having experienced verbal aggressiveness and being restricted from sitting on the restaurant chairs while waiting for food to be ready during delays. Also, some participants mentioned how some restaurants restricted couriers from entering the restaurants through the front door and were told to only use the back door. In some restaurants, they were told to wait outside, whereas in some they were told to wait in a corner. Some participants shared their experiences. “FH02” who was a participant of Asian background said: *“So, for example, when we go to restaurants, of course not all restaurants are like the same, but they have some workers who think that like courier partners has the least job, so they just say like you have to wait outside, they don’t allow us to get into the restaurants, some people like they say you have to wait outside ... they do kind of things which really makes you little bit think about, think twice about them you know.”* And “FH12”, a participant of African background shared her experience: *“for instance, I went to pick food from one restaurant, and I sat down like because the food wasn’t ready. I sat at a corner and the lady told me you’re not supposed to sit down! I’m like, but am waiting for food? And she started shouting at me, get out am not even going to prepare this food!”*

Some participants also cited feelings of contempt and discrimination as some restaurant workers refused to sell food to couriers, citing: *“we don’t sell food to couriers!”*. “FH12”, a participant of African background shared her experience: *“I had been out all day, I went to this restaurant, I needed some energy boost, I told them can you sell to me something, I need to eat something before I continue working, she said ‘we don’t sell food to couriers’. I was like what are you talking about? I was so mad, so mad that I drove that car like a crazy woman. If that was a busy road, I would have caused an accident. That’s barbaric. That reminds me of colonialism because most of the people who are doing these jobs are foreigners ... and the other things which I would say, which I said at the beginning is its contempt... I try not to give it racism... I say it is discrimination.”*

Additionally, some participants cited aspects of racism. For example, while some couriers were told racial slurs, some couriers “of colour” were told to wait for deliveries outside as “white” couriers were permitted to pick deliveries from inside the restaurant. “FH14”, a participant of African background shared his experience: *“but there are some restaurants that are putting up some aspects of racism. Maybe they may look down on you because you’re a deliverer or because you are a black man and things like that. Those are some of the difficulties that we face. Sometimes you go to restaurant with a fellow deliverer who maybe is of the white colour, you guys are rendering same services maybe the attendants can tell you, you can wait outside. That means, is like putting you in a situation as if you being black are scaring customers and things like that, it is really a challenge.”*

Influenced by the treatment they encountered from restaurant workers, participants mentioned having listed their non-favourite restaurants, of which some of them rejected tasks from those restaurants because of fear for being “mistreated”. For example, “FH11” said: *“There are some restaurants when if I see I automatically decline because I know the kind of encounter I’ll experience if I go. Even if he complains, I have a possibility to reject him.”*

Astonishingly, as mentioned by participants, these unfavourable treatments by restaurant workers were only common in restaurants owned by non-natives. However, they regarded native restaurant workers as polite and respectful and also recognized their hospitality when they mentioned they offered them coffee and drinks in cases of delivery delays. Some participants mentioned:

FH12’, [participant of African background]: But on the other side, some restaurant owners are so nice, most times they have offered me drinks, they have offered me coffee, they have told me, please sit down and wait ... but this I have to say, those people who discriminate come from one side of the world. Especially Asians, Chinese restaurants, they have so much contempt for the couriers. It’s so obvious because I think I have lived in this country long enough and I know how Finnish people, how their customer care is ... like now if I came to buy or even to pick food from these people it is different like if I went to pick food from a Chinese or an Asian, the Thai, those kinds of restaurants, they treat us in contempt, like you are nothing, but if you go to Finnish restaurants they say “hi.”, which one have you come to pick? Okay, there you go. But these people they keep it very far from you, they don’t even want to talk to you or they can even keep you waiting intentionally just to make you feel bad, or to show you, you are nothing. That’s why I didn’t want to say its racism, I would call it discrimination of some sort.

“FH08”, [participant of Asian background]: Some kind of restaurants, I never want to quote that names, but some restaurants like some Turkish ones, they are very bad attitude. Sometimes we just ask them we have

order number this and this and they say go and sit over that place, don't come here, this is customer place. But this kind of comments is not in the Finnish restaurants or some other restaurants, but some particular restaurants.

As is apparent also in the previous themes, participants interacted more with the platforms' app in relation to their work-related matters. There was very minimal or zero interaction with their "partners" - the platform, as all work-related issues were automated in the app, which some participants perceived as frustrating. Also, coupled with lack of a conventional workplace, individualization of work was heightened, thus resulting in loss of workplace social cohesion. Couriers' experiences in some non-native restaurants did not only escalate their psychological stress but also jeopardized their relationship with restaurant workers.

3.5. Incentives and compensations

This theme is focused on monetary and non-monetary rewards offered to couriers by the platforms either as a form of reimbursement or to enhance their motivation to work.

Evidently from the interviews, these two platforms provided an easy entry to the labour market due to minimal entry requirements. Participants noted that they were required to only provide their own smartphone and a delivery equipment (e.g., scooter, bicycle or a car), which they solely took care of including internet and maintenance costs. However, other work gears like work uniforms (for winter and summer seasons) and delivery bags were provided by the platforms for free and were fixed, changed and cleaned for free. Foodora provided also a power bank for free. Participants being all of (im) migrant backgrounds, they regarded lack of Finnish language requirements as a relief since they lacked fluency of the language. Though some participants mentioned that they did not understand all the terms and conditions of work which were only written in Finnish, they appreciated the fact that they were able to gain entry in the Finnish labour market. Additionally, that the app was in English, and communication was in English was a relief from the mental strains of insufficient work language skills as was in the cast of participant "FH08" who mentioned: *"the positive aspects are these: so, I am new in Finland, so I have no any expertise in language or I end up to even, you know in very near place you didn't get any perfect job in start. So, in the beginning I would say that this job is perfect for me"*.

According to participants, their pay was determined by completed tasks and that any uncompleted tasks were not paid. Thus, accidents at work meant cancellation of the remaining shifts without any payment. In cases of any accidents in the middle of a delivery, participants said they were not compensated for completing the task halfway. Instead,

another courier would be tasked to complete the task and would be paid for the completion of the delivery. Participants felt this was an income loss for the courier who had started the delivery. Also, as they reported, even though both platforms compensated driven kilometres of above 1.5 km from the restaurants to delivery destinations, the compensated distance was shorter than the actual driven kilometres as it was measured on a straight line. Therefore, they did not receive full compensation of the actual driven kilometres. Moreover, the distance from delivery destination was not compensated. Nonetheless, participants who used cars as a mode of delivery were critical as they expressed the impossibility of driving on a straight line. For example, "FH07" mentioned: *"you also get the extra money for kilometre, so for example if the distance that we take the food from the restaurant to customers place is more than one point five kilometres you get some extra amount, but it's a little bit tricky because that kilometre is also calculated on a straight line and of course we don't drive on a straight line, we don't fly, so that is how it is but that is how we survive with it."*

On the ground of interviews, delays at the restaurants (i.e., waiting for food to be ready), were common especially in Foodora. However, participants reported that Wolt compensated couriers for delays lasting more than 11 minutes at the restaurants or at the customer, but Foodora claimed it was already compensated within the hourly pay thus provided no compensation for it. Nevertheless, this delay was alluded by many participants in both platforms as frustrating because it meant an income loss. Participants believed that within this waiting time, they could make one more delivery for extra income as they were paid per completed task. Participant "FH03" said of Foodora: *"So technically that waiting time is included into that guaranteed payment. But that has hampered in my overall income because if I haven't waited, and I could have done one more delivery in that way I could have earned more, but now that has hampered my overall, and now I am only getting minimum payment."*

Evidently, the minimal requirements for joining the food delivery platform work in both platforms made it easier for participants to gain entry into the Finnish labour market. This provided them with an opportunity to earn income and was seen to enhance their mental wellbeing. However, that they had to solely bear work related risks with lack of or limited compensations exposed them to the risk of financial loss and stress.

3.6. Physical work environment

Food delivery platform work is mainly field work. Couriers spend their working time moving across streets, among restaurants and among residential areas as they collect and deliver food from restaurants to customers. This is their physical work environment.

Thus, this theme presents their experiences on their interaction with their physical work environment during their work time.

Prior to starting their work within the platforms, participants mentioned they were obligated to have own scooters, bicycles or cars, and the responsibility for these rested solely on them. In this study, none of the participants used a scooter as a mode of delivery but they used own cars and bikes in accomplishing tasks. Out of the interviewed twenty participants, 13 used their cars for deliveries, whereas seven used their bikes.

Participants who used cars elucidated car parking fines as a major frustrating concern. Based on the interviews, financial pressures due to low income and lack of remunerations by the platforms prompted couriers to risk receiving parking fines, which the interviewed car couriers had received multiple times. Participants felt that buying a 5–10-minute parking ticket for 4–5 euros (Wolt and Foodora pay per task respectively) delivery was not worth as it meant that almost half of their pay would go to parking fees. Additionally, participants cited lack of or limited free parking spaces at the restaurants when picking up deliveries or at the customers' when delivering food, which they said was a big challenge for them. Thus, some claimed they were forced to sometimes park carelessly and unlawfully. Also, racing against parking ticket personnel was an issue they dealt with daily. Some participants described these parking-related issues as mentally torturing. "FH08", a participant who used car for deliveries stated: *"parking is a very big issue because we don't have any parking to pick up the order from the restaurant. So, if we have to pick up the order from the restaurant, situation is very, you can understand, very like mentally mentally tortured situation if you are parking your car and running to the restaurant and you are just checking back your car to avoid parking tickets, I think it's very difficult ... so it is very hard for me to just pick up the order from the restaurant and avoid any parking tickets."*

On the other hand, some bike couriers reported having experienced punctures and, or had their bikes stolen during work while locked at the bike spots. Out of the seven participants who delivered by bikes, four of them mentioned they had had their bikes stolen at least once. As mentioned by some, they had to miss on work before they found an alternative following punctured or stolen bikes. Also, those whose bikes had been stolen expressed stress owing to the financial burdens related to buying a new one since platforms did not provide any remunerations for fixing or buying new bicycles. For example, "FH18" said: *"I lost the bike, around 200 euro. So, it happened last month. I had locked my bike in front of the centre railway station and when went to pick delivery during the early morning, I found two locks were cut by the thief and bike was stolen. It was very stressing for me."*

Further, in their physical work environment, some participants experienced frightening and stressful situations of verbal abuse and physical violence at the parking lots. While those delivering by bike experienced physical violence from those trying to steal their bicycles, those delivering by car experienced physical violence for having parked either on someone else's parking spot, at a guest spot or just unlawfully. Also, some participants mentioned having been verbally abused and told racial slurs at the neighbourhoods where they delivered food. "FH02" shared his experience: *"I went to the location I was delivering, I parked the car because it was a free parking, so, and immediately I had another delivery which was in the next side, in the back of that building ... So somehow the other car came inside and in the same lane and he thought that I am trying to break the rule, and somehow the same place where I park the car, he was the one who used to park everyday. So even though it was a free parking, so somehow he came and started the fight like why are you doing this. I say like ok, its my mistake and I get away, but still he didn't listen, he came, and he started to hit my car and started to hit me also, so somehow there things went wrong so I had to call to police so somehow he just hit me and went away."*

The experiences of participants in their physical work environment were indubitably both psychologically and financially stressful, thus diminishing their mental wellbeing at work.

3.7. Job satisfaction

Given the connection between job satisfaction and mental wellbeing of workers, this theme presents the sources of job satisfaction among participants.

As shown in Table 1, this job was the main source of income for 17 out of the interviewed twenty participants. However, as reported in the interviews, 15 out of the 20 were dissatisfied with the job for various reasons and did not project themselves in this work in the long term but only regarded it as a steppingstone to "better jobs". Based on interviews, while participants who had not studied in Finland were satisfied with the job, the dissatisfied were participants who were students or had attained higher education in Finland. They were therefore constantly looking for other jobs but only worked in the platforms to enable them to support their living during studies or while they looked for professional jobs within their fields of study. For instance, "FH06" said: *"This is like here and there so just to start life in order to move to different career coz I graduated last year and still trying to find work, to find proper work, so it's been my like you say part time work in order to support myself."* When asked whether they

were satisfied with the job, some participants responded, for example:

Interviewer: Okay. Would you say are you satisfied with this job?

"FH04": That's a big question. I would rather be doing the job I went to school for. I would rather be training or be doing that.

Further, interviews revealed that participants worked in the platforms because they had limited options in the labour market due to their (im)migrant statuses. Participant "FH04" mentioned: *"Well, as an immigrant in Finland, there are limited choices for you on what kind of work you can do... we are educated, we are professionals in certain fields that, you know, but coming here, because of the language barrier, you are limited, you have to do uhm jobs that are unrelated to your profession."*

Additionally, lack of promotion in this work was also a concern as some participants felt that being a food courier meant they were stuck in the same position. This was demonstrated by participant "FH02" who stated: *"if you project yourself for the long term, probably Wolt doesn't match with those kinds of jobs what you do in your own field of work, because when, when, if I work in my regular job, we have this, what do you call, uhm, improvements, I can make, I can learn new things in my job, and I can meet different kind of people and probably I might travel outside of Finland also for my work so I am making new friends and new colleagues and probably I will learn more things and, what do you call, uhm, there is also progress that I might become a manager at some time, but when you compare with Wolt, I don't think I can. I will stay wherever I am as a courier partner probably, I might open few other businesses but then when it only, when you concentrate only on this Wolt then you stay as a courier partner only. I am looking, I am looking for jobs right now."*

In addition to low income and laborious nature of the job, lack of workers social protection coverage was also a common concern among participants when they expressed their dissatisfaction with the job. Lack of sick leave payments generated the fear of falling sick. Accidents and sickness did not only mean loss of income for them but also meant additional expenses which were difficult to cover due to low income. Therefore, they expressed a dire need to be employed for eligibility of employee's social protection coverage for an assured future, including financial and job security. For example "FH11" explained: *"If something happens to your car today, that needs to be fixed for two months or one month, you have to be at home for that period of time, and if something happens to you yourself, you cannot even get sick leave because no one will pay you if you get*

sick. You have to manage it yourself, so there's less protection... actually, everybody wants to be employed. Everybody wants to get the benefit, but you are not."

Despite the easy entry to labour market and opportunity to earn income as seen in previous themes, job dissatisfaction among participants was palpable. Studies across different professions (e.g., Allan et al., 2016; Nørøxe et al., 2018) have ascertained a connection between low job satisfaction and poor mental wellbeing of workers.

Summary of the results

Table 2 shows a summary of the results for each theme.

4. Discussion

4.1. Psychological influence of the digital manager

This study showed algorithms to be the main mechanism behind the managerial activities of the two platforms hence the "digital manager". Both platforms used algorithms to allocate work to their couriers and monitor their locations, which this study found to have positive influence on the psychological wellbeing of participants by enhancing chances for task allocation and guidance on task related matters. On the contrary, in other studies (e.g., Goods et al., 2019; Heiland, 2021; Veen et al., 2020), couriers expressed animosity and frustrations on the monitoring of their locations. In fact, in a study by Goods et al. (2019), some couriers found it stressful to be constantly monitored and embarrassing to receive guidance. Nonetheless, that task allocation was dependent on proximity to restaurants was alluded by participants to enhance the matching between supply and demand without bias or discrimination, a finding aligning with that of Eurofound (2018).

Although participants who worked in Foodora portrayed positive perceptions on location monitoring for task allocation, the ranking system used by the platform had considerable negative influence on their psychological wellbeing. The automated algorithms monitored, evaluated, rated and penalized them. They regarded the penalties of the appraisal system as an unfair punishment which was stressful and frustrating. Frustrations and stress over control and management by algorithms have also been reported in a study by Veen et al. (2020). Presumably, this ranking system in Foodora was to enhance performance among its couriers. However, this study finds its evaluation criteria and punishment of its workers as unfair, thus posing detrimental challenges to their mental wellbeing. Moreover, separate studies by Goods et al. (2019) and (Veen et al., 2020)

Table II. Summary of results of each theme.

| Themes | Summary |
|------------------------------|--|
| Algorithmic management | Both platforms used software algorithms in the management of their workforce. However, Foodora, applied high algorithmic control on its couriers which was frustrating and stressful for participants who worked for them. On the other hand, participants who worked in Wolt expressed positive perceptions on its use of algorithms which this study found to be relatively placid. |
| Flexibility and autonomy | While flexibility was of importance for participants in both platforms, the experiences of couriers differed in each platform. Participants who worked in Wolt reported higher levels of flexibility and autonomy which they considered to enhance their mental wellbeing. On the other hand, Foodora covertly employed high algorithmic control of their couriers which abated their freedom. Thus, they reported lack of or limited flexibility and autonomy while working in this platform. |
| Workload and work intensity | The experiences of participants indicated that work was intrinsically of high work intensity and high workload in both platforms to enable them to maximize their income due to low pay. This posed negative challenges on their mental wellbeing as they associated it with lose of health. |
| Social relationships | Participants reported lack of or very minimal interaction with the platforms. Coupled with lack of a conventional workplace, they felt frustrated as they interacted only with the platforms' automated apps. Also, they encountered unfavourable treatments in some non-native restaurants which did not only escalate their psychological stress but also jeopardized their relationship with those restaurant workers. |
| Incentives and compensations | Both platforms made it easier for couriers to enter the Finnish labour market. This offered them the opportunity to earn income, which, enhanced their mental wellbeing. However, that they solely bore work-related risks and had lack of or limited compensations, exposed them to risk of financial loss and stress. |
| Physical work environment | In their physical work environment, bike couriers experienced punctures and had their bikes stolen whereas car couriers were faced with parking fines as well as parking difficulties due to lack of or limited free parking spaces. Also, some participants experienced frightening and stressful situations of verbal abuse and physical violence in the parking lots. These experiences were both psychologically and financially stressful to them, thus diminishing their mental wellbeing at work. |
| Job satisfaction | Working in the platforms was the main source of income for many participants. While participants who had no education (5) in Finland were satisfied with the job, those who were students or those who had attained higher education in Finland expressed job dissatisfaction. The dissatisfied participants (15) regarded this job as a steppingstone to "better" jobs and did not project themselves in this job in the long term and were constantly looking for jobs within their professional lines. Reasons for dissatisfaction included low pay, lack of workers protection coverage, lack of promotion, laborious and unskilled nature of the job. |

indicated that evaluation criteria put couriers in a mental pressure of working within the evaluation criteria.

Also, study findings showed that Foodora couriers were punished for being ill or for experiencing accidents, even when informed to the platform. Punishing couriers for such circumstances yet platforms did not provide them with sick leave payments nor compensations for broken/stolen equipment is certainly an unfair "double punishment" which is not only unjust and inequitable but is undoubtedly psychologically stressful. This study further indicate that such practice enhances sickness presenteeism and generates fear for being ill or for experiencing accidents, which is psychologically burdening. Previous studies (e.g., Conway et al., 2014; Gustafsson & Marklund, 2011) have linked sickness presenteeism with mental health issues like depression and anxiety.

Accordingly, this study argues on the ground of the findings that the ranking system used in Foodora is a risk to the mental wellbeing of couriers. Besides, the psychological effects of ranking appraisal through the badge system were indignantly acknowledged by participants as stressful and frustrating. Specifically, badge demotion exacerbated their financial stress due to inadequate working hours or lack of access to shifts. Also, competition for "good shifts" generated psychological pressures of struggling to book shifts that suited their schedules. Likewise, frustrations and psychological stress were associated with efforts of trying to rise to top badges. In addition, the ranking system enhanced high-work intensity and an unhealthy invisible competition among couriers as they scrambled to be on the top badges. High work intensity was associated with poor psychosocial wellbeing of workers as they cited stress

and mental exhaustion. Nevertheless, previous studies (e.g., Boxal & Macky, 2014; Zajc & Kohont, 2017) have linked high work intensity with mental stress, mental exhaustion, fatigue, burn out, irritability and insomnia.

Concisely, the role of algorithms in Foodora was found to exert work pressure and control of couriers. This is a risk to their occupational mental wellbeing, which can, in the long run contribute to mental disorders like clinical stress, depression and anxiety.

4.2. Psychosocial facets of flexibility and autonomy

The findings of this study ascertained that flexibility was the main attraction for doing platform work. The flexibility of choosing own working hours in both platforms was perceived positively by participants. It enhanced their psychosocial wellbeing by enabling them to exercise the freedom of choosing own working hours. However, flexibility and autonomy in platforms differed.

While the findings portrayed a more flexible and autonomous working environment in Wolt, flexibility and autonomy were limited in Foodora as they were dependent on the badge numbers of couriers. In Foodora, couriers in higher ranks had the flexibility and autonomy of choosing own shifts compared to those in lower ranks who depended on the "left-over" shifts. Also, the shift allocation system in this platform abated couriers' flexibility and autonomy around working time as its allocation procedure forced couriers to "just accept" the available shifts whether it

suiting their timetables or not. Nonetheless, couriers in this platform were constantly monitored while at work, their work performance evaluated, they were ranked and punished by algorithms, which diminished their overall flexibility and autonomy. These, they acknowledged as stressful. Therefore, this study finds flexibility and autonomy in Foodora to be a fallacious illusion.

Meanwhile, although flexibility and autonomy in Wolt was appreciated by its couriers, this study finds it to be a double-edged sword to their psychosocial wellbeing. Participants benefitted from its psychosocial benefits of having own freedom to start and end work whenever they wanted and without control nor penalties. This full flexibility and autonomy enhanced their psychological wellbeing and as they mentioned, it made them feel like own bosses, which gave them the meaning of their work agreement i.e., freelancer. On the other hand, as revealed in the findings, this freedom also encouraged longer working hours, with couriers working till they were exhausted to continue. Coupled with high-work intensity and strenuous nature of the job, this study finds this as a risk to their psychosocial wellbeing and a risk factor to burn out. Burn out is an outcome of chronic work-related stress that is characterized by e.g., exhaustion and fatigue (Koutsimani et al., 2019; Maslach & Leiter, 2016). Besides, some participants had reported exhaustion and fatigue at the end their workday. Thus, this study finds that despite higher level of flexibility and autonomy in Wolt, it was at the expense of the health and wellbeing of its couriers.

4.3. Precarious challenges to psychological wellbeing

This study identified various aspects of a precarious work environment which substantially contributed to psychosocial stress among participants. These included low income, job insecurity, lack of social protection coverage, irregular working hours, lack of/limited remunerations and incentives. Notably, low income was a key contributing factor to the mental wellbeing of platform couriers in Helsinki. This was evident on its nexus with other psychosocial work stressors like high work intensity and workload, rating system, invisible costs, social relations, lack of/limited incentives and irresponsible traffic safety behaviours like over speeding and car parking issues.

Due to low income, participants worked longer hours under high work intensity, completing high workload for sufficient income. Some couriers worked in other jobs to supplement income. Consequently, poor work life balance was evident as they were deprived of their personal relations and social activities because of work related exhaustion and fatigue.

Though increased workload and longer work hours relieved some of their financial stresses, extensive studies (e.g., Bowling et al., 2015; Ford & Jin, 2013), have linked high workload with poor mental health and wellbeing like depression, mental strain, mental distress, mental fatigue and emotional exhaustion. Similarly, an association between poor work life balance and poor occupational mental wellbeing has been established (e.g., Kaur, 2017; Yang et al., 2018).

Additionally, job insecurity was determined as one source of stress among participants in this study. Lack of workers social protection coverage provided couriers with work insecurity which in turn exposed them to financial stress, sickness vulnerabilities and presenteeism. Also, possibilities of sudden dismissals for longer breaks in Foodora created fear of losing work among couriers in this platform. While some participants in this study who were working in Foodora had received dismissal warnings because of long absences, none of the participants reported having been suddenly dismissed as was the case with some food couriers in other studies (e.g., Eurofound, 2018; Veen et al., 2020). However, participants who worked in Foodora acknowledged long absences as a risk of dismissal following a one-time warning. On the contrary, participants who were working in Wolt expressed confidence in their work agreement with the platform as it did not discontinue their services unless couriers initiated it.

The experiences of couriers in their physical work environment were stressful as they encountered frequent physical, emotional and verbal violence. Also, stolen bikes and car parking fines as reported by couriers, were distressing for them. This study argues that while stolen bikes may be regarded as accidents, lack of compensation nor provision of temporal equipment by the platform for use is psychologically distressing. To the courier, as mentioned by some participants, it meant income loss in terms of extra costs as well as a possibility of missing work before finding alternatives. For Foodora couriers, it was a triple psychological burden as they were also penalized through the badge system which put them at a risk of getting proper/enough working shifts.

4.4. Challenges within the social work environments

This study also examined couriers' social relations at work. The findings revealed a lack of common office for couriers where they could meet and build solidarity and mutual support among themselves. Though many participants deemed an office unnecessary, this study argues that having a common office would be psychosocially favourable to them. This is justified based on their concerns on lack of cohesion among themselves, which some participants argued was to

uplift, share opinions and learn from each other. Also, as virtual interaction with the platforms' personnel was perceived stressful and frustrating by participants of this study, this indicates that having an office may enhance physical communication and interaction with the platform personnel as well. This lack of a common office for couriers, coupled with virtual interaction with the platform personnel, hinders solidarity among couriers hence diminishing social cohesion among them. Furthermore, studies (e.g., Fan et al., 2019) have established a strong link between social cohesion at work with positive psychological well-being among workers.

Further, this study determined that the attitudes of restaurant workers in domestic restaurants towards couriers were favourable and welcoming which contributed positively to their psychosocial wellbeing. On the other hand, a mentally distressing treatment of couriers by some restaurant workers in non-native restaurants was revealed in the findings. Aspects of racism, disparage, discrimination, contempt, verbal aggressiveness, and unfriendliness were common in non-native restaurants, which were apparently from Asian continents including Turkey. These unfavourable treatments towards couriers were certainly psychologically stressful and disturbing to them. Couriers expressed fear of facing these kinds of treatment and even sometimes rejected tasks from those restaurants which was a clear indication that they were psychologically affected by those treatments. While this finding was astonishing owing to the fact that all participants were also (im)migrants, the reasons for these unfavourable treatments were out of scope in the analysis of this study. However, based on couriers' experiences, it can be deduced that there were no set principles on the interaction between restaurants and food couriers, which could be a contributing factor to such treatments.

4.5. Poor career prospects as a psychosocial stressor

Generally, unemployment is deleterious to mental wellbeing and health (Batic-Mujanovic et al., 2017; Farré et al., 2018). Therefore, that these platforms provided their couriers with an easy entry to the labour market was mentally and financially relieving as they were able to meet their basic monthly expenses. In fact, this job was the major source of income for many participants. However, this study finds an extensive job dissatisfaction by participants, which was reportedly due to its low income, lack of occupational health insurance, lack of promotion, laborious nature of the job as well as the unskilled nature of the job. Notably, this dissatisfaction was mainly expressed by those studying in Finland or have attained higher education in Finland.

Accordingly, that participants were young, educated migrants, and that job satisfaction was dependent on their educational background, it is safe to say that they took on this platform work because of their disadvantaged position in the Finnish labour market as immigrants. They had no choices and saw the job as a steppingstone to "better jobs".

In addition, participants elucidated poor-career prospects due to lack of opportunity for career growth and advancements if they continued working as food couriers. Consequently, they constantly looked for jobs within the line of their academic qualifications. Doing jobs which do not match educational qualifications or jobs that do not facilitate professional and personal growth have been linked to stress and depression (e.g., Allan et al., 2016; Anderson & Winefield, 2011). Also, a strong link between job dissatisfaction and mental health and wellbeing has been established in previous studies (e.g., Faragher et al., 2005; Tatsuse & Sekine, 2013). Thus, the extensive job dissatisfaction among participants is an indisputable predictor of a negative mental wellbeing.

5. Future implications and conclusions

5.1. Study suggestions

On the grounds of the findings, this study provides the following suggestions for a healthier psychosocial work environment.

Increased pay: Though platforms in this study provided their food couriers with the opportunity to earn income, couriers in both platforms elucidated low income. Low income was determined to contribute largely to psychosocial stress among participants due to its nexus with other psychosocial stressors. Therefore, this study suggests better/increased income for couriers and reimbursement of certain work-related costs like compensations for broken equipment while at work and full distance compensations especially to and from delivery locations. Based on the findings, it is believed that with better income and compensations, couriers would not work under high pressure and would not work longer hours, which were detrimental to their psychosocial wellbeing and safety.

Fair or renouncement of the evaluation criteria in Foodora: This study ascertained that the algorithmic management and control was a core stressor for couriers in Foodora. It was undoubtedly a pivotal controlling mechanism for couriers working in this platform. It used automated decisions for the evaluation of couriers' performances and penalized them without considering the reasons for their inability to fulfil the set evaluation criteria. Thus, this study suggests fair evaluation criteria that would examine couriers'

failures to fulfil the set criteria and should accommodate emergency situations including illnesses and equipment breakdowns. Alternatively, the platform can completely do away with it. Wolt did not have an evaluation performance for its couriers, yet couriers in that platform reported a more flexible and autonomous work environment. Previous studies (e.g., Dupont et al., 2018; Goods et al., 2019) reported a similar finding among couriers working in food delivery platforms that did not evaluate couriers' performances through algorithms.

Set standard work protocols couriers in partner restaurants: This study revealed a mentally distressing treatment of food delivery platform workers by some restaurant workers in some non-native restaurants. The study surmised lack of uniformly set principles for couriers when picking deliveries from restaurants as one contributing factor to such treatments. Therefore, this study suggests similar set regulations for food delivery platform workers in all partner restaurants. This way, when picking or waiting for deliveries, couriers know where to sit, from what door to enter the restaurants, and where to wait for deliveries in cases of delay. An equal humane treatment of all food delivery platform workers by all partner restaurants is also suggested.

5.2. Possible limitations

The findings of this study draw from 20 semi-structured, in-depth interviews conducted with food delivery platform workers in Helsinki, whom were all unintentionally immigrants. The views of natives on the influence of food delivery platform work to their mental wellbeing were not presented in this study. However, the similarities of viewpoints among the interviewed twenty participants gave a strong insight on the psychosocial work environment of food delivery platform work in Helsinki. Also, participants had worked in the platform long enough which strengthened the reliability of these findings. Therefore, even with the inclusion of natives, this author believes that the findings would be relatively similar despite/except for the obvious vulnerabilities of immigrants (e.g., race and language barriers) in labour markets. Even though assumptions may not be evidential, it would be worthwhile to also examine the perceptions and experiences of native couriers for an in depth understanding on how they psychosocially relate to their work environment.

5.3. Conclusions and future research

This study determined that, although food delivery platform work provided income and labour market opportunities to its couriers, its work environment was psychosocially burdening. While these platforms

portray themselves with notions of flexibility and autonomy, this study revealed a paradoxical reality in Foodora. The high algorithmic control in Foodora which evaluated and penalized couriers, abated their flexibility and autonomy within the platform. On the other hand, despite higher levels of flexibility and autonomy in Wolt, they were at the expense of the health and wellbeing of its couriers, thus were a double-edged sword to their psychosocial wellbeing. Nevertheless, in both platforms, couriers encountered profuse precarity, poor work relationships, longer working hours and high-work intensity.

These findings portray a psychosocially burdening work environment which is detrimental to the mental wellbeing of food delivery platform workers. Its psychosocial predictors of work-related mental health challenges were clear hence posing enormous risks to the occupational mental health and wellbeing of its couriers. Thus, this study recommends future longitudinal studies that would examine the association between food delivery platform work and occupational mental health of couriers working through such platforms.

Also, results show deficit on decent work and productive employment as set in sustainable development goals 8.5 and 8.8. Hence, this study suggests interventions and policies that aim at improving its psychosocial work environment for a more decent and healthier work environment that enhances mental health and wellbeing of its couriers. These findings are therefore useful to policy makers and actors of platform work as reference in the implementation of interventions and policies aiming to improve the working environment of platform workers in Finland.

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Notes on contributor

Benta Mbare (MHSc; RN), is doctoral researcher in the doctoral programme in health sciences in the faculty of social sciences at Tampere University, in Tampere, Finland. While she has a multifacated expertise in the field of health sciences, her current research is focused on the broader field of occupational health and wellbeing with a focus on

work psychology and is examining the platformisation of work.

Ethical approval and considerations

This study was part of a project proposal by Professor Meri Koivusalo of Tampere University, which received an ethical approval from the Tampere University Research Ethics Board. The reference number for the approval was “lausunto 54/2020 lausuntopyynnöstä 28/2020: “Tutkimuskokonaisuus Transportation and Food Delivery Platforms during COVID-19/RRR-platform” (professori Meri Koivusalo, kansanterveys-tiede/-politiikka). Nonetheless, the study was guided by and carried out in line with the ethical principles drawn up by the Finnish National Board on Research Integrity, TENK (see TENK, 2019). In accordance, respect, privacy, anonymity and confidentiality of participants were ensured all throughout the research process right from the beginning to the end. Thus, participants were identified by codes (i.e., FH01, through to FH20). Before each interview, explicit guidance on the right to withdraw from the research and/or stop the interview were given. Participants’ consent to participate in the interviews were obtained by signing a consent document for (face-to-face interviews) and by allowing recording of their consent for (virtual interviews).

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