JOB QUALITY GAPS BETWEEN MIGRANT AND NATIVE GIG WORKERS: EVIDENCE FROM POLAND•

Published in New Technology, Work and Employment

Zuzanna Kowalik♦

Piotr Lewandowski♣

Paweł Kaczmarczyk♥

Abstract

The platform economy has grown worldwide, opening labour markets but raising concerns about precariousness. Using a tailored, quantitative survey in Poland, this article studies taxi and delivery platform drivers' working conditions and job quality, focusing on the gaps between natives and migrants. Migrants' job quality is noticeably lower regarding contractual terms of employment, working hours, work-life balance, multidimensional deprivation, and job satisfaction. Migrants who started a platform job immediately after arriving in Poland are particularly deprived. They also cluster on taxi platforms, which offer inferior working conditions compared to delivery platforms. The platform economy can be an arrival infrastructure for migrants. However, in New Immigration Destinations such as Poland, where the ethnic economy is underdeveloped and institutional support for migrants is weak, poor working conditions on platforms can exacerbate migrants' labour market vulnerabilities and hinder mobility to better jobs, as platforms often provide limited opportunities for skill development.

Keywords: platform work, immigrant workers, job quality, platform economy, on-demand work, precarisation

---

• We thank Barbara Jancewicz, Arina Vasilenko, Yana Moldovan, and Ignacy Jóźwiak for invaluable help with data collection, and Agata Górny and Jan Drahokoupil for useful comments to the survey. We thank participants of the 2022 Jobs and Development conference in Cape Town and Perspectives on (Un-)Employment workshop in Nuremberg for useful comments. This paper was financially supported by the The European Social Fund – Operational Programme Knowledge Education Development as a part of the "System for forecasting the Polish labour market" project. The European Social Fund bears no responsibility for the results and the conclusions, which are those of the authors. The usual disclaimers apply. All errors are ours.

♦ IBS – Institute for Structural Research, University of Warsaw. zuzanna.kowalik@ibs.org.pl. Corresponding author.

♣ IBS – Institute for Structural Research, IZA, RWI Essen. piotr.lewandowski@ibs.org.pl.

♥ Centre of Migration Research at the University of Warsaw, IZA. p.kaczmarczyk@uw.edu.pl.

1. Introduction

The last decade has seen a rapid development of the platform economy. Platform workers who provide on-demand services through apps often have non-standard forms of employment or are classified as independent contractors (Urzi et al., 2020). Usually, their working conditions and job quality are inferior to those in open-ended, full-time employment (De Stefano, 2015). Qualitative research stresses the prevalence of job insecurity, algorithmic control, low wages, and unpredictable schedules (de Groen et al., 2018; Wood et al., 2018). At the same time, the platform economy increasingly employs migrants (Altenried, 2021; Lam and Triandafyllidou, 2022; van Doorn and Vijay, 2021), for whom the pros and cons of platform work may differ from those experienced by natives.

This article examines the hypotheses that significant job quality gaps exist between migrants and natives and between workers of different types of geographically tethered platforms, using evidence from Poland. It also identifies key dimensions of these gaps. Research on migrants' employment in the platform economy has been expanding (Lata et al., 2023), but receiving countries differ in regulations, visa regimes, and social security coverage. Therefore, studying this phenomenon in various contexts, including Central and Eastern Europe, is crucial. Our study focuses on ride-hailing and delivery services, Poland's largest segment of the platform economy. The "Polish Platform Work Survey" (PPWS), the largest survey of platform workers in Central and Eastern Europe, was conducted to accurately quantify platform workers' job quality, including its objective and subjective dimensions. As such, it addresses the limitations of labour force surveys that fail to capture platform work precisely (Huws et al., 2018; O'Farrell and Montagnier, 2020).

The article's first contribution is documenting gaps in job quality between migrant and native workers, as well as between migrants with different backgrounds, in the context of New Immigration Destinations (NID, Górny & Kaczmarczyk, 2020; McAreavey, 2017). Poland is an emblematic NID: it recently experienced a massive inflow of foreigners while lacking a migration policy, integration framework, and enclave economies ready to absorb newcomers. The study finds that migrants are significantly more likely to experience deep deprivation in job quality than otherwise similar native workers. First-job migrants, namely those who did not have another job in Poland before starting platform work, particularly stand out with their low multidimensional job quality and job satisfaction. NIDs often lack the infrastructure to support arriving migrants, leading to higher vulnerability among first-job migrants who depend on platform work. Newly arrived migrants are particularly vulnerable as they often lack country-specific human capital and access to social capital, such as networks (Wright and Clibborn, 2019). Indeed, migrants working on platforms in Poland tend to lack ethnic networks, compared to, inter alia, well-established communities such as Vietnamese. As over 60% of first job-migrants have stayed in Poland longer than one year, platform work can hardly be described as a transitory job, as opposed to other cases of infrastructures for arriving migrants (Górny & Kaczmarczyk, 2020).

The second contribution shows heterogeneity in job quality between workers of seemingly similar platforms – food delivery platforms exhibit superior working conditions to ride-hailing platforms. First-job migrants cluster into ride-hailing platforms, which contributes to their inferior working conditions. Previous research has primarily studied the difference between offline and online platform work (Dunn, 2020). Ride-hailing platforms,

in particular, might reinforce the precariousness and marginalisation of migrant workers, contributing to broader socio-economic inequalities. The paper discusses potential factors behind this disparity.

The third contribution is enhancing the discussion on subjective and objective job quality measures using an innovative method for platform work research. The study examines four job quality deprivations (excessive working hours, informality, low earnings, and lack of work-life balance) combined in a multidimensional index using the method common in poverty studies (Alkire and Foster, 2011). It finds a strict relationship between deprivations in working conditions and self-reported job satisfaction. Importantly, the gap in the number of experienced deprivations drives the average gap in job satisfaction between migrant and native platform workers.

Finally, this article contributes to the current sociological discourse surrounding emerging forms of work enhanced by digital technologies. Platform work evolves from non-standard employment arrangements, such as zero-hour contracts, temporal employment agencies, and mini-jobs (De Stefano, 2015), contributing to the reframing of job insecurity as flexibility and autonomy (Vallas and Schor, 2020). By emphasising the potential benefits of flexibility, platforms downplay the downsides of job insecurity, such as unpredictable income, lack of social protections, and limited opportunities for career advancement (Pangrazio et al., 2023). This rhetoric aligns with the broader neoliberal agenda, prioritising market-driven individualism, deregulation, and worker rights and protection erosion (Azzellini et al., 2022). It normalises precarious working conditions, benefiting platform companies and the broader capitalist system.

2. Job quality of platform work – conceptual framework and hypotheses

2.1. Approach to the concept of job quality

Job quality is an interdisciplinary construct that combines pecuniary (pay) and non-pecuniary dimensions such as hours of work, prospects (for instance, job security, promotion opportunities), status (e.g., autonomy, independence, prestige), how hard, dangerous, or stressful the job is, and relationships with co-workers and supervisors (Clark, 2005). Quantifying them requires subjective and objective indicators (Muñoz de Bustillo et al., 2011). European countries have greatly benefited from the development of the European Working Conditions Survey (EWCS), reflecting the EU goal of achieving "more and better jobs" (Burchell et al., 2014). Building on it, the Eurofound framework identified five dimensions of job quality: pay, intrinsic quality of work, employment quality, health and safety, and work-life balance, combined into a composite measure (Hurley et al., 2013). The OECD approach identified three dimensions: earnings quality, labour market security, and quality of the work environment (Cazes et al., 2015). Moreover, subjective job satisfaction should complement objective and quantifiable working conditions (Clark, 2005). Within this approach, job satisfaction is an overarching and self-assessed measure that can capture the effect of working conditions, including those that available data cannot quantify, and reflecting workers' values (Clark, 1996; Locke, 1969).

2.2. Concerns surrounding the quality of platform jobs

Platform workers face various job quality issues that partially stem from being classified as independent contractors (Tassinari and Maccarrone, 2020). They typically lack benefits granted by the labour code, including

health insurance, paid sick leave, paid vacation, and unemployment benefits (Forde et al., 2017). Independent contractors are often not entitled to the minimum wage, and some platform workers earn below that level (Muszyński et al., 2022). Long working hours, required to earn enough for subsistence (Vieira, 2023), can cause fatigue, an increased accident risk, and adverse health outcomes (Glavin and Schieman, 2022). Many studies look at those deprivations separately, but none has quantitatively analysed the multidimensional job quality of platform work.

Additionally, platform workers are often segmented according to their economic reliance on the job (Tassinari and Maccarrone, 2020). The precariousness and perceptions of the quality of their jobs and preferences for flexibility might vary, which could be reflected in the choice of platforms. Workers on online platforms, mainly those highly skilled, tend to exert more control over their labour process than those on geographically tethered platforms. However, evidence is scarce on the job quality differences within geographically tethered platforms, especially ride-hailing and delivery platforms.

In the context of platform work, accounting for pay, hours, contractual arrangements that proxy labour market security and informality, and work-life balance is of utmost importance. Platform workers often work unsocial hours, have more working days than general workers (Yoo et al., 2024), and are desperate for money (Ravenelle, 2019). Their working time disparities are linked to whether they perceive platform work as a side hustle, particularly suitable for students, or as a full-time job. Consequently, part-time drivers may select peak demand hours more often, so hourly earnings may vary. Cook et al. (2021) showed a concave hours/earnings relationship – drivers working over 30 hours a week earn 7% less per hour than drivers working fewer than 10 hours a week, as the latter cherry-pick high pay hours.

Platform work is embedded in the informal economy (Cieslik et al., 2022), but their overlap may differ depending on the legal framework. In Poland, platform workers usually register as self-employed or engage with third-party businesses (intermediaries) that offer contracts which usually do not guarantee all employment rights or social security. These contracts often are task-based agreements providing health insurance and social security contributions, but no sickness insurance or paid vacation. Fictitious contracts for workers renting the intermediary a bike or car also exist. They allow intermediaries to circumvent mandatory social security contributions, while workers benefit from lower tax rates (8.5% instead of 12%) and can easily conceal revenue since tax is not automatically deducted. Sometimes, workers, particularly migrants, have no written contract. Such informality hinders job stability and deprives workers of a legal foundation to assert their rights in case of fraudulent activity.

Work-life balance is a pivotal concept in discussions on job quality, especially in the context of globalisation and technological changes (ILO, 1999). While flexible working time arrangements may support it (Glavin and Schieman, 2022), in precarious work, the celebration of work-life balance may be undermined because economic productivity dominates other aspects of a person's life (Anderson, 2010). Therefore, ‘zero-hours contracts’ and similar flexible scheduling practices (including platform work) might hinder work-life balance (Wood, 2016). Moreover, the increase of full-time workers in the platform economy contributes to 'de-flexibilisation' or 'sticky labour' (Sun et al., 2021). To adapt to demand surges, workers increasingly opt for fixed schedules over flexible ones (Lata et al., 2023). In consequence, it is particularly relevant to understand platform workers' work-life balance.

2.3. Platform work as migrant work

Platform work attracts migrants worldwide (Altenried, 2021; Lam and Triandafyllidou, 2021; Lata et al., 2023; Zhou, 2022), mainly with its low entry barrier and swift recruitment process, making it an ideal first job after arrival (Barratt et al., 2020). Platforms form "arrival infrastructure" (Meeus et al., 2019), integrating migrants into low-wage labour markets despite required documentation (van Doorn and Vijay, 2021). Without a continuous influx of migrants, platforms may even struggle to operate in some markets (van Doorn et al., 2022).

Migrants encounter a myriad of constraints in traditional labour markets and face underemployment when opportunities afforded by their visa and residency statuses are limited (Lata et al., 2023). Additionally, they contend with discrimination (van Doorn and Vijay, 2021). The platform economy has emerged as a pivotal force in reshaping these dynamics. However, it often propelled migrants toward semi-formal self-employment, effectively circumventing restrictions on earnings and work permits (Abkhezr and McMahon, 2022). Platforms' narrative extolling the virtues of hard work and perseverance, asserting that success knows no bounds (Pettica-Harris et al., 2020), can particularly appeal to migrants striving for success (Lata et al., 2023). However, the platform economy represents a mixed blessing for migrants – it offers minimal job security, irregular income, risk of skill atrophy, and limited career advancement opportunities (Abkhezr and McMahon, 2022; Prassl, 2018).

Platform work aligns with the trend of casualisation of work, dismantling the Fordist model of standard employment (Lata et al., 2023) and the increasing reliance on self-employment. Migrant labour has historically been more precarious, undervalued, and casual than native labour (Altenried, 2021). This gap in initial conditions and reference points may translate into a divergence of migrants' and natives' experiences of platform work. As alternative options for migrants have typically deviated from the "standard employment" model, the emerging "flexible" forms may affect migrants more and provide them with "hyperflexible working arrangements". For example, 'false self-employment' was widespread among migrants in the UK's construction sector well before the advent of platform work, underscoring the longstanding nature of misclassification (Anderson, 2010).

The disproportionate presence of migrants in platform work mirrors their overrepresentation in occupations and sectors characterised by inferior job quality. Migrants' job quality is often below that of natives in the same occupation (Adler and Adler, 2004), especially if their stay is informal or inadequately documented. Migrants often lack alternatives, so they are more accepting of unfavourable working conditions, long or unsocial hours than natives. The "dual frame of reference" concept can explain it: jobs perceived as low status in the host country are still attractive for migrants who compare them to less appealing wages and working conditions in their home country (Piore, 1979). Despite inferior working conditions, immigrants tend to exhibit higher job satisfaction than natives due to a different comparative framework (Markova et al., 2015). Migrants may assess platforms' job quality more positively than natives as alternatives available to migrants are less attractive, specifically may lack flexible schedules and relative autonomy of platform work (Goods et al., 2019), even if platforms contribute to their exploitation (Lata et al., 2023).

2.4. Migrants and platform economy in New Immigrant Destinations

In economic terms, migrants' integration encompasses achieving a comparable labour market position as that of locals (Barrett and Duffy, 2008) and progressive incorporation into the economic institutions of the host country, i.e. structural integration (Bosswick and Heckmann, 2006). It is especially challenging in the so-called New Immigrant (or Immigration) Destinations (NIDs), characterised by the (relative) size and speed of the influx, the ethnic homogeneity of the destination areas due to their historically limited experience with immigration, striking differences between the demographic characteristics of the new arrivals and the resident population, and the lack of institutional infrastructure to support immigrants and meet their needs, especially in the early stages of reception (Winders, 2014). The latter typically constitutes the greatest challenge, as immigrants in NIDs lack access to 'established ethnic resources' such as social capital (migration networks) and the enclave economy (Flippen and Farrell-Bryan, 2021; McAreavey, 2017; Winders, 2014). Since the early 2010s, such processes and challenges have been documented in the UK and Ireland (Doyle, 2018; McAreavey, 2017), Nordic countries (Haandrikman et al., 2023; Rye and Slettebak, 2020), Southern European countries (Corrado et al., 2018; Fonseca et al., 2014), and Central and Eastern European countries (Górny and Kaczmarczyk, 2020; Křížková and Ouředníček, 2020).

The case of NIDs is highly relevant because the patterns of immigrants' arrivals in "new" places become increasingly complex (McAreavey and Argent, 2018), mainly due to demand factors – newcomers are attracted by new economic opportunities arising from structural developments (e.g. the agri-food sector, construction) or changes in labour relations (e.g. the platform economy, as it disrupts traditional employment practices). However, NIDs usually do not provide key resources for successful labour market integration: a well-developed reception infrastructure and easy access to migrant networks or migrant enclaves (Ager and Strang, 2008; Alba and Foner, 2014; Harder et al., 2018). Recent migration to NIDs often involves accelerating immigration beyond traditional gateways, with platform work as one of the new entry points (Flippen and Farrell-Bryan, 2021; Lam and Triandafyllidou, 2022; McAreavey and Argent, 2018). Studying the job quality of platform work for migrants becomes imperative, especially distinguishing between newly arriving migrants and those more settled.

2.5. Research hypotheses

Based on the theoretical background and available evidence, we formulate three research hypotheses:

1. Platform work's objective and subjective job quality differs between migrant and native workers.

Migrant background and other demographic traits can influence workers' orientations towards platform work and labour market navigation skills, leading to average differences between migrants and natives (Lata et al., 2023). Migrants might more favourably assess the platform job quality due to limited alternatives and the "dual frame of reference" (Piore, 1979). Conversely, they might work more intensely and experience more isolation, instability, or skill mismatch. Work and residency rules, networks and intermediaries may shape migrants platform choices so they differ from those of natives. These orientations and expectations translate into working conditions (e.g., working time) and the choice of platforms (ride-hailing platforms offer longer and more intense work than delivery platforms). Longer and "unsocial" working hours can reduce hourly earnings, as drivers work during low demand, and negatively impact work-life balance (Glavin and Schieman, 2022). Finally, inferior working conditions can translate into lower job satisfaction.

2. Job quality differs between various types of geographically tethered platforms.

The association between platform type and job satisfaction can be direct or mediated by working conditions. Research on job quality differences between types of platforms is limited, but the results of the Fairwork[1] project indicate that delivery platforms generally receive higher ratings compared to ride-hailing and other platforms. Policies or pricing algorithms that workers perceive as unfair, safety issues, or communication problems (e.g., driving with drunk passengers late at night)—might be more typical to ride-hailing platforms. Working conditions also likely differ. For instance, the average working time on taxi platforms might be higher, as the demand for taxis spans all around the clock, much longer than for delivery. Therefore, job quality differences between couriers and drivers might reflect several mechanisms. First, workers may deliberately choose taxi platforms to work more intensely, but longer hours may reduce hourly earnings. Second, taxi platforms' longer and more challenging working hours hinder work-life balance and job satisfaction. Third, taxi drivers may suffer more strained relationships with customers who could be disrespectful or hostile, especially towards migrants. Contact with customers is shorter on delivery platforms.

3. Migrants who started platform work after arrival may experience lower job quality than long-term migrants.

More research is needed on how visa categories, legal statuses, and the experience of platform work interact and intersect (Lata et al., 2023; Orth, 2023). However, newly arrived migrants tend to have weaker language skills, poorer understanding of the local labour market, lower expectations, and a more instrumental attitude to work (Anderson, 2010). These different orientations toward platform work and weaker labour market navigation skills might make newcomers more vulnerable than long-term migrants, especially in the platform economy. Hence, we focus on the subpopulation of migrants for whom platform work is the first job in Poland ("first-job migrants"). Inexperience in the Polish labour market can affect the platform choice, working conditions, and job satisfaction. We argue that the risk of vulnerability for migrant workers, particularly newcomers, is critical in NIDs, as migrants lack efficient reception/integration infrastructure and ethnic economies.

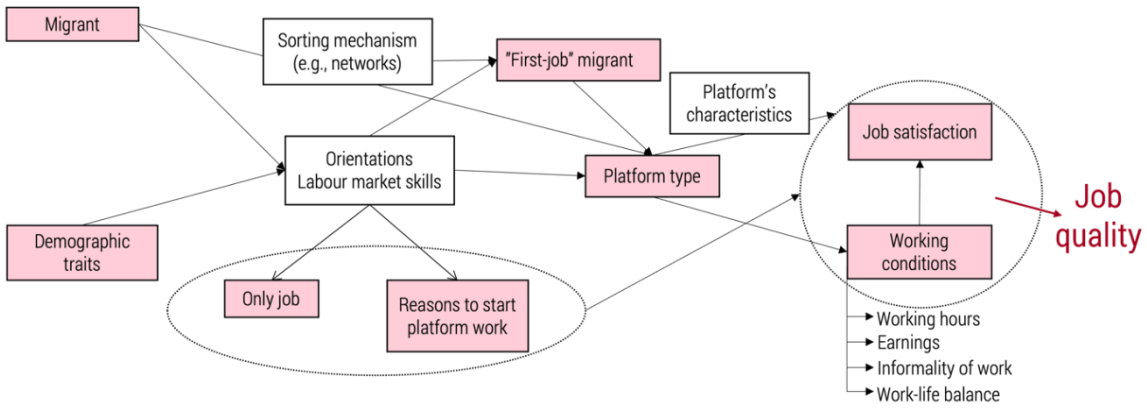
Figure 1 presents the conceptual framework. It connects factors included in the literature review, our hypotheses, and interactions between them. We control for having another job and reasons to start platform work as key proxies for the orientations toward platform work. Platform dependence is a key contingency explaining differences in the perceptions of the quality of platform work (Schor et al., 2020). Ravenelle (2019) also identified "types" of platform workers based on their motivations. Therefore, we group motivations for starting platform work into "positive" reasons, such as flexibility, earning additional income, and trying out new things, and "negative" reasons, such as having no income, losing income due to the COVID-19 pandemic, or seeing no job alternatives[2]. We expect that people who started platform work for negative reasons and those who worked only on platforms might be more determined to work intensively on platforms than those who

[1] https://fair.work/en/fw/homepage/ Fairwork is an action-research project evaluating working conditions on labour platforms worldwide against measures of fairness. Fairwork researchers grant platforms points according to five principles: fair pay, fair conditions, fair contracts, fair management, and fair representation.

[2] Additional information on this categorisation is provided in Table A4.

started for positive reasons and combined it with other jobs. This difference might translate into differences in experienced working conditions and perceived job quality.

Figure 1. Operationalisation of the conceptual framework of job quality in platform work



Source: Own elaboration

3. Key facts and institutional context of platform work and immigration in Poland

Platform work in Poland is relatively marginal: 2-3% of the working-age population undertook it in 2019-2022, with transportation being the most common service (Piasna et al., 2022) and migrants constituting 1/3 of platform workers (Beręsewicz et al., 2021). It is relatively unregulated, similar to other CEE countries and in contrast to some Western European countries. Since Uber's entry in 2014, platform firms have classified themselves as technology rather than ride-hailing companies, so they were not regulated by the Law on Road Transport (Mazur and Serafin, 2022). Since 2016, Uber has required drivers to register as self-employed. Other platforms followed, and many intermediaries (so-called 'fleet partners') emerged (Mika and Polkowska, 2022). These partners cooperate with platforms on a business-to-business basis and hire workers primarily using short-term contracts that do not provide an employee status. Qualitative research illustrates the precariousness of platform work – long working hours, low income, lack of social protection, and often a lack of written contracts (Polkowska, 2019).

In Poland, atypical employment has expanded since the early 2000s (Lewandowski and Magda, 2018), exemplifying the widespread use of temporary contracts and poor enforcement of labour standards as drivers of precarious work in CEE countries. Poland's share of temporary contracts has been among the highest in the EU. Civil law contracts – intended for fixed-term commissions and tasks – were widely used in regular employment relationships, allowing employers to evade social security contributions and dismissal protection (Prosser, 2016). Worker misclassification was present in Poland long before the emergence of the platform economy.

The platform economy's growth overlapped with the sudden shift in migration balance and Poland's transition into a net immigration area (Górny and Kaczmarczyk, 2020). Historically, Poland was an emigration country, particularly after the EU accession in 2004. According to Statistics Poland, in the early 2010s, about 2.5 million Polish citizens stayed abroad, while only 110,000 foreigners lived in Poland. The migration outlook changed

dramatically after the 2014 war in Donbas. Poland's labour shortages, robust economic growth, the ultra-liberal attitude of the government to the influx of migrant workers from the post-Soviet countries, and mushrooming intermediaries (e.g. employment agencies) enabled large-scale immigration (Górny and Kaczmarczyk, 2019). The number of adult foreigners in Poland rose to 750,000 in 2016 and 2.2 million in 2019 and continued to grow, making Poland a key migrant destination in Europe (Kaczmarczyk, 2023).

Ukrainians form a dominant immigrant group – in 2021, they constituted 5% of workers in Poland (and, depending on the type of the work permit, between 70 and 98% of all migrant workers – Górny and Kaczmarczyk, 2020). However, the inflows have increasingly involved other nations: in 2021, $^{1}/_{3}$ of temporary or permanent stay applicants were from countries other than Ukraine. These migrants, mainly from Central or South Asian countries, arrive primarily through private recruitment and their position differs from that of well-established groups (mainly Ukrainians). They have limited migration experience, often lack access to migrant networks, and are usually tied to one specific employer, which makes them more vulnerable to dependency (Górny and Kaczmarczyk, 2019).

4. Data collection and methodology

The article uses data from the "Polish Platform Work Survey" (PPWS), which aimed at quantifying the vital aspects of job quality of platform work that would allow identifying the differences between migrants and natives[3].

4.1. Participants recruitment and survey data collection

The PPWS was conducted using the Computer Assisted Web Interview (CAWI) in January and February 2022. It was available in four languages – Polish, English, Russian, and Ukrainian – used by the native population and dominant migrant groups. It consisted of 52 questions and 372 people completed it. This makes PPWS the largest survey of platform workers in Central Eastern Europe.

Facebook adverts targeting specific socio-demographic groups were used to recruit respondents. While this non-probability sampling method can introduce biases– particularly if certain groups are less likely to use Facebook or engage with ads (Schneider and Harknett, 2022) – it offers several advantages and allows recruiting diverse respondents when probability sampling is unfeasible. The extensive user base of Facebook covers various demographics, facilitating surveying representative samples and hard-to-reach populations. Targeting ads by age, gender, location, and language ensures invitations reach diverse platform workers. Evidence indicates that Facebook profiles reflect accurate user information, adding credibility to the collected data (Kosinski et al., 2015). Facebook recruitment prevents biases that might arise if a platform or intermediary distributed the survey, potentially targeting a specific subset of workers. Platform workers are also familiar with

[3] Table A9 of the Appendix provides a comprehensive list of all variables used in the model along with the corresponding survey questions.

it, as platforms and intermediaries use similar methods. Gevaert et al. (2024) found that Facebook ads can effectively reach populations similar to those in probability samples, like the LFS Module on platform work.

The ads targeted groups distinguished by age, gender, place of residence and the language used on Facebook (Table 1). Quotas were set according to these characteristics, using Beręsewicz *et al.* (2021) estimates of the demographic structure of taxi and delivery platform workers in Poland based on applications' data.

Table 1. Platform workers according to residence, gender, age, and nationality in Poland

	Estimated sample structure in Beręsewicz et al. (2021) (%)	PPWS sample structure (%)
Residence		
Warsaw	39.6	39.2
Cracow	20.6	17.7
Other cities	39.9	43.0
Gender		
Men	88.8	87.4
Women	11.2	9.9
Not disclosed	-	2.7
Age		
18–30	65.5	54.8
31–50	30.7	38.2
51–64	3.8	7.0

Source: Own elaboration based on PPWS and Beręsewicz et al. (2021).

The sample's representativeness is high also regarding platform types. The highest number of respondents reported working for Uber and Uber Eats (209 people), followed by Bolt (188 people) and FreeNow (107 people). The same platforms were the most popular according to app usage data (Beręsewicz *et al.*, 2021). The majority of respondents (57%) worked on taxi platforms, especially among migrants (61% as compared with 55% among natives).

4.2. Sample structure – demographic characteristics

The surveyed platform workers were predominantly men aged 18-44 years, living in big cities, who made up 75% of the sample – and who dominate the population of platform workers in Poland. Women's share was only 10%. Young people (under 30) dominated. Most respondents (63%) had only Polish citizenship, followed by Ukrainians (25%), Belarussians (3%), and Indians (3%). The sample also included citizens of 13 other countries, such as Turkey, Russia, Georgia, Azerbaijan, Chile, and Zambia, constituting 6% of observations. Most platform workers were jobless just before starting platform work. Nearly ¼ of Poles declared to be in education or training, three times the share among migrants.

The share of migrants with tertiary education was twice as high as that of natives (41% vs 21%,), and the share of those with primary education was also higher (15% vs 8%) while the share of those with vocational or secondary education was lower among migrants (44% vs 72%). Both Polish and migrant platform workers were

less educated than their peers in the general population (49% of native and 42% of migrant workers were tertiary educated).

Other data sets served to create reference groups in the general population: 2020 Labour Force Survey (LFS), 2020 Household Budget Survey (HBS), the survey of Ukrainian migrants in Warsaw, conducted in 2019 by the Centre of Migration Research (henceforth called the CMR survey), and the 2015 European Working Conditions Survey (EWCS). The CMR survey is the largest Polish survey of migrants. It covers Ukrainians – a dominant migrant group – but here, it provides a reference group for the entire migrant population as no surveys of other groups exist. Our results were compared to the subsample of Polish drivers (LFS and HBS include very few migrants) or Ukrainians employed in transport (CMR survey). The 2015 EWCS provided reference groups for job quality in the general population of workers in ISCO 7 (craft and related trade workers) and ISCO 8 occupations (plant and machine operators and assemblers). We used the 2015 EWCS as the most recent EWCS collected in 2021 lacks questions on job satisfaction and earnings. For intragroup comparisons, the reference groups were limited to samples of men aged 18-44 living in cities with more than 100,000 people, constituting 68% of the PPWS sample.

4.3. Measurement of job quality in platform work

We create two overarching measures of job quality. First, a multidimensional job quality index combines four dimensions, D: informality (measured by having a contract), working conditions (working hours and earnings), and self-assessed work-life balance. We use the methodology proposed by Alkire and Foster (2011) for poverty measurement. This approach is similar to Sehnbruch et al. (2020) and Bhorat et al. (2021), who used the multidimensional approach to study job quality and labour law violation, respectively. Second, we study self-reported job satisfaction, which is crucial for assessing the quality of work (Kalleberg and Vaisey, 2005; Seashore, 1974). This enables examining job quality deprivations' confluence and relationship with low job satisfaction.

To create the multidimensional index, we use the dual-cut-off approach. First, we define a deprivation matrix for every worker *i*, assigning a value of one if they were deprived in a given dimension d ∈ D and a value of zero otherwise. We use the following cutoffs: low pay (earning below 60% of the median hourly earnings in the total economy), long hours (working 60 or more hours per week), no contract, and no sense of work-life balance. These indicators captured complementary information: their correlations were low (none exceeds 40%, Table 2), and redundancy measures were low to moderate (none exceeds 60%, Table 2).

Second, for each individual, we sum up deprivation scores with equal weights, i.e. $w_d = 1/4$ for every $d \in D$, to obtain the weighted deprivation score c_i (worker's weighted share of deprivations). We consider a worker as affected by low multidimensional job quality if their weighted deprivation score c_i was equal to or higher than the cutoff, $k = 0.5$, i.e. a worker endured at least two out of four deprivations. The headcount ratio (H) – the share of workers with low multidimensional job quality – and the distribution of deprivations among workers allowed for comparing the multidimensional job quality between worker groups.

Table 2. Cross-correlations and redundancy measures (%) of single dimensions of job quality in platform work

	Low pay	Excessive hours	No contract	No work-life balance
Cross-correlations				
Low pay	1.00			
Excessive hours	0.35	1.00		
No contract (informality)	0.29	0.25	1.00	
No work-life balance	0.26	0.37	0.24	1.00
Redundancy measures				
Low pay	n/a			
Excessive hours	0.58	n/a		
No contract (informality)	0.44	0.45	n/a	
No work-life balance	0.56	0.58	0.52	n/a

Note: The redundancy measure between a pair of indicators: the share of workers who experience deprivation in both indicators, divided by the share of workers who experience deprivation to the less common indicator (Alkire et al. 2015).
Source: Own elaboration based on PPWS.

4.4. Econometric methodology

To study the job quality gaps between native and migrant workers, we estimate logistic regressions, with two overarching measures – multidimensionally low job quality (deep deprivation) and lack of job satisfaction – as dependent variables:

$$\Pr(\omega_{jcu} = 1) = F(\beta_0 + \beta_1 X_j + \beta_2 \lambda_c + \beta_3 \gamma_u + \varepsilon_{jcu}) \quad (1)$$

where ω stands for binary job quality outcomes (deep deprivation, no job satisfaction), $F(Z) = \frac{e^Z}{1+e^Z}$, j stands for an individual, X_j is a vector of demographic characteristics (gender, age, education, migrant status), and λ_c is a vector of labour market status controls (having another job, starting platform work due to no alternatives, type of platform one works for)[4]. γ_u is a vector of indicator variables for the number of deprivations an individual experiences and was used only in the fourth model for lack of job satisfaction.

We estimate three model variants. First, we control only for demographic characteristics. In the second model, we distinguish between "first-job" and long-term migrants[5]. In the third model, we add variables proxying orientations toward platform work (using binary variables "reasons to start platform work" and "only job") and distinguishing between various types of platforms. Additionally, we assess if more deprivations experienced are associated with an increased likelihood of job satisfaction.

[4] For the descriptive statistics on the labour market status, see Table A1 in the Appendix

[5] Additional information on the differences between these two groups is provided in Table A2 and Table A3 of the Appendix

5. Findings

5.1. Dimensions of job quality – descriptive evidence

On average, migrants worked longer than Poles (50 hours per week vs 41 hours) while their hourly earnings were similar: natives' median amounted to 20 PLN/4.45 EUR[6] per hour, migrants' – to 22 PLN/4.89 EUR per hour (Table 3). Working time and earnings varied between platform types. Ride-hailing platform workers had the longest weekly working hours (51 on average). In contrast, delivery platform workers reported higher hourly net earnings (median of 24 PLN/5.33 EUR) than ride-hailing platform workers (median of 20 PLN/4.45 EUR). First-job migrants faced particularly concerning working conditions, working 31% longer and earning 43% less than Polish workers. This disparity could be attributed to first-job migrants' higher economic reliance on platform jobs and more common work on ride-hailing platforms that typically involved longer hours.

Compared to the general population, native platform workers worked slightly shorter weekly hours than drivers' in the reference group (44 hours). The gap in working time between Poles and migrants also existed outside the platform economy. The median hourly earnings of platform workers were higher than among demographically similar drivers in the reference groups: Polish drivers (PLN 19/4.22 EUR) and Ukrainians employed in transport (PLN 17/3.78 EUR, Table 3). However, platform workers usually incur additional car rental, fuel, and partner commission costs. After deducting those expenses, the hourly rate of platform workers might be lower and below the minimum wage in Poland (PLN 20/4.45 EUR before taxes).

Migrants' platform jobs were informal three times more often than natives' (32.8% vs 10.3%, Table 3) and than Ukrainians' in the reference group (12.5%). This translated to limited access to health insurance. Migrant platform workers lacked health insurance twice as often as Polish platform workers (and nearly four times more often than Ukrainians employed in the traditional economy, 38.3% vs 9.6%)[7]. This disparity was larger among platform workers than in the general population. Still, most Polish platform workers (62.2%) had precarious contracts: project-based, task-based, or rental contracts.

Migrant platform workers, on average, enjoyed work-life balance less often than natives. 35.1% of all migrants and 52.8% of first-job migrants stated that their work hours did not fit well with their family/social commitments, compared to 24.8% of natives (Table 3). Ride-hailing platform workers lacked work-life balance more often (38.9%) than delivery workers (14.3%). The share of Polish platform workers without work-life balance was similar to that in the traditional economy.

Finally, migrants were satisfied with their jobs less often than Polish workers. 58.8% of all migrants and 72.2% of first-job migrants were unsatisfied with platform work, compared to 43.8% of natives (Table 3). Job

[6] Using the average exchange rate 1 EUR = 4.5 PLN.

[7] Additional information is provided in Table A5 of the Appendix.

satisfaction was less common among ride-hailing workers (62.6% unsatisfied) than among delivery workers (31.0%, Table 3).

Table 3. Working conditions in the Polish platform economy: native and migrant workers, by platform type

Type of platform	Natives	Migrants		Total	Reference groups	
		"First-job"	*All*		*Polish*	*Migrants*
Working time (mean of usual weekly hours)						
Taxi	47	68	56	51		
Delivery	35	45	39	36		
Total	41	64	50	40	44	58
Median net hourly wage (in PLN)						
Taxi	47	68	56	51		
Delivery	35	45	39	36		
Total	41	64	50	40	19	17
Informality (share of workers without a written contract, in %)						
Taxi	17.3	34.8	35.1	24.6		
Delivery	1.4	25	29.4	10.3		
Total	9.7	33.3	33.0	18.4		12.5
No work-life balance (share of workers, in %)						
Taxi	35.9	56.6	43.7	38.9	-	-
Delivery	10.7	33.3	21.6	14.3	-	-
Total	24.8	52.8	35.1	28.4	27.0	-
No job satisfaction (share of workers, in %)						
Taxi	61.1	76.7	65.0	62.6	-	-
Delivery	22.1	50.0	49.0	31.0	-	-
Total	43.8	72.2	58.8	49.2	28.0	-
N	*227*	*35*	*128*	*355*	*684/203/169*	*40*

Note: reference group Poles - drivers in HBS, 2020, (wages, N=684), LFS 2020 (hours, N=203), or craft and related trades workers (ISCO 7) or plant machine operators and assemblers (ISCO 8) in EWCS 2015 (work-life balance, job satisfaction, N=169). Reference group migrants – Ukrainian migrants working in ride-hailing, CMR survey 2019 (N=40). Reference group samples restricted to men aged 18-44, living in cities over 100.000.
When comparing wages in the platform economy to those in the general economy, it is crucial to account for additional expenses typically incurred by platform workers. These expenses include car rental, fuel, and partner commission costs, which workers might not have deducted even when asked to report their "net" income.

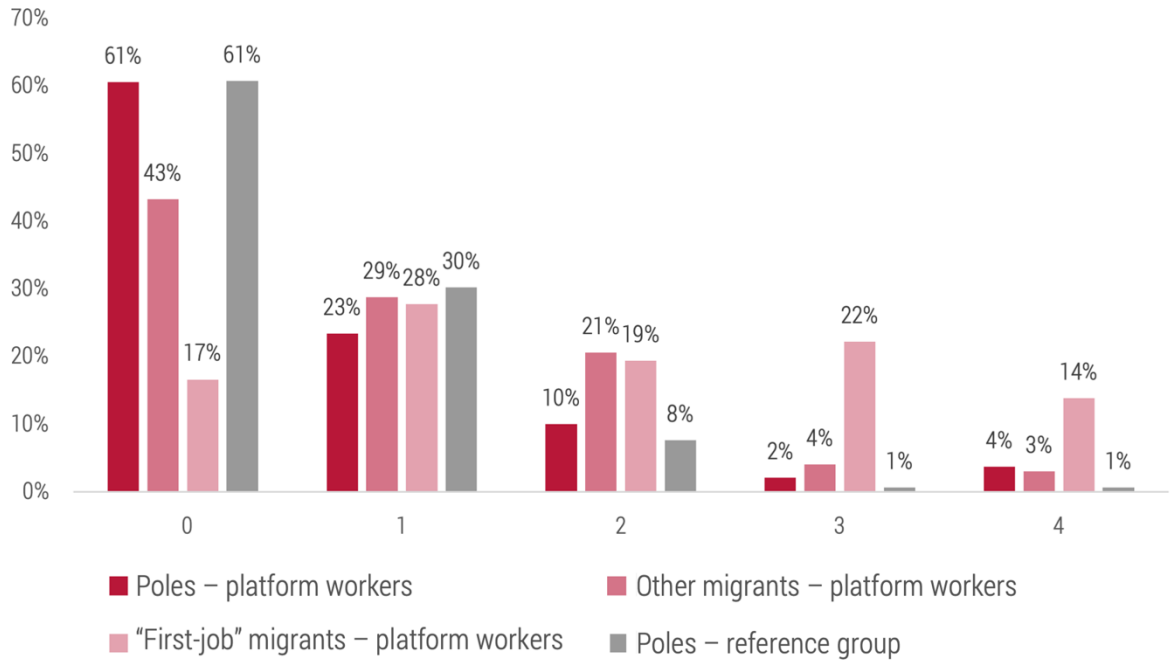
Source: Own elaboration based on PPWS, LFS, EWCS and CMR survey.

5.2. Multidimensional deprivation and job satisfaction

This subsection presents the multidimensional deprivation of platform workers based on four dimensions: low earnings, excessive hours, the informality of work, and lack of work-life balance.

In general, migrants, particularly first-job migrants, experienced a higher prevalence of poor multidimensional job quality than native platform workers. Among natives, 60.7% did not encounter any deprivation, whereas the percentages for all migrants and first-job migrants were 43.3% and 16.7%, respectively (Figure 2). Deep deprivation (experiencing multiple deprivations) affected 15.9% of Polish platform workers, 27.8% of long-term migrants, and 55.5% of first-job migrant platform workers. In contrast, only 8.7% of Polish workers in the reference group experienced deep deprivation.

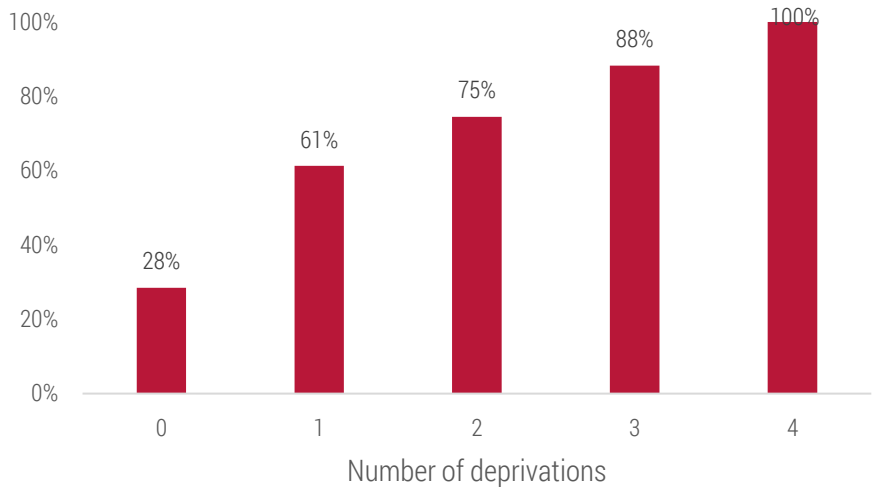
Figure 2. The share of workers according to the number of deprivations



Note: The reference group for Poles includes men aged 18-44 who live in cities and work as craft and related trades workers (ISCO 7) or plant machine operators and assemblers (ISCO 8). The shares sum up to 100% for each subpopulation.
Source: Own elaboration based on PPWS and EWCS (2015).

Job satisfaction strongly correlates with the number of experienced deprivations. Among workers not deprived in any dimension, 28% declared being unsatisfied with their platform job (Figure 3). However, among workers who experienced two deprivations, the share of those dissatisfied was as high as 75%. All platform workers deprived in four job quality dimensions lacked job satisfaction.

Figure 3. The share of workers unsatisfied with their jobs by the number of deprivations experienced



Source: Own elaboration based on PPWS.

5.3. Econometric results

This subsection presents the results of logit models quantifying factors associated with the likelihood of deep deprivation and no job satisfaction.

The relationship between multidimensional deprivation and job satisfaction was validated econometrically, as the likelihood of having no job satisfaction was strongly related to the number of experienced deprivations. Platform workers who experienced deep deprivation (i.e., deprived in more than one dimension) were 32.9 pp less likely to report job satisfaction than those who experienced no deprivations, and those who suffered from three deprivations were 52.5 pp less likely (column 7 of Table 4). This suggests that job satisfaction constitutes an overarching measure of job quality, strictly correlated with and complementary to more objectively measured working conditions of platform work. It also validates omitting job satisfaction from the multidimensional index.

Migrants were significantly more likely to experience deep deprivation than otherwise similar native workers, even after factoring out the effect of platform type and working exclusively on platforms (columns 1-3 of Table 4). Moreover, the gap in the number of experienced deprivations drove the average difference in job satisfaction between migrants and the natives. In the simplest model, migrants were significantly less likely to be satisfied with their jobs (11.5 pp, column 4 of Table 4), but not longer after controlling for the number of deprivations (columns 6-7 of Table 4). In other words, migrants were less satisfied with platform work because they had inferior working conditions and endured more deprivations than native workers, not because they were intrinsically less satisfied with platform jobs.

Food delivery platforms exhibited superior working conditions to ride-hailing platforms. Food delivery workers had a 19.3 pp lower likelihood of experiencing deep deprivation and a 17.9 pp lower likelihood of job dissatisfaction (Table 4). Regarding particular deprivations, delivery platform workers had shorter working hours, a better work-life balance, and were less likely to work informally (detailed results available upon request). The effect of platform type on job satisfaction remained significant even after considering deep deprivation or the number of experienced deprivations. This suggests that inherent and unobservable characteristics specific

to each platform type contribute to the differences in job satisfaction, in line with the second hypothesis that job quality varies within geographically tethered platforms.

Table 4. The correlates of deep deprivation in job quality and self-reported job satisfaction (marginal effects from logit models)

	Deep deprivation			No job satisfaction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Migrant	0.190***	0.144***	0.152***	0.115**	0.070	0.011	-0.013
	(0.039)	(0.046)	(0.045)	(0.055)	(0.061)	(0.060)	(0.057)
First-job migrant		0.143**	0.072		0.178*	0.020	-0.017
		(0.064)	(0.068)		(0.104)	(0.098)	(0.095)
Delivery			-0.196***			-0.199***	-0.184***
			(0.045)			(0.045)	(0.045)
Only job			0.125**			0.039	0.013
			(0.050)			(0.052)	(0.053)
Negative reasons			0.037			0.121**	0.120**
			(0.043)			(0.050)	(0.050)
Deep deprivation						0.329***	-
						(0.058)	-
One deprivation							0.289***
							(0.059)
Two deprivations							0.402***
							(0.075)
Three deprivations							0.525***
							(0.116)
Four deprivations							-
Observations	367	367	367	366	366	366	350

*Note: All models include controls for gender, age, and education (estimation results provided in Table A8 of the Appendix). Reference groups: men aged 18-24, with secondary education, working on taxi platforms, combining platform jobs with other work, started platform jobs for positive reasons, and with zero deprivation. Four deprivations were not calculated due to 100% unsatisfied workers in this group. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.*
The OLS model estimates for individual working conditions used to construct our deprivation measure are presented in Tables A6 and A7 of the Appendix
Source: Own estimations based on PPWS.

The group of first-job migrants particularly stood out among migrant platform workers. They were 14.3 pp more likely to endure deep deprivation than long-term migrants and 28.7 more likely than natives (column 2 of Table 4). They were also 17.8 pp more likely to report no job satisfaction than long-term migrants and 24.8 pp more likely than natives (column 5 of Table 4). This aligns with the third hypothesis of an important heterogeneity within the migrant population. However, these pronounced differences between long-term and first-job migrants ceased to be statistically significant after controlling for platform type and orientations toward platform work (measured by having another job and reasons to start platform work, columns 3 and 6 of Table 4). Perhaps first-

job migrants are determined to work longer hours and, therefore, may be more likely to work for ride-hailing platforms that provide such opportunities but offer worse working conditions.

Finally, orientations toward platform work mattered for job quality. Individuals who pursued it due to limited alternatives were 12.0 pp less likely to be satisfied with it than those who chose it for its flexibility. However, they were not significantly different regarding the likelihood of deep deprivation (Table 4). Workers entirely dependent on platform work were 12.5 pp more likely to experience deep deprivation than those who combined platform jobs with other work. These findings indicate that individuals compelled to enter platform work and relying entirely on it may be trapped in platform jobs with inferior job quality and job satisfaction. This is particularly concerning for first-job migrants who often lack other job opportunities. The demanding nature of platform work may hinder workers' ability to search for better alternatives. While native workers may benefit from platform experience in their future job search, perhaps signalling commitment to work, it is not true for minority workers (Adermon and Hensvik, 2022). Platforms often offer limited skill development and career growth, involve repetitive tasks, and hinder network-building. Combined with higher precariousness compared to traditional employment, platform work appears at best neutral for migrants' ability to transition to more stable or higher-paying jobs.

6. Conclusions and discussion

This article provided new evidence on the job quality gaps between native and migrant platform economy workers, using the example of Poland and focusing on its largest platform markets – taxi and delivery services. It showed substantial and multipronged gaps between natives and migrants. Migrants faced higher levels of precarity, with more prevalent informality and lack of health insurance. They worked longer hours, had worse work-life balance, and experienced a higher risk of multidimensionally low job quality. First-job migrants – those who did not have another job in Poland before starting platform work – stood out, particularly with extremely long working hours and a high risk of multidimensionally low job quality. Migrants were also more likely to be dissatisfied with platform work due to their risk of experiencing poor working conditions. This contrasts with patterns found for migrant workers in the traditional economy in Poland. Qualitative research on (Ukrainian) migrants showed that migrants, especially the recent ones, tend to perceive their work as less precarious and express higher job satisfaction than native workers (Polkowska and Filipek, 2020), in line with the dual frame of reference (Piore, 1979). Platform workers in our study did not exhibit that, perhaps because they experienced many deprivations.

Among natives, the job quality of platform work was comparable to that in similar occupations in the traditional economy. Platform workers earned slightly more per hour, worked fewer hours per week, and recorded comparable deprivation levels. Most natives engaged in platform work due to autonomy and flexibility. Hence, although platform work shifted away from the Fordist type of employment, it is not necessarily "degraded labour" in the Polish context. However, the share of native platform workers satisfied with their jobs was only half that of non-platform workers in similar jobs. This suggests that factors other than working conditions measured in our survey, perhaps stress driven by client contacts, weak networks with "co-workers, " and algorithmic control, might have tarnished platform workers' job satisfaction.

Other studies show that platforms continue ``cycles of exploitation that migrant workers have previously faced within traditional labour market" (Lata et al., 2023). At the same time, platform work does not seem extraordinarily precarious compared to work typically performed by migrants (Altenried, 2021; Zhou, 2022). We found that migrant platform workers' earnings and working hours are, on average, comparable to those in migrant reference group. However, their jobs are often informal, reducing job security and career prospects. In contrast to natives, migrants engage in platform work primarily out of necessity (lack of income or other job opportunities). Importantly, first-job migrants are particularly deprived, most of them relying entirely on platform jobs and seeing no alternatives (Figure A1). Onboarding policies of most platform companies also seem indiscriminate, and migrants sometimes run intermediary businesses. This may entice migrants to think that the platform economy can help avoid discrimination (van Doorn et al., 2022), especially in ethnically homogenous countries such as Poland.

There could be several reasons why workers who did not have other job in Poland before taking up platform work are less satisfied with their jobs than other migrants. Firstly, first-job migrants may face greater difficulties adapting to a new culture and job market simultaneously, which can compound the stress and dissatisfaction associated with their work. Secondly, they might have lacked opportunities to acquire skills that could make the job easier or more rewarding, triggering frustration and lowering job satisfaction.[8] Finally, they might face financial pressures and lack savings or additional income sources. Platform work's irregular and unpredictable earnings can exacerbate economic stress, lowering satisfaction. Previously, agriculture was a common arrival infrastructure in Poland, mainly due to low entry costs and skill demand. Especially for Ukrainian workers, agriculture provided a gateway to the Polish labour market. It was, however, clearly transitory and most migrants were able to move on to more attractive sectors within a few months (Górny and Kaczmarczyk, 2020). In contrast, majority of first-job platform workers in Poland have been in platform work for at least a year. Our findings suggest that platform work may be easy to start but not easy to leave for migrants.

Platform labour should be understood in local contexts with their histories of racialisation and contingent labour (Gebrial, 2022; Orth, 2023). In Poland, the platform economy's growth overlapped with a rapid shift from a net emigration to a net immigration country. Initially, seasonal migration played a pivotal role, but over time, mid- and long-term migrants emerged as a substantial demographic. Therefore, Poland offers a unique spatio-temporal context for studying platform work through a migration lens as the rise of platforms and migration intertwine. In contrast to many European cities where international students dominate platform labour (Orth, 2023), in Poland, migrant platform workers rarely study and usually work long hours. This coincides with limited job alternatives, which can further increase vulnerability. We argue that the significantly worse position of first-job migrants in Poland can be attributed to several characteristics typical for New Immigration Destinations, NIDs (Winders, 2014). In NIDs, newly arrived immigrants often lack access to established ethnic and social networks which hinders their ability to navigate the labour market, increasing job insecurity and worsening working conditions compared to native workers and migrants in traditional sectors or more established immigration contexts. The absence of established enclave economies limits community-based economic

[8] This lack of skills or ability to transfer human capital (e.g. due to weak language skills) may also be a key factor behind undertaking platform work.

support systems for immigrants. These disadvantages are clearly visible when compared to the only migrant group in Poland with a well-developed enclave economy - the Vietnamese. Numerous studies for Poland and other CEE countries showed that bonding capital based on ethnic business is the main asset for the Vietnamese (Andrejuk, 2016). Migrant groups involved in platform work lack it, which limits their options, exacerbates their vulnerability and perhaps acceptance of precarious platform jobs. As we argue in the paper, platform work may be useful arrival infrastructure if transitory, but problematic for social mobility if it becomes a dead end.

Despite the recent dynamic influx of foreigners, Poland's migration-related institutions remain underdeveloped, as the axiom of migration policy in Poland combines ultra)liberal labour market access with minimal support for integration, including economic. Such migration infrastructure can impact migration trajectories and integration prospects (Ager and Strang, 2008; Alba and Foner, 2014; Harder et al., 2018). Moreover, like other Central Eastern European countries, Poland weakly enforces labour market regulations and lags behind Western European countries in attempts to regulate or set standards for platform work. Without robust institutional support, immigrants face challenges such as limited access to social services, health insurance, and legal protections, contributing to their precarious employment in platform work. In this institutional void, platforms and intermediaries specialising in hiring migrants become a critical arrival infrastructure. Poland's liberal visa policies attract migrants, and low entry barriers of platforms help them get on their feet, but a platform may become a dead-end (Lam and Triandafyllidou, 2021).

Finally, job quality differs between seemingly comparable platform jobs, as ride-hailing platforms exhibit lower job quality than delivery platforms. The overrepresentation of migrants, in particular first-job migrants, in ride-hailing is one explanation behind the differences in job quality between migrants and natives. Working on taxi platforms is usually more intense, and migrants on platforms tend to 'actively' embrace excessive work (Zhou, 2022). This can be especially true for first-job migrants, who might lack the financial safety net of more established migrants or native workers. However, better job satisfaction of couriers, compared to drivers, might also stem from the intrinsic characteristics of these two types of work. Delivery work involves less direct interaction with customers, reducing the stress and potential conflicts associated with dealing with passengers, especially difficult or intoxicated ones. Delivery workers might also build a sense of community through regular interactions with restaurant staff and other workers. Regular physical activity can also be seen positively by workers who prefer being active rather than sitting in a car for extended periods, improving job satisfaction.

Our research aligns with the imperative to differentiate between distinct groups of workers (Zhou, 2022) and migrants (Lata et al., 2023) when investigating platform work. Recognising that different groups' experiences within platform work may vary (Dunn, 2020), we aim to contribute to a nuanced understanding of this context-specific diversity. However, our study has limitations. It does not allow disentangling to what extent the inferior working conditions of first-job migrants result from characteristics of taxi platforms and to what extent they reflect a selection of more desperate migrants into this segment. Those hypotheses require more research to recognise the heterogeneity of geographically-tethered platforms.

Our paper shows the direction for further research. We lack sufficient data to understand the share of migrant workers for whom platform work might become a trap hindering their career progression. An important question is why these individuals work on platforms longer than migrants traditionally did in sectors such as agriculture. It is crucial to investigate whether their prolonged platform tenure is due to limited alternatives or a perception

that platform jobs offer better conditions compared to other jobs (even if their declared level of job satisfaction is low). Further research may focus on the integration paths of migrants who enter the labour market through platform work in a receiving country. Examining their integration and job prospects over several years could provide insights into the specific impacts of this new arrival infrastructure on migrants' lives. This understanding could inform policies aimed at improving migrant integration and career advancement opportunities, ensuring that platform work serves as a stepping stone rather than a dead-end.

References

Abkhezr, P., McMahon, M., 2022. The intersections of migration, app-based gig work, and career development: implications for career practice and research. Int J Educ Vocat Guidance.

Adermon, A., Hensvik, L., 2022. Gig-jobs: Stepping stones or dead ends? Labour Economics 76, 102171.

Adler, P.A., Adler, P., 2004. Paradise Laborers: Hotel Work in the Global Economy.

Ager, A., Strang, A., 2008. Understanding integration: A conceptual framework. Journal of Refugee Studies 21, 166–191.

Aiyegbajeje, F.O., 2019. Determinants of travel behavior in taxi transport system in the Lagos metropolis of Nigeria. Prace Komisji Geografii Komunikacji PTG 2019, 13–21.

Alba, R., Foner, N., 2014. Comparing Immigrant Integration in North America and Western Europe: How much do the Grand Narratives Tell Us? International Migration Review 48, 263–291.

Alkire, S., Foster, J., 2011. Counting and multidimensional poverty measurement. Journal of Public Economics 95, 476–487.

Altenried, M., 2021. Mobile workers, contingent labour: Migration, the gig economy and the multiplication of labour. Environ Plan A 0308518X211054846.

Anderson, B., 2010. Migration, immigration controls and the fashioning of precarious workers. Work, Employment and Society 24, 300–317.

Andrejuk, K., 2016. Vietnamese in Poland: How does ethnicity affect immigrant entrepreneurship? Asian and Pacific Migration Journal 25, 379–400.

Azzellini, D., Greer, I., Umney, C., 2022. Why platform capitalism is not the future of work. Work in the Global Economy 2, 272–289.

Barratt, T., Goods, C., Veen, A., 2020. 'I'm my own boss…': Active intermediation and 'entrepreneurial' worker agency in the Australian gig-economy. Environ Plan A 52, 1643–1661.

Barrett, A., Duffy, D., 2008. Are Ireland's Immigrants Integrating into Its Labor Market? International Migration Review 42, 597–619.

Beręsewicz, M., Nikulin, D., Szymkowiak, M., Wilak, K., 2021. The gig economy in Poland: evidence based on mobile big data. arXiv:2106.12827 [econ, q-fin, stat].

Bhorat, H., Kanbur, R., Stanwix, B., Thornton, A., 2021. Measuring Multi-Dimensional Labour Law Violation with an Application to South Africa. British Journal of Industrial Relations 59, 928–961.

Bosswick, W., Heckmann, F., 2006. Integration of migrants: Contribution of local and regional authorities. European Foundation for the Improvement of Living and Working Conditions, Dublin.

Burchell, B., Sehnbruch, K., Piasna, A., Agloni, N., 2014. The quality of employment and decent work: definitions, methodologies, and ongoing debates. Cambridge Journal of Economics 38, 459–477.

Cazes, S., Hijzen, A., Saint-Martin, A., 2015. Measuring and Assessing Job Quality: The OECD Job Quality Framework (OECD Social, Employment and Migration Working Papers No. 174), OECD Social, Employment and Migration Working Papers.

Cieslik, K., Banya, R., Vira, B., 2022. Offline contexts of online jobs: Platform drivers, decent work, and informality in Lagos, Nigeria. Development Policy Review 40, e12595.

Clark, A.E., 1996. Job Satisfaction in Britain. British Journal of Industrial Relations 34, 189–217.

Clark, A.E., 2005. Your Money or Your Life: Changing Job Quality in OECD Countries. British Journal of Industrial Relations 43, 377–400.

Collins, F.L., 2021. Geographies of migration I: Platform migration. Progress in Human Geography 45, 866–877.
Cook, C., Diamond, R., Hall, J.V., List, J.A., Oyer, P., 2021. The Gender Earnings Gap in the Gig Economy: Evidence from over a Million Rideshare Drivers. The Review of Economic Studies 88, 2210–2238.
Corrado, A., Caruso, F.S., Lo Cascio, M., Nori, M., Palumbo, L., Triandafyllidou, A., 2018. Is Italian agriculture a 'pull factor' for irregular migration – and, if so, why?
de Groen, W.P., Kilhoffer, Z., Lenaerts, K., 2018. Employment and working conditions of selected types of platform work [WWW Document]. Eurofound. URL https://www.eurofound.europa.eu/publications/report/2018/employment-and-working-conditions-of-selected-types-of-platform-work (accessed 11.17.22).
De Stefano, V., 2015. The Rise of the "Just-in-Time Workforce": On-Demand Work, Crowd Work and Labour Protection in the "Gig-Economy." SSRN Journal.
Doyle, C., 2018. Housing in UK New Immigration Destinations: Planning, houses of multiple occupation and the challenges of uncertainty. Journal of Rural Studies 64, 276–288.
Dunn, M., 2020. Making gigs work: digital platforms, job quality and worker motivations. New Technology, Work and Employment 35, 232–249.
Flippen, C.A., Farrell-Bryan, D., 2021. New Destinations and the Changing Geography of Immigrant Incorporation. Annu. Rev. Sociol. 47, 479–500.
Fonseca, M.L., Pereira, S., Esteves, A., 2014. Migration of Ukrainian Nationals to Portugal: Changing Flows and the Critical Role of Social Networks. Central and Eastern European Migration Review 3, 115–130.
Forde, C., Stuart, M., Joyce, S., Oliver, L., Valizade, D., Alberti, G., Hardy, K., Trappmann, V., Umney, C., Carson, C., 2017. The Social Protection of Workers in the Platform Economy 128.
Gebrial, D., 2022. Racial platform capitalism: Empire, migration and the making of Uber in London. Environ Plan A 0308518X2211154.
Gevaert, J., Doms, J., Vandevenne, E., Van Aerden, K., 2024. Strategies for surveying platform workers: lessons from a Belgian case study. Qual Quant.
Glavin, P., Schieman, S., 2022. Dependency and Hardship in the Gig Economy: The Mental Health Consequences of Platform Work. Socius 8, 23780231221082414.
Goods, C., Veen, A., Barratt, T., 2019. "Is your gig any good?" Analysing job quality in the Australian platform-based food-delivery sector. Journal of Industrial Relations 61, 502–527.
Górny, A., Kaczmarczyk, P., 2019. European Migration Transition in the Context of Post-Enlargement Migration from and into Central and Eastern Europe. In: The SAGE Handbook of International Migration. SAGE Publications, New York.
Górny, A., Kaczmarczyk, P., 2020. Temporary workers and migration transition: on a changing role of the agricultural sector in international migration to Poland. In: International Labour Migration to Europe's Rural Regions. Routledge.
Haandrikman, K., Hedberg, C., Chihaya, G.K., 2023. New immigration destinations in Sweden: Migrant residential trajectories intersecting rural areas. Sociologia Ruralis soru.12468.
Harder, N., Figueroa, L., Gillum, R.M., Hangartner, D., Laitin, D.D., Hainmueller, J., 2018. Multidimensional measure of immigrant integration. Proc Natl Acad Sci USA 115, 11483–11488.
Hurley, J., Fernandez-Macias, E., Storrie, 2013. Employment polarisation and job quality in the crisis: European Jobs Monitor 2013. European Foundation for the Improvement of Living and Working Conditions, Dublin.

Huws, U., Spencer, N.H., Syrdal, D.S., 2018. Online, on call: the spread of digitally organised just-in-time working and its implications for standard employment models. New Technology, Work and Employment 33, 113–129.

ILO, 1999. Decent work [WWW Document]. URL https://www.ilo.org/global/topics/decent-work/lang--en/index.htm (accessed 11.18.22).

Kaczmarczyk, P., 2023. COVID-19 and labour market adjustments: policies, foreign labour and structural shifts. Journal of Ethnic and Migration Studies 0, 1–26.

Kalleberg, A.L., Vaisey, S., 2005. Pathways to a Good Job: Perceived Work Quality among the Machinists in North America. Br J Industrial Relations 43, 431–454.

Kosinski, M., Matz, S.C., Gosling, S.D., Popov, V., Stillwell, D., 2015. Facebook as a research tool for the social sciences: Opportunities, challenges, ethical considerations, and practical guidelines. American Psychologist 70, 543–556.

Křížková, I., Ouředníček, M., 2020. Immigrant internal migration in a new destination country: Do immigrants suburbanise in Czechia and why? Population Space and Place 26, e2326.

Lam, L., Triandafyllidou, A., 2021. An unlikely stepping stone? Exploring how platform work shapes newcomer migrant integration. Transitions: Journal of Transient Migration 5, 11–29.

Lam, L., Triandafyllidou, A., 2022. Road to nowhere or to somewhere? Migrant pathways in platform work in Canada. Environ Plan A 0308518X221090248.

Lata, L.N., Burdon, J., Reddel, T., 2023. New tech, old exploitation: Gig economy, algorithmic control and migrant labour. Sociology Compass 17, e13028.

Lewandowski, P., Magda, I., 2018. The labor market in Poland, 2000–2016. IZA World of Labor.

Locke, E.A., 1969. What is job satisfaction? Organizational Behavior and Human Performance 4, 309–336.

Markova, E.L., Saradavar, K., Poggi, A., Villosio, C., 2015. Low-Paid but Satisfied? How Immigrant and Ethnic Minority Workers in Low-Wage Jobs Make Sense of Their Wages | SpringerLink. In: Holtgrewe, U., Kirov, V., Ramioul, M. (Eds.), Hard Work in New Jobs. pp. 151–168.

Mazur, J., Serafin, M., 2022. Stalling the State: How Digital Platforms Contribute to and Profit From Delays in the Enforcement and Adoption of Regulations. Comparative Political Studies 00104140221089651.

McAreavey, R., 2017. New Immigration Destinations Migrating to Rural and Peripheral Areas. Routledge, London.

McAreavey, R., Argent, N., 2018. New Immigration Destinations (NID) unravelling the challenges and opportunities for migrants and for host communities. Journal of Rural Studies 64, 148–152.

Meeus, B., van Heur, B., Arnaut, K., 2019. Migration and the Infrastructural Politics of Urban Arrival. In: Meeus, B., Arnaut, K., van Heur, B. (Eds.), Arrival Infrastructures: Migration and Urban Social Mobilities. Springer International Publishing, Cham, pp. 1–32.

Mika, B., Polkowska, D., 2022. Work-on-demand in patchwork capitalism: The peculiar case of uber's fleet partners in Poland. New Technology, Work and Employment n/a.

Muñoz de Bustillo, R., Fernández-Macías, E., Esteve, F., Antón, J.-I., 2011. E pluribus unum? A critical survey of job quality indicators. Socio-Economic Review 9, 447–475.

Muszyński, K., Pulignano, V., Marà, C., 2022. Product markets and working conditions on international and regional food delivery platforms: A study in Poland and Italy. European Journal of Industrial Relations 28, 295–316.

O'Farrell, R., Montagnier, P., 2020. Measuring digital platform-mediated workers. New Technology, Work and Employment 35, 130–144.

Orth, B., 2023. Stratified pathways into platform work: Migration trajectories and skills in Berlin's gig economy. Environ Plan A 0308518X231191933.

Pangrazio, L., Bishop, C., Lee, F., 2023. Old Media, New Gigs: The Discursive Construction of the Gig Economy in Australian News Media. Work, Employment and Society 37, 606–624.

Pettica-Harris, A., deGama, N., Ravishankar, M.M., 2020. Postcapitalist precarious work and those in the 'drivers' seat: Exploring the motivations and lived experiences of Uber drivers in Canada.

Piasna, A., Zwysen, W., Drahokoupil, J., 2022. The platform economy in Europe Results from the second ETUI Internet and Platform Work Survey (No. 2022.05), ETUI Working Paper. European Trade Union Institute.

Piore, M.J., 1979. Birds of Passage: Migrant Labor and Industrial Societies. Cambridge University Press, Cambridge.

Polkowska, D., 2019. Does the App Contribute to the Precarization of Work? The Case of Uber Drivers in Poland. PARTECIPAZIONE E CONFLITTO 12, 717–741.

Polkowska, D., Filipek, K., 2020. Grateful Precarious Worker? Ukrainian Migrants in Poland. Review of Radical Political Economics 52, 564–581.

Prassl, J., 2018. Humans as a Service: The Promise and Perils of Work in the Gig Economy. Oxford University Press.

Prosser, T., 2016. Dualization or liberalization? Investigating precarious work in eight European countries. Work, Employment and Society 30, 949–965.

Ravenelle, A.J., 2019. Hustle and Gig: Struggling and Surviving in the Sharing Economy, First edition. ed. University of California Press, Oakland, California.

Rye, J.F., Slettebak, M.H., 2020. The new geography of labour migration: EU11 migrants in rural Norway. Journal of Rural Studies 75, 125–131.

Schneider, D., Harknett, K., 2022. What's to Like? Facebook as a Tool for Survey Data Collection. Sociological Methods & Research 51, 108–140.

Schor, J.B., Attwood-Charles, W., Cansoy, M., Ladegaard, I., Wengronowitz, R., 2020. Dependence and precarity in the platform economy. Theor Soc 49, 833–861.

Seashore, S.E., 1974. Job satisfaction as an indicator of the quality of employment. Soc Indic Res 1, 135–168.

Sehnbruch, K., González, P., Apablaza, M., Méndez, R., Arriagada, V., 2020. The Quality of Employment (QoE) in nine Latin American countries: A multidimensional perspective. World Development 127, 104738.

Sun, P., Yujie Chen, J., Rani, U., 2021. From Flexible Labour to 'Sticky Labour': A Tracking Study of Workers in the Food-Delivery Platform Economy of China. Work, Employment and Society 09500170211021570.

Tassinari, A., Maccarrone, V., 2020. Riders on the Storm: Workplace Solidarity among Gig Economy Couriers in Italy and the UK. Work, Employment and Society 34, 35–54.

Urzi, B.M.C., Pesole, A., Fernandez, M.E., 2020. New evidence on platform workers in Europe [WWW Document]. JRC Publications Repository. URL https://publications.jrc.ec.europa.eu/repository/handle/JRC118570 (accessed 11.8.22).

Vallas, S., Schor, J.B., 2020. What Do Platforms Do? Understanding the Gig Economy. Annu. Rev. Sociol. 46, 273–294.

van Doorn, N., Ferrari, F., Graham, M., 2022. Migration and Migrant Labour in the Gig Economy: An Intervention. Work, Employment and Society 09500170221096581.

van Doorn, N., Vijay, D., 2021. Gig work as migrant work: The platformization of migration infrastructure. Environ Plan A 0308518X211065049.

Vieira, T., 2023. Platform couriers' self-exploitation: The case study of Glovo. New Technology, Work and Employment n/a.

Winders, J., 2014. New Immigrant Destinations in Global Context. International Migration Review 48, 149–179.

Wood, A.J., 2016. Flexible scheduling, degradation of job quality and barriers to collective voice. Human Relations 69, 1989–2010.

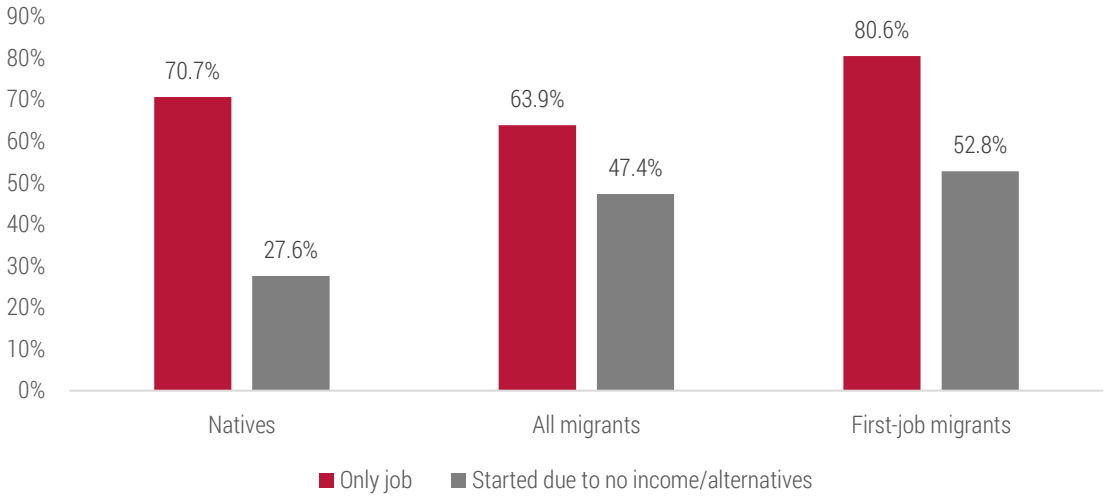
Wood, A.J., Graham, M., Lehdonvirta, V., Hjorth, I., 2018. Good Gig, Bad Big: Autonomy and Algorithmic Control in the Global Gig Economy. Work, Employment and Society 33.

Wright, C.F., Clibborn, S., 2019. Migrant labour and low-quality work: A persistent relationship. Journal of Industrial Relations 61, 157–175.

Zhou, Y., 2022. Trapped in the platform: Migration and precarity in China's platform-based gig economy. Environ Plan A 0308518X2211191.

Appendix

Figure A1. Starting a platform job due to no alternatives and having another job according to the migrant status



Source: Own elaboration based on the "Polish Platform Work Survey."

Table A1. Labour market status before starting platform work (%)

	Polish platform workers	Migrant platform workers	Total
Employed	39.0	31.8	36.4
Unemployed	14.0	21.2	16.6
Unemployed because of COVID	13.1	7.6	11.1
In education/training	24.2	7.6	18.2
Not employed due to different reasons	5.9	3.8	5.2
Retired	1.3	0.8	1.1
Lived abroad	2.5	27.3	11.4
Total	236	132	368

Source: Own elaboration based on the "Polish Platform Work Survey."

Table A2. Comparison of the selected characteristics of first-job migrants and other migrants

	First-job migrants	Settled migrants
Works on a taxi platform (%)	77	40
Has another job (%)	19	33
Works on platforms due to no income /alternatives (%)	53	45
Has health insurance (%)	50	72
Declares job satisfaction (%)	27	46
Declares work-life balance (%)	47	72
Hours worked weekly (hours)	64	43
Hourly wage (median, PLN)	12,5	20

Source: Own elaboration based on the "Polish Platform Work Survey."

Table A3. Intent to work on platforms according to the migrant status (%)

	First-job migrants	Settled migrants
Arrived with the intent to work on platforms	73	30
N	26	29

Source: Own elaboration based on the "Polish Platform Work Survey."

Table A4. Reasons to start platform work according to the migrant status (%)

	Polish	Migrant		
		First-job	Settled	All migrants
„Negative" reasons	27.6	52.3	45.4	47.4
„Positive" reasons	72.4	47.2	54.6	52.6
N	239	36	97	133

Source: Own elaboration based on the "Polish Platform Work Survey."

Table A5. Health insurance: platform workers and the general population (in %)

	Polish platform workers (PPWS)	Migrant platform workers (PPWS)	First-job migrants	Reference group: Ukrainians in Warsaw
Yes, based on platform work	27.0	18.0	18.5	67.4
Yes, based on other work	10.0	24.5	7.4	
Yes, I bought health insurance by myself	28.3	14.9	18.5	44.0
Yes, I am entitled to it in another way	8.8	1.0	0	3.0
I don't have health insurance	15.7	38.3	51.8	9.6
I don't know	10	3.2	3.7	-
N	159	94	27	389

Note: Reference group migrants: the Centre of Migration Research study, 2019. Samples were restricted to men aged 18-44 living in cities with at least 100,000 inhabitants. As health insurance in Poland is determined by the employment contract, the share of the total working population deprived of it is negligible.
Source: Own elaboration based on the "Polish Platform Work Survey" and the CMR survey.

Table A6. Correlates of working conditions: weekly hours worked (OLS coefficients), hourly earnings (OLS coefficients), work-life balance and informality (marginal effects from a logit model)

	Weekly hours worked			Hourly earnings			No work-life balance			Informality		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Migrant	6.980***	2.435	1.374	-0.138	-0.006	0.099	0.088*	0.035	-0.012	0.213***	0.216***	0.201***
	(2.357)	(2.498)	(2.159)	(0.110)	(0.124)	(0.129)	(0.049)	(0.056)	(0.060)	(0.037)	(0.040)	(0.047)
First-job migrants		17.193***	8.848***		-0.498***	-0.176		0.179**	0.005		-0.013	-0.096
		(4.248)	(3.295)		(0.173)	(0.164)		(0.076)	(0.083)		(0.056)	(0.064)
Delivery			-7.526***			0.104			-0.145***			-0.069*
			(2.010)			(0.110)			(0.048)			(0.041)
Only job			15.591***			-0.012			0.066			0.035
			(2.112)			(0.109)			(0.054)			(0.046)
No income/alternatives			4.879**			-0.084			0.064			0.054
			(1.958)			(0.107)			(0.045)			(0.039)
Having a contract			3.356			-0.177			0.089			-
			(2.288)			(0.136)			(0.059)			-
1st quantile of hourly earnings			10.265***			-			0.289***			0.053
			(3.247)			-			(0.083)			(0.077)
2nd quantile of hourly earnings			-4.786			-			0.181***			-0.104
			(3.126)			-			(0.068)			(0.070)
4th quantile of hourly earnings			-5.243*			-			0.113			-0.009
			(3.146)			-			(0.078)			(0.080)
5th quantile of hourly earnings			-3.818			-			-0.005			-0.032
			(3.325)			-			(0.071)			(0.075)
1st quantile of hours worked			-			0.050			0.064			0.034
			-			(0.157)			(0.078)			(0.066)
2nd quantile of hours worked			-			-0.161			0.135*			0.029
			-			(0.150)			(0.073)			(0.059)
4th quantile of hours worked			-			-0.275			0.110			0.061
			-			(0.168)			(0.078)			(0.066)
5th quantile of hours worked			-			-0.842***			0.312***			0.138*
			-			(0.164)			(0.088)			(0.080)
Observations	355	355	347	352	352	347	365	365	346	362	362	347
R-squared	0.142	0.187	0.466	0.068	0.088	0.211						

*Note: All models include controls for gender, age, and education (see Table A7 in the Appendix for the estimation results). Hourly earnings were logarithmised and standardised. Top and bottom earnings percentiles were removed. Reference groups: men aged 18-24, with secondary education, working on taxi platforms, combining gig jobs with other work, started gig jobs for positive reasons, has a contract, 3rd quantile of hourly earnings, 3rd quantile of hours worked. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1Source: Own estimations based on the "Polish Platform Work Survey."*

Table A7. Estimation results for demographic controls in models of working conditions: weekly hours worked (OLS coefficients), hourly earnings (OLS coefficients) and work-life balance (marginal effects from a logit model)

	Weekly hours worked			Hourly earnings			No work-life balance			Informality		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Aged 25-29	7.695**	7.431**	7.557***	0.062	0.070	0.174	0.095	0.093	0.033	-0.019	-0.019	-0.028
	(2.998)	(2.939)	(2.446)	(0.141)	(0.140)	(0.132)	(0.067)	(0.066)	(0.069)	(0.048)	(0.048)	(0.049)
Aged 30-44	12.606***	11.830***	12.282***	-0.130	-0.108	0.031	0.046	0.036	-0.041	0.079	0.081	0.060
	(2.595)	(2.519)	(2.162)	(0.121)	(0.120)	(0.129)	(0.060)	(0.060)	(0.063)	(0.053)	(0.054)	(0.053)
Aged 45+	11.403***	10.942***	8.960***	-0.075	-0.061	0.096	0.077	0.072	-0.028	-0.005	-0.005	-0.025
	(3.506)	(3.414)	(3.128)	(0.159)	(0.155)	(0.150)	(0.072)	(0.071)	(0.069)	(0.057)	(0.057)	(0.055)
Primary education	6.224*	3.865	-1.146	-0.463***	-0.394***	-0.265*	0.099	0.069	-0.033	0.080	0.084	0.033
	(3.480)	(3.348)	(2.879)	(0.149)	(0.148)	(0.146)	(0.083)	(0.078)	(0.067)	(0.068)	(0.070)	(0.066)
Basic vocational education	11.101***	10.217***	1.999	-0.615***	-0.590***	-0.467**	0.124	0.113	-0.026	0.040	0.041	-0.007
	(3.856)	(3.828)	(2.843)	(0.201)	(0.199)	(0.182)	(0.093)	(0.094)	(0.087)	(0.074)	(0.074)	(0.062)
Tertiary education	-3.318	-2.699	-1.315	0.047	0.029	-0.044	-0.029	-0.023	0.022	-0.091**	-0.091**	-0.095**
	(2.576)	(2.514)	(2.200)	(0.113)	(0.112)	(0.111)	(0.054)	(0.055)	(0.055)	(0.042)	(0.042)	(0.046)
Woman	-8.611***	-7.406***	-6.947***	0.044	0.010	-0.117	-0.081	-0.064	-0.018	-0.021	-0.023	0.006
	(2.893)	(2.816)	(2.306)	(0.153)	(0.158)	(0.163)	(0.084)	(0.083)	(0.071)	(0.060)	(0.061)	(0.063)
Constant	34.663***	34.993***	28.182***	0.157	0.147	0.251						

	(2.087)	(2.043)	(3.431)	(0.101)	(0.100)	(0.192)						
Observations	355	355	347	352	352	347	365	365	346	362	362	347
R-squared	0.142	0.187	0.466	0.068	0.088	0.212						

*Note: Estimates for gender, age, and education from the same regressions as shown in Table A6. Reference groups: men aged 18-24, with secondary education, working on taxi platforms, combining gig jobs with other work, started gig jobs for positive reasons, has a contract, 3rd quantile of hourly earnings, 3rd quantile of hours worked. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.*

Source: Own estimations based on the "Polish Platform Work Survey."

Table A8. Estimates for demographic controls in models of deep deprivation in multidimensional job quality and self-reported job satisfaction (marginal effects from logit models)

	Deep deprivation			Job satisfaction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Aged 25-29	0.017	0.014	0.002	0.172**	0.168**	0.127*	0.108
	(0.055)	(0.055)	(0.053)	(0.073)	(0.072)	(0.068)	(0.068)
Aged 30-44	0.075	0.066	0.048	0.123*	0.115*	0.065	0.035
	(0.055)	(0.054)	(0.054)	(0.068)	(0.068)	(0.062)	(0.066)
Aged 45+	0.069	0.064	0.025	0.196**	0.192**	0.094	0.077
	(0.066)	(0.065)	(0.061)	(0.080)	(0.080)	(0.073)	(0.073)
Primary education	0.090	0.061	0.022	0.119	0.096	0.055	0.047
	(0.069)	(0.067)	(0.064)	(0.089)	(0.091)	(0.087)	(0.097)
Basic vocational education	0.203**	0.193**	0.104	0.113	0.103	-0.006	-0.029
	(0.090)	(0.089)	(0.073)	(0.096)	(0.096)	(0.093)	(0.089)
Tertiary education	-0.079*	-0.075*	-0.070	0.022	0.025	0.073	0.069
	(0.044)	(0.045)	(0.046)	(0.062)	(0.062)	(0.056)	(0.055)
Woman	-0.116	-0.095	-0.081	0.048	0.060	0.094	0.108
	(0.082)	(0.079)	(0.073)	(0.085)	(0.085)	(0.084)	(0.080)
Observations	367	367	367	366	366	366	350

*Note: Estimates for gender, age, and education from the same regressions as shown in Table 12. Reference groups: men aged 18-24 with secondary education. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.*
Source: Own estimations based on the "Polish Platform Work Survey."

Table A9. A detailed description of all variables used in the models.

No.	Variable type	Variable name	Values	Questions in the survey	Note
V1	Binary	Migrant	1 - no Polish citizenship, 0 - Polish citizenship	Please specify which country's citizenship you hold.	
V2	Binary	First-job migrants	1 - migrants who lived abroad just before starting platform work, 0 - others	Which statement best describes your status on the labour market in Poland directly before starting platform work?	
V3	Binary	Platform type	1 - delivery platforms, 0 - taxi platforms	In the last 12 months in Poland, what platforms have you cooperated with?	Multiple choice question, including one open-ended answer. The mentioned platforms were grouped into "delivery" and "taxi" platforms during the analysis. Taxi platforms included: Bolt, FreeNow, Uber, iTaxi, and Komfort Taxi. Delivery platforms included: Bolt Food, Deligoo, Glovo, Pyszne.pl, Uber Eats, Wolt, Everli, Xpressdelivery, Jokr/Jush, Lisek.app, Stuart, Opti. Only 12.5% of respondents chose at least one platform from both categories. If workers chose more platforms from one category than from the other, they were classified to the category in which they marked more platforms.
V4	Binary	Only job	1 - platform work is the only job, 0 - respondent has another job	Is platform work your only job?	
V5	Binary	Reasons to start platform work	1 - "Negative reasons", 0 - "positive reasons"	Which factors prompted you to start platform work in Poland? Please select up to three most important ones.	Answers "Lack of other satisfactory sources of income", "Problems finding another job", "The loss of (all or part of) household income due to the pandemic", "The loss of (all or part of) household income due to other reasons than the pandemic" were recoded as "negative reasons".
V6	Binary	Job satisfaction	1 - satisfied, 0 - not satisfied	On the whole, are you very satisfied, satisfied, not very satisfied or not at all satisfied with the platform work	Answers "Very satisfied" and Satisfied" were recoded as 1, and answers "not very satisfied" and "not at all satisfied" were recoded as 0.
V7	Discrete	Working hours	Values with an accuracy of 5 hours.	How many hours per week do you usually spend on platform work in a typical week?	Maximum possible value: "80+ hours"

V8	Continuous	Hourly earnings	Weekly earnings were divided by the weekly number of hours (V7). The top and bottom percentiles were removed. In regression models, hourly earnings were logarithmised and normalised.	What is your average weekly net income from platform work in a typical week when you do platform work?	Maximum possible value 5000+ PLN
V9	Binary	Informality of work	1 - does not have any type of written contract, 0 - has a written contract	Please indicate the main type of contract on the basis of which you perform the platform work (whether the contract is with a partner or with a platform).	Answer "I do not have a written contract" was recoded as 1, answers "Employment contract (i.e., Umowa o pracę), "Contract of mandate/to perform a specified work (civil law contracts, such as Umowa zlecenie/umowa o dzieło)", "Rental contract (e.g. bicycle, scooter, car)", "Self-employment (I have my own business, I work with the platform on B2B basis) were recoded as 0.
V10	Binary	No work-life balance	1 - no work-life balance, 0 - declares work-life balance	In general, do your platform working hours fit in with your family or social commitments outside work?	Answers "Very Well" and "Well" were recoded as 0, and answers "Not very well" and "Not at all well" were recoded as 1.
V11	Binary	Deep deprivation	1 - deprived in more than one aspect 0 – deprived in 0 or 1 aspect.	No specific question.	Based on V7 (deprived if works over 60h/a week), V8 (deprived if earns less than 60% of 17.5 PLN), V9 (deprived if works informally), V10 (deprived if declares no work-life balance).
V12	Binary	Gender	1 - female, 0 - male	Please specify your gender	
V13	Categorical	Age	1 - aged 18-24, 2 - aged 25-29, 3 - aged 30-44, 4 - aged 45+	How old are you?	Recoded as four categories.
V14	Categorical	Education	1 - primary education, 2 - basic vocational education, 3 - secondary education, 4 - tertiary education	What is your education level?	Answers "Secondary technical or vocational", "General secondary", and "Postsecondary" were recoded as 3 - "Secondary".

Source: Own estimations based on the "Polish Platform Work Survey."