Empirical Paper

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Platform-mediated work in Poland: Worker characteristics and prevalence in society

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Abstract:
Objective: One of the new trends in modern economies is the development of platform-mediated work (PMW), also known as the gig economy. The current article aims to discuss the results of the original survey to determine the number and structure of gig workers among the adult residents of Poland; this discussion is based on the broader context of the existing knowledge on the subject pertaining to society and also focuses on the plans for the future.

Methods applied: This article is based on the systematic literature review and the findings of the survey conducted on a representative nationwide sample of 3,165 Polish residents aged 18–70.

Findings: The survey carried out in July 2021, showed that, in Poland, online or offline PMW was performed by about 16% of the investigated population over the year and by about 8% over the month. Moreover, an increase in the interest in platform work is expected.

Originality value: PMW is a relatively rare phenomenon, which is difficult to measure. The present article proposes a research approach that can be used to establish the prevalence and prospects of PMW in Poland.

Keywords: gig economy, gig worker, labor platforms, platform work, platforms mediating work

JEL Classification: J21, J22, O33

1 Introduction

Platform-mediated work (PMW), or the gig economy, is currently a topical issue attracting global research interest [Malik et al., 2021; Mandl, 2021; Piasna et al., 2022] not only due to the increasing digitization of economies and the implementation of innovations in this field [Kessler, 2018; Vallas and Schor, 2020], but also because of the widespread effects of the economic downturn, exacerbated by the COVID-19 pandemic.

Platforms mediating work, digital labor platforms, and the gig economy are new terms in the language of economics, and their use is not always unambiguous and consistent. The term gig economy is used to denote a segment of the economy in which the transaction involves services that are ordered by businesses or consumers through a specially designed platform and the services are performed by gig workers or freelancers, who are also registered with the platform. Services can be delivered online (online gig economy) or offline (physically, offline gig economy). Such services are referred to as platform work [Florisson and Mandl, 2018; ILO, 2021]. Although the Cambridge Dictionary [n.d.] defines the gig economy in broader terms as “a way of working that is based on people having temporary jobs or doing separate pieces of work, each paid separately, rather than working for an employer,” which is related to the original use of the term gig economy [Minter, 2017]. Occasionally, some researchers still use this definition or do not specify what they include in the gig economy [cf. OECD, 2019; Boeri et al., 2020; Mahato et al., 2021].
However, the development of labor platforms resulted in the unprecedented fragmentation of tasks and the instantaneous matching of the supply with the demand, so that nowadays the gig economy is understood as a segment of labor platforms that coordinates online transactions of services performed as remote work (e.g., IT services) or offline services (e.g., food delivery)—location-based platforms or local gig economy platforms. This approach prevails in world literature [Bogenhold et al., 2017; Dazzi, 2019; Duggan et al., 2020; Koutsimpogiorgos et al., 2020; Mia and Habaradas, 2020; Vallas and Schor, 2020; Spithoven, 2021] and has also been adopted in this article. A terminological shift from the expression gig economy to platform work and from gig worker to platform worker can be observed in European publications [Kilhoffer et al., 2019], which becomes evident, for example, in the comparison of early and later studies by Huws et al. [Huws and Joyce, 2016a,b,c; Huws et al., 2019; Kilhoffer et al., 2019; Makó et al., 2020; Ilsoe et al., 2020]. Another change involves the transition from the use of the term online gig economy to remote work organized via online platforms [Braesmann et al., 2021]. As a result, a variety of terms are used in parallel to describe the studied phenomenon in literature worldwide.

Gig workers or platform-mediated workers, in other words, workers providing labor services in the gig economy, are a new and poorly researched group in the labor market, classified as an online labor market [Howcroft and Bergvall-Käreborn, 2019; Demirel et al., 2021; ILO, 2021]. It is difficult to determine their number and structure, not only due to lack of data, but also because of their ambiguous legal status, making the classification into this group difficult. As a result, they are usually not included in traditional statistics such as the Labour Force Survey and only occasionally do such statistics account for them [e.g., Statistics Finland, 2018]. Another issue is the nature of work performed. Workers are often referred to simply as gig workers or platform-mediated workers, but they constitute a genuinely diverse group. The distinction can be made between typical crowd work (simple, mass work) or freelancing (assignments or projects requiring specialist knowledge). According to Wallenstein et al. [2019], traditional freelancers are becoming increasingly similar to crowd workers due to strong competition, in particular global competition in online services. Therefore, they are referred to as new freelancers, and this article treats them as part of gig workers or platform workers.

As in the case of any new phenomenon, in addition to its basic definitions and classifications, its measurement and the description of its main actors are necessary. For >10 years, numerous and varied attempts to measure the scale of PMW and its performers have been made, both globally and in individual countries. They have yielded mixed and conflicting findings. Moreover, few studies have been conducted in Central and Eastern Europe, especially concerning Poland. The present article aims to determine the prevalence of PMW and the socio-demographic characteristics of platform workers in Poland. It studies the case of Poland, so, in addition, it seeks to establish whether the scale and structure of PMW in Poland is similar to that in other countries and how PMW may develop in the future. Hence, it may contribute to the wider discussion on the popularity and scale of PMW. The following research questions were proposed:

RQ1—What percentage of adult Poles are aware of PMW opportunities, have actively sought such employment, or plan to do so in the future?
RQ2—What percentage of adult Poles have performed PMW?
RQ3—What are the characteristics of platform workers in Poland, both in terms of socio-demographics and the types of tasks performed?

2 Literature review

2.1 Approaches to the measurement of PMW

Studies on the size of the gig economy have been conducted since 2009. In general, they can be divided into research on the demand side, investigating the demand for labor services, or on the service supply side, in other words, looking into service providers. One of the first studies was conducted by Ipeirotis [2010] and concerned the Amazon Mechanical Turk platform, examining the demand side—service buyers registered with the platform, types of online orders, etc. It was further continued in 2014, embracing the
analysis of the response of the supply side to new orders, i.e., the flexibility of the supply of labor services [Difallah et al., 2015]. In parallel, in 2010, Lehdonvirta and Ernkvist [2011] studied the types of online services, working hours, and wage levels of online service workers in China.

Kuek et al. [2015] identified the possibility of measuring the online gig economy by examining the total turnover in the online outsourcing service market. The studies on freelance work-mediating platform oDesk (now Upwork), conducted in 2009–2012, concerned employer and worker countries [Agrawal et al., 2013]. One of the first large-scale surveys in 2012–2015 of both buyers (the sample of 1 million) and workers (the sample of 260,000) operating within 30 platforms was conducted by Farell and Greg [2016].

Research methods used in early studies involved the analysis of accounts registered with the platforms, interviews with experts and platform users, surveys, the measurement of cash flows from platform activities, and dedicated applications enabling the collection of data on platform traffic. Early research revealed not only the small scale of turnover through platforms and the small number of orders and service workers, but it also showed the potential for the rapid growth of the segment, for example, the study by Agrawal et al. [2013] showed that in 2011–2012, the number of hours worked through one leading platform increased by 55%, which had already signaled high growth dynamics of the phenomenon.

Since 2016, the measurement of the online PMW has progressed significantly with the Online Labour Index (OLI), developed at the Oxford Internet Institute [Kassi and Lehdonvirta, 2018] and based on information from a sample of five representative platforms. It mainly measures—in relation to the start of the data collection (May 2016)—not only the demand for online services transacted through the platforms, their structure by employer country and occupation (six groups), but it also tracks the side of labor providers according to the analogous framework. To a limited extent, it allows for the measurement of the number of labor providers. The OLI creators also developed a new extended version of the indicator, OLI [2021], taking into account six non-English-speaking platforms: three Spanish-speaking and three Russian-speaking [Online Labour Observatory, 2021; Stephany et al., 2021] in addition to the existing five English-speaking platforms. The greatest value of the indicator is the real-time measurement of the online gig economy and the possibility of continuous observation and comparison of changes occurring in its level, but it applies only to fully online tasks and platform workers. Among the most recent studies, the findings obtained by Kassi et al. [2021] are of particular relevance here. They proposed an original method to determine the number of platform workers based on the registration of worker profiles with platforms and, as a result, they estimated that 163 million worker profiles were registered in the global freelance online economy, of which roughly 19 million had ever worked. The study shows a possible problem of registration—as seeking PMW and actually performing it, which is much less frequent. Although in the gig economy, workers respond to the demand immediately, they may also register their accounts with platforms and wait for orders in a crowd of other gig workers; their number may systematically increase, which is not equivalent to service delivery, as Kassi et al. [2021] pointed out. In addition, only part of the platform work was examined using this method, leaving out the workers registered with local gig economy platforms that mediate offline service delivery.

It seems that survey-based research has the strongest potential to provide comprehensive and detailed information about platform workers performing PMW. This kind of research, using an online questionnaire, was conducted, for example, by Katz and Krueger [2016], as a version of the Princeton Contingent Worker Survey, included in 2015 to RAND (American Life Panel). Large-scale online questionnaire surveys, aiming to determine the number and structure of platform workers providing online and offline services in several European countries, were conducted in 2016–2017, by Huws and Joyce [2016a, b, c] and Huws et al. [2017]. They were then continued in 2018–2019, to be conducted on representative samples of respondents in 13 countries in total [Huws et al., 2019]. As a result, they have become a source of comprehensive and unique knowledge on platform workers in a number of countries. However, reservations were expressed concerning the varying sample sizes across countries and the potential shortcomings of the method that involved the mixing of online and face-to-face surveys and the resultant limited comparability of the findings [OECD, 2019]. However, these can be justified by likely differences in the estimated penetration of the society with the rare phenomenon of platform work and the desire to obtain a satisfactory number of questionnaires from the respondents included in the survey, given the uniqueness of the phenomenon under study and the lack of a reference point for comparison.
The online survey and interview method has so far been used in many studies on PMW, but the problem concerning the interpretation of their results has usually involved imprecise definitions, for example, a study conducted in Norway [Alsos et al., 2017] included income earners from Airbnb (i.e., a capital platform); different age ranges of respondents were also adopted. A comprehensive overview of the findings of the studies conducted on this topic worldwide was compiled by OECD [2019]. As far as countries are considered, the largest number of studies focused on the United Kingdom [e.g., Balaram et al., 2017; CIPD, 2017; Boeri et al., 2018] and the United States [Pew Research Center, 2016; Boeri et al., 2018]; those countries appeared in the studies either as individual cases or in comparison with other countries. This can be explained by the emergence of labor platforms in the United States [Elance—1999, Amazon Mechanical Turk—2005—remote online work, and Uber 2009—ride hailing; Kessler, 2018; ILO, 2021] and their widespread use by platform online gig workers in the United Kingdom, which is evident in the OLI statistics, where the UK appears as the only European country (the other countries appear as “other Europe”) [OLI, 2021]. The COLLEM study had a slightly broader dimension [Pesole et al., 2018], covering 14 European countries, including 5 Central and Eastern European countries, and respondents aged 16–74 providing online or offline (on-location) platform work.

2.2 The number and structure of platform workers in Poland and other CEE countries according to various studies

Definitely, the broadest picture of platform workers was created by the Eurobarometer survey [2016] conducted in 28 European Union (EU) countries. Poland was included, and it was certainly one of the first studies that provided data about Poland. The Eurobarometer survey was repeated in 2018 [Eurobarometer, 2018]. It showed that in 2018, about 6% of the respondents had ever offered their work services on a platform in Poland. Latvia had the highest percentage (approx. 17%) and Portugal—the lowest (approx. 3%), while the percentage of regularly providing PMW in the United States, Italy, Czechia, Croatia, Spain, Denmark, and the Netherlands stood at approximately 4%. The interpretation of this type of data requires the information about the frequency of PMW; whether it took place at all or, for example, at least once during the last year, or regularly (e.g., at least once a week). Failure to account for this information can lead to misinterpretation or undermine the findings of a study.

In Poland, with regard to both the number of platform workers and other aspects of their activity, few studies have been conducted so far. The problem of insufficient exploration of the phenomenon and the weakness of terminology in this field in Poland is pointed out, among others, by Dazzi [2019]. As a matter of fact, the only ones were the Eurobarometer surveys [2016, 2018] cited above. Piasna and Drahokoupil [2019] and Piasna et al. [2022] carried out a study focusing on several Central and Eastern Europe countries (CEE) countries, including Poland, but it embraced the broader phenomenon of income earned from any Internet-based activity. Limited research on platform workers was conducted in Poland by Polkowska [2019, 2021], Beręsewicz and Nikulin [2021], and Muszyński et al. [2021], but it only addressed selected issues. Polkowska [2019] first used the interview method to investigate Uber drivers, focusing on their working conditions, and later followed it up to study Glovo couriers with the interview method and the analysis of online posts [Polkowska, 2021]; therefore, her research did not address the scale and structure of platform workers in Poland. In turn, Beręsewicz and Nikulin [2021] undertook to estimate the causal impact of the first COVID-19 wave on the number of active drivers and couriers. They showed a significant relative increase for Wolt and Glovo (15% and 24%, respectively) and a slight relative decrease for Uber and Bolt (~3% and ~7%, respectively) in comparison to counterfactual control. The study concerned only offline platform workers. Muszyński et al. [2021], based on 30 interviews with platform workers (offline and online) and freelancers, determined that workers on online platforms had experienced a slump in demand right after the beginning of the pandemic. Workers on food-delivery platforms faced initial higher demand, but later—due to the difficult situation on the traditional labor market—the platforms were flooded with new workers. The phenomenon of platform work in Poland has therefore been noticed, but remains significantly underresearched, especially in terms of scale and structure, in comparison to other European countries. The results of the studies from other Central and Eastern European countries—Czechia, Estonia, and
Slovenia—can offer a certain point of reference for the research on PMW in Poland. These countries, similar to Poland, have been members of the EU since 2004, and have similar economic conditions.

Although other attempts aiming to estimate the number and structure of platform workers have been made since the study by Huws et al. [2016a,b,c, 2019], it still remains a valuable research approach providing knowledge comparable to that derived from the Labour Force Survey. Piasna [2020, p. 10] indicates the difficulties in measuring the scale of gig workers manifested in inadequate progress toward the inclusion of this category in labor force surveys.

Huws et al. [2019] conducted her studies, mentioned above, in different countries in consecutive years (2016–2019). In the Central and Eastern European countries, she conducted them relatively late—in 2018–2019. As a result, she achieved the following results. In Czechia, 44.2% of the working age population worked via platforms at some point, in Estonia, it was 19.5%, while in Slovenia—36.3% [Huws et al., 2019; Piasna and Drahokoupil, 2019; SSCU, 2019]. Those results were higher than for the Western European countries, but the studies concerning those countries started earlier (in 2016)—the highest result was for Spain (2018)—27.5% Italy (2017)—21.7% (people who worked via platforms at some point). Due to the differences in the year of the study and the age boundaries of the studied population, the figures are incomparable, but they do show that surveys in the later period yielded higher results, which is related to the general upward trend for PMW [ILO, 2021], which should be taken into account when they are used as reference for the results obtained for Poland in 2021, presented later in this article.

Much lower results than those quoted above were obtained in the 2017 and 2018 COLLEEM survey [Pesole et al., 2018]. For example, the result for Czechia was 5.9% in 2018 (people who ever worked via platforms; 16–74 years old), while neither Estonia nor Slovenia were surveyed. Among the CEE countries, Slovakia was researched, with the results of 6.9% in 2017 and 6.1% in 2018, Romania—8.1% and 10.5%, respectively, and Lithuania—9.1% and 11.8%, respectively; the Western European countries also had significantly lower results in this study compared to Huws et al. [2019]. The sources of and possible reasons for the differences in the results are discussed by Piasna and Drahokoupil [2019]. In 2019, the same authors conducted a survey in five Central and Eastern European countries, in which they studied respondents aged 18–64 (the total of 4731 respondents, of which 1032 in Poland). They obtained the following results concerning whether the respondents ever performed platform work: Bulgaria—4.4%, Latvia—4.05%, Slovakia—7.1%, Poland—1.9%, and Hungary—7.8%. The study was conducted by Omnibus fieldwork. Only later data were weighted by socio-demographic characteristics, which can be treated as a shortcoming of the study. Another study conducted in 14 EU member states in 2021, covered 6 Central and Eastern European countries. It was conducted using the method involving computer-assisted telephone interviewing with a probability sampling technique [Piasna et al., 2022]. Based on its results, in the previous 12 months, platform work was performed: in Bulgaria—3.8%, in the Czech Republic—4.6%, in Estonia—4.5%, in Hungary—2.5%, in Poland—2.9%, and in Slovakia—5.7%. Due to a change in the research method, these results are not fully comparable with the previous ones.

The study by Piasna and Drahokoupil [2019] and Piasna et al. [2022] offers several conclusions regarding the socio-demographic characteristics of platform workers. The average age of a statistical platform worker (who performed PMW at least once a year) was 39.4 years (the average for the five countries under examination: Bulgaria, Hungary, Latvia, Poland, and Slovakia), while in Poland, the average age was slightly lower—37.5 years, while in the 2022 study—28.7 years. In all the surveyed countries, the majority of platform workers were men, accounting for approximately 54%–57% of gig workers.

The study by Huws et al. [2019] reached similar conclusions concerning the gender of gig workers—most of those undertaking platform work once a year were men (Czechia—56%, Slovenia—60.3%, and Estonia—69.3%). The only countries among the 13 studied by Huws et al. [2019], where women made up the majority of gig workers, were Italy and the United Kingdom. In terms of age of gig workers, the majority were 25–34 year olds (from 30.9% to 36.1% undertaking platform work at least once a year). These studies did not take into account information on place of residence—urban (including the size) or rural. Only the study conducted by Piasna et al. [2022] pointed to the concentration of platform workers in large cities. One other study suggested that online labor platforms disproportionately benefit skilled workers in rural areas [Braesemann et al., 2022].
All the studies quoted above [Pesole et al., 2018; Huws et al., 2019; Piasna and Drahokoupil, 2019; Piasna et al., 2022] also show that—in the countries under examination—online work was the leading type of activity and it tended to be followed by taxi/delivery work. The above characteristics and other more specific features of platform workers in Poland were the subject of the study, the method and results of which will be presented in the further parts of the article. The study proposes a method for the step-by-step selection of platform workers, starting from the prior evaluation of the knowledge on PMW in society.

3 Methods

The main aim of the survey was to map the true prevalence of PMW in the Polish society and the characteristics of platform workers. The research in the part presented in this article was designed and directed by the author of the article. The method used was also applied in the studies quoted above and involved the diagnostic survey technique with the application of an online survey questionnaire as a research tool. Fieldwork for the survey was carried out by Ariadna—a specialist research company with access to a research panel comprising approximately 300,000 registered participants, which allows for the selection of a sample that reflects the current demographic structure and is representative of the population of adult Poles in terms of gender, age, and place of residence. Invitations to complete the survey are sent to active panel respondents, chosen based on the required demographic structure. The number of returned questionnaires is monitored throughout the duration of the survey. In the study, Ariadna was responsible for data collection only. The survey was conducted on July 2–6, 2021. The research company determined the time required for conducting the survey; no constraints were imposed by the author. The author was responsible for analysis, reporting, and interpretation of the results.

The adequate selection of the sample of respondents was ensured through the application of quota sampling. The structure of respondents corresponded to the general population of Poles aged 18–70, of which 51% were women and 49% were men. According to the age criterion, 13% were respondents aged 18–24; 23% were aged 25–34; 38% were aged 35–54; and 26% were aged 55–70. In terms of place of residence: 38% were residents of large cities with over 50,000 inhabitants; 25% were residents of cities with up to 50,000 inhabitants; and 38% were residents of rural areas. Due to the potentially low prevalence of platform work in the population, the required number of returned questionnaires was set at over 3,000 respondents to obtain a satisfactory response rate ensuring data reliability. Since the response rate was about 28%, the number of questionnaires sent to respondents was increased (approx. 23,000 in total). Finally, 3,165 correctly completed questionnaires were included in the study. Prior to the study, a trial Omnibus survey had confirmed the presence of the phenomenon at a level justifying more in-depth research.

Since the study was conducted as an online survey, it should be assumed that, as in other similar studies, the number of potential users of labor platforms, who are at the same time Internet users, was overrepresented [Huws et al., 2019; Piasna and Drahokoupil, 2019].

In the course of the survey, the questionnaire first provided the precise meaning of the term “PMW,” including the examples that would prevent incidental inclusion of the respondents in a given category. Additionally, the author took into account the reservations stemming from previous studies and recommendations for future research, including those on how to formulate the questions addressed to respondents [OECD, 2019, p. 4, 23; Piasna, 2020]. For example, it was decided not to ask respondents for the names of the platforms through which they worked, nor were they offered a name to choose from a list, because of the difficulty and ambiguity that such a question generates [Piasna, 2020]. It is worthwhile to observe that with regard to the results of previous studies and their discrepancies, the focus was mainly on errors leading to an overestimation of the number or percentage of platform workers in the population of a specific country [OECD, 2019; Piasna, 2020, 2021]. However, the underestimation of the size of this

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1 In the Ariadna research panel, respondents whose completed questionnaires qualify for the study receive points, and upon accumulating a sufficient amount, they can exchange them for small gifts, but not for cash. The allocation of points influences the survey’s response rate.
group is also an eventuality to be considered, one of the reasons for which it may be the desire to avoid answering so-called sensitive questions. For example, if a respondent earns an undeclared income, they may be reluctant to give the name of the platform they are registered with or they may understate the level of income from this work or the time spent on platform work [cf. Bracha and Burke, 2021]. In Poland, gig workers, especially online platform workers, can have an unclear status. It was very important that the survey should formulate questions in a way that would not discourage respondents from providing answers.

A step-by-step mechanism for selecting platform workers was used, as illustrated in Figure 1. First, the filtering question allowed for the identification of the group of respondents possessing the knowledge of digital labor platforms. The need to use this question stemmed from the assumption that such knowledge was limited in society due to the novelty of this phenomenon. The filtering question also allowed for specific questions to be asked to the relevant group of respondents. As a result, this approach helped prevent incidental responses.

This method allowed for the creation of a vast body of knowledge not only about the actual number of gig workers in the population aged 18–70, but also about the awareness of platform work, related past experiences, and attitudes toward platform work in the future. The designed research procedure also reduced the costs of the survey, while maintaining its high quality. Active gig workers were defined as those who provided PMW in the last 12 months (i.e., from the beginning of July 2020 to the beginning of July 2021). To a certain extent, the findings can be compared with those of similar studies, however, taking into account that several years have passed since the earlier studies were conducted, a significant increase in the number of gig workers might have occurred, as this segment is growing dynamically. Moreover, the study was conducted 16 months after the start of the pandemic, which, in principle, led to an increased employers’ interest in PMW and, potentially, could have boosted the number of platform workers [cf. Beręsewicz and Nikulin, 2021]. This does not determine the scale of transactions, as this is a demand-driven market, due to the permanent surplus of the supply of services [Graham and Anwar, 2019; Dunn et al., 2020].

### 4 Findings

In addition to the detailed description of PMW, which was included in the introduction and illustrated with examples, the questionnaire contained the filter questions indicated above, qualifying for further completion. The next three survey questions allowed for the investigation of RQ1. The first question was formulated in very general terms: have you heard about the possibility of earning income through platform work (such as MTurk, Freelancer, Uber, UberEats, Glovo, or others)?

This question was answered affirmatively by 66% of the respondents (2,099 persons; level of confidence = 95%, stand. error = 0.84; conf. interval: 64.32%–67.68%), of which 1,070 were women and 1,029 were men, i.e., the percentage of representatives of both genders was similar; 76% of young people aged 18%–24% and 75% of people aged 25–34 answered “yes”; in older age groups, the percentage was lower: 65% in the 35–54 age group and 57% in the 55–70 age group. With regard to the place of residence,
72% of the inhabitants of cities over 50,000, 64% of the inhabitants of cities below 50,000, and 62% of the inhabitants of rural areas responded affirmatively. Accordingly, in each group, the majority of respondents were aware of platform work, so it can be considered a fairly popular phenomenon. The group of people who have heard about the possibility of earning income from platform work was next asked the question: do you sometimes look for paid work coordinated via a digital platform? Table 1 shows the structure of answers to this question.

The data show that as many as 30%, i.e., 945 people, out of the initial sample of 3,165 respondents, have at some point looked for PMW. At this stage, it was not yet known whether they had actually provided such work, but the interest itself can be assessed as significant. A few more women tended to look for PMW, but they did so relatively less often than men. The largest proportions of PMW seekers were in the 35–54 and 18–24 age groups, and they constituted the majority in those groups. In the oldest age group, PMW seekers accounted for the smallest percentage; nevertheless, 28% had the experience of looking for such work. In general, people aged 25–34 were relatively most likely to look for PMW (very often or often, 27% in this group). In terms of the place of residence, half of the residents of towns up to 50,000, who had heard about the possibility of earning an income by performing PMW, looked for such work; residents of large cities, who were a majority in the surveyed group, looked for PMW slightly less often.

Table 2 shows the structure of responses to the question: Do you intend to look for PMW in the future? This question aimed to assess the attitude toward PMW as a future job. The intention to seek PMW in the future may also have been inspired by the questionnaire.

The significant majority (52%) of respondents (the group who heard about income-earning opportunities of platform work) intended to look for platform work in the future. A large percentage remained undecided, while only a small share of the group declared no intention of seeking platform work. This indicates a potentially significant interest in PMW in the future. No clear differences between the groups based on gender were revealed. However, they occurred in the age groups. The highest percentage of those determined to look for PMW in the future was in the youngest group (59%), where the percentage of the undecided was

<table>
<thead>
<tr>
<th>Response/socio-demographic characteristic</th>
<th>Total</th>
<th>Gender</th>
<th>Age (years)</th>
<th>Place of residence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Woman</td>
<td>Man</td>
<td>18–24</td>
</tr>
<tr>
<td>N (%)</td>
<td>2,099</td>
<td>1,070</td>
<td>1,029</td>
<td>319</td>
</tr>
<tr>
<td>In total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Yes, very often</td>
<td>130</td>
<td>60</td>
<td>70</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Yes, often (a few times a month)</td>
<td>217</td>
<td>93</td>
<td>124</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>8%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Yes, but seldom</td>
<td>271</td>
<td>129</td>
<td>142</td>
<td>55</td>
</tr>
<tr>
<td>(no more than once a month)</td>
<td>13%</td>
<td>12%</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>Yes, very seldom</td>
<td>336</td>
<td>181</td>
<td>155</td>
<td>62</td>
</tr>
<tr>
<td>(sporadically, less than once a month)</td>
<td>16%</td>
<td>17%</td>
<td>15%</td>
<td>19%</td>
</tr>
<tr>
<td>No, never</td>
<td>1,145</td>
<td>607</td>
<td>538</td>
<td>144</td>
</tr>
</tbody>
</table>

Source: The author’s survey.

PMW, platform-mediated work.
Table 2. Do you intend to look for income-earning work via a digital platform in the future? (N = 2,099—respondents who have heard about income-earning opportunities of PMW)

<table>
<thead>
<tr>
<th>Response/socio-demographic characteristic</th>
<th>Total</th>
<th>Gender</th>
<th>Age (years)</th>
<th>Place of residence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Woman</td>
<td>18–24</td>
<td>25–34</td>
</tr>
<tr>
<td></td>
<td>N =</td>
<td>2,099</td>
<td>1,070</td>
<td>1,029</td>
</tr>
<tr>
<td>In total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Definitely yes</td>
<td>355</td>
<td>174</td>
<td>181</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>16%</td>
<td>18%</td>
<td>17%</td>
</tr>
<tr>
<td>Rather yes</td>
<td>728</td>
<td>371</td>
<td>357</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>35%</td>
<td>35%</td>
<td>35%</td>
<td>42%</td>
</tr>
<tr>
<td>Difficult to say</td>
<td>706</td>
<td>379</td>
<td>327</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>34%</td>
<td>35%</td>
<td>32%</td>
<td>29%</td>
</tr>
<tr>
<td>Rather not</td>
<td>216</td>
<td>105</td>
<td>111</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>10%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Definitely not</td>
<td>94</td>
<td>41</td>
<td>53</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>3%</td>
<td>4%</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: The author's survey.
PMW, platform-mediated work.

also the lowest; there was also a high percentage of those interested in PMW in the next age group; the share of the undecided increased with age, while the highest percentage of respondents who gave a negative answer was in the oldest group aged 55–70, although more than one-third of this group was prepared to look for PMW. The data according to the place of residence are of significant interest as no significant differences were revealed in this respect, and it can be concluded that PMW reduces discrimination associated with the place of residence. Figure 2 provides the synthesis of the above results, after the elimination of the indirect answer “difficult to say.” It shows a clear predominance of the respondents intending to look for PMW in the future.

Finally, the respondents (the part who had heard about PMW) were asked whether they had performed income-earning work coordinated via online platforms (RQ2). Table 3 shows the structure of the responses. The response options varied according to the time of latest activity.

In total, 735 respondents gave a positive answer, meaning that they had earned income from PMW at some point. This accounted for about 35% of the particular group, but in relation to the initial sample from the general population (3,165 respondents), it was approximately 23%. However, taking into account the most recent involvement—at the latest within the last year—the group of active platform-mediated workers shrank to 523 people, i.e., about one-fourth of the respondents who had heard about PMW and 16.5% of the initial sample corresponding to the general population aged 18–70. This percentage can be considered a number defining active gig workers in Poland in a broad sense. Taking into account work performed within the last month in the study group, it concerned 252 people; in other words, about 8% of the initial sample corresponding to the general population. The order of magnitude obtained for the percentage of active gig workers can be considered comparable to the study conducted by Huws et al. [2019], closest to the result achieved for Estonia (19.5%—people who have worked via online platforms at some point). In terms of the general population, within the last year, PMW was performed by 16.5% of women and 16.7% of men; in the youngest age group, 18–24 years of age, 22.7% performed PMW, in the group of 25–34, it was 24.7%; in the group of 35–54, it was 16.2%, and in the group of 55–70, it was 6.8%. With regard to the place of residence, within the last year, PMW was performed by 18.7% of the residents of cities over 50,000, 16.1% of the residents of cities under 50,000, and 14.9% of the residents of rural areas.

It is also worthwhile to point out that in relation to the information elicited by the answers to the question in Table 1, which indicated that 45% of the respondents who heard about PMW looked for platform work at some point, the responses to question 3 show that about 35% of this group of respondents performed this
Table 3. Have you performed income-earning work online or offline coordinated via digital platform? (N = 2,099—respondents who have heard about income-earning opportunities of PMW)

<table>
<thead>
<tr>
<th>Response/socio-demographic characteristic</th>
<th>Total (N)</th>
<th>Woman</th>
<th>Man</th>
<th>18–24</th>
<th>25–34</th>
<th>35–54</th>
<th>55–70</th>
<th>Urban above 50,000</th>
<th>Urban up to 50,000</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 2,099</td>
<td>2,099</td>
<td>1,070</td>
<td>1,029</td>
<td>319</td>
<td>537</td>
<td>783</td>
<td>460</td>
<td>855</td>
<td>504</td>
<td>740</td>
</tr>
<tr>
<td>In total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Yes, within the last month</td>
<td>261</td>
<td>134</td>
<td>127</td>
<td>43</td>
<td>94</td>
<td>104</td>
<td>20</td>
<td>114</td>
<td>61</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>12%</td>
<td>13%</td>
<td>12%</td>
<td>13%</td>
<td>18%</td>
<td>13%</td>
<td>4%</td>
<td>13%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Yes, but it was over a month ago</td>
<td>262</td>
<td>124</td>
<td>138</td>
<td>53</td>
<td>81</td>
<td>93</td>
<td>35</td>
<td>108</td>
<td>68</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>12%</td>
<td>12%</td>
<td>13%</td>
<td>17%</td>
<td>15%</td>
<td>12%</td>
<td>8%</td>
<td>13%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Yes, but it was over a year ago</td>
<td>218</td>
<td>109</td>
<td>109</td>
<td>33</td>
<td>67</td>
<td>69</td>
<td>49</td>
<td>83</td>
<td>69</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>10%</td>
<td>11%</td>
<td>10%</td>
<td>12%</td>
<td>9%</td>
<td>11%</td>
<td>10%</td>
<td>14%</td>
<td>9%</td>
</tr>
<tr>
<td>No</td>
<td>1,358</td>
<td>703</td>
<td>655</td>
<td>190</td>
<td>295</td>
<td>517</td>
<td>356</td>
<td>550</td>
<td>306</td>
<td>502</td>
</tr>
<tr>
<td></td>
<td>65%</td>
<td>66%</td>
<td>64%</td>
<td>60%</td>
<td>55%</td>
<td>66%</td>
<td>77%</td>
<td>64%</td>
<td>61%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Source: The author’s survey.
PMW, platform-mediated work.
kind of work, which means that about 10% failed to find it. Referring to the general population, it can be concluded that 30% looked for work via platforms at some point and 7% were unsuccessful.

The question on the type of work performed (RQ3), answered by 523 survey participants, allowed the respondents to indicate more types of work performed (Table 4), so responses do not add up to 100.

The most popular type of work performed included minor online jobs; this was the case for all groups, regardless of gender, age, and place of residence. The highest percentage (more than half of a given group) performed this type of work in younger age groups and among the residents of rural areas. The respondents also declared involvement in online projects frequently, with the highest share in the 25–34 age group and in large cities (about one-third of a given group). Men were the dominant group among offline service providers—as drivers. This category was ranked third among the types of work performed. Interestingly, drivers were more prevalent among workers based in medium-sized rather than in large cities, which may be explained by the possibility of commuting to larger cities to deliver transport services and limited opportunities to undertake additional work in smaller cities. On location, work other than driving was much less popular, concerning 14% of male workers and 12% of the residents of medium-sized and small cities. In the other groups, the percentage performing such work was lower. The proportion of workers combining online and offline activities via platforms was significant, reaching over 10% in all groups, with the highest proportion in the oldest age group. In the category “other,” the respondents had the option of providing the type of work they performed. The only recurring answer in 35 cases was filling in surveys, which was treated as a kind of paid work (people filling in surveys collect points for which they are rewarded with gifts); in addition, the respondents made single mentions of gardening, online tutoring, or filling in online applications. Given that there may be incorrect entries among these categories, it was decided against adding them manually to the previously mentioned groups or removing them.

5 Discussion

In the initial stage, the study performed an Omnibus sample survey (only two control questions were asked). The results were lower than those obtained in the actual survey, the results of which are presented in the

<table>
<thead>
<tr>
<th>Table 4. What type of PMW do you perform? (N = 523—respondents who have performed PMW at the latest within the last year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response/socio-demographic characteristic</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Online (microtasks, crowding)</td>
</tr>
<tr>
<td>Online – projects</td>
</tr>
<tr>
<td>Offline – driving</td>
</tr>
<tr>
<td>Offline – other than driving</td>
</tr>
<tr>
<td>Online and offline</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Source: The author’s survey.

PMW, platform-mediated work.
The question also arises as to over what time horizon to measure the activity of platform workers—on a weekly, monthly, or annual basis? A variety of approaches can be quoted [Huws et al., 2019; Piasna and Drahokoupil, 2019; Piasna et al., 2022]. It seems expedient to adjust the period of activity to research needs—if we want to observe the dynamics of the sector, it is better to do it weekly or monthly, but if we want to study respondent views on how a platform operates, it is worth asking also those who had the last contact within a year, because they have relevant the knowledge, experience, and, above all, an adequate perspective to evaluate the phenomenon. On the other hand, it should be remembered that inaccurate determination of the date of the last activity of worker platforms may also lead to many errors in the interpretation and measurement of the scale of the phenomenon.

The study revealed a percentage of the population engaged in PMW comparable to that obtained by Huws et al. [2019] and correspondingly higher than in the studies by Piasna and Drahokoupil [2019] and, earlier, the Eurobarometer [2018]. It is worth taking into account that the study was performed in July 2021, which was more than 2 years later and, in addition, after more than a year of the pandemic, resulting in a shift toward various forms of remote work, including PMW. This may explain a relatively high percentage of gig workers in Poland. Surprisingly, the study by Piasna et al. [2022], conducted in early 2021, did not reveal the trend toward increasing numbers of gig workers, but it used a different research method.

The greatest differences in terms of socio-demographic characteristics occurred between age groups. Neither gender nor place of residence was a source of major differences. The slight predominance of men and the dominance of the representatives of the 35–54 age group reveal some similarity to the results of the studies by Huws et al. [2019] and Piasna and Drahokoupil [2019]. The place of residence of platform workers was not the subject of previous detailed studies; therefore, the results obtained are not comparable.

6 Conclusion

The study created a relatively broad picture of platform workers—embracing both the society’s knowledge of and attitudes toward income-earning by performing work coordinated via digital platforms; search for this type of work (not necessarily successful), respondents’ intentions for the future; and finally, the actual proportion of platform workers in the population aged 18–70 in Poland, their structure, and the type of work they perform. All this was, obviously, achieved within the constraints of the study.

The percentage of platform workers in Poland revealed in the author’s survey conducted on a large, representative sample can be considered significant, and the phenomenon of platform work in Poland requires more in-depth research, because its scale is not marginal. The research perspective adopted in the study established that the percentage of those actually interested in participating in the gig economy is higher than the percentage of platform workers in the general population, which amounted to 8% and 16.5% of active workers over the past month and year, respectively. The percentage of those who looked for such work at some point was about 7 percentage points higher than the percentage of platform workers who earned income from platform work at some point. High interest in PMW in the future declared by the respondents leads to a conclusion that this segment in Poland will grow further. The study shows that in Poland, platform workers tend to be male slightly more frequently, are most likely to be in the age group of 35–54, and live in large cities of over 59,000. In terms of work, online workers are the most numerous group. In Poland, PMW is not differentiated by place of residence. Although in small cities and rural areas, offline services mediated via platforms cannot be performed, Internet access makes it possible to provide remote services mediated via platforms. Therefore, the hypothesis for further research can be formulated
that platforms mediating online work services reduce discrimination related to the place of residence, as in Poland residents of rural areas are usually in a worse position; they are more likely to be unemployed.

Knowledge of PMW is relevant to the problems potentially generated by the segment of labor platforms, related to low job quality [Kessler, 2018; Prassl, 2018]. Therefore, in-depth research on the new segment of PMW and the continuous creation of knowledge about this segment and how it functions in different countries remain of great importance.

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