WORKING

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Platform Workers: Their Numbers and Characteristics*

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This article is intended to report the results of a recent survey conducted by the Korea Labor Institute and the Ministry of Employment and Labor to determine the size and the characteristics of Korea's platform economy. In this article, platform labor is primarily defined as "an employment form that uses an online platform such as a mobile app or a website to enable organizations or individuals to find customers or jobs." Among the broadly-defined category of platform workers, users of simple job search apps and e-commerce workers are excluded due to their exchanges not being platform-mediated. The number of the remaining ones, i.e. platform workers in the narrow sense, is estimated to be 220,000 persons, and about 52% of them are in the delivery and transport sectors. The results indicate that the heterogeneity within platform labor is very high, and that there are vastly different degrees of autonomy in setting the price of services, choosing tasks

to be performed, selecting working hours, as well as receiving performance appraisal.

I. Introduction

Digital Transformation has become a buzzword in today's social and economic world. At its core is the platform economy. Almost anything imaginable is being traded using a digital network, and we call it a platform. Labor is no exception, and it has become easy to find platform workers around us. And, it is paradoxical that in this time of social distancing caused by the COVID-19 pandemic, the importance of delivery workers who perform essential labor for 'connecting' people has become all the more apparent.

In order to come up with measures to protect platform

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workers, the primary task would be to identify how many platform workers exist in Korea and what characteristics they have. Thus, the Korea Labor Institute and the Ministry of Employment and Labor jointly conducted a survey to understand the size and characteristics of platform economy,[1] and this article is intended to report the results.

The questionnaire, a measurement tool to evaluate the status of platform workers, was drafted from the survey questions presented in the report "Examining the Methods for Statistics and Survey Data Collection to Understand the Status of Platform Labor," prepared by the Korea Labor Institute and commissioned by the Presidential Committee on Jobs in 2019 (Jiyeun Chang and Minju Jung, 2020). To verify the validity, the main survey questionnaire was confirmed through additional cognitive interviews and pilot tests. The target population was set to individuals aged 15 to 65 years, which was sampled using a proportional sampling method based on proportionate quota sampling by region (17 different cities and provinces), gender, and age. Surveying was done through wired and wireless RDD, and a total of 90,000 cases were secured. It was conducted in October and November 2020.

II. Platform Workers :
Numbers and Characteristics

The first step to identify the total number and the characteristics of platform workers is to conceptually understand and define what platform labor is. First, let us start with defining a platform. A platform refers to a digital network that coordinates economic transactions in an algorithmic way (Eurofound, 2018). It is also defined as a

business model targeting a two-sided market (Seunghun Lee, 2020). The digital platform can be considered a kind of "market" because it is an online space where transactions take place.[2] However, since such transactions are coordinated by algorithms previously installed by platform operators and profits are generated in the process, it can be said that the digital platform is a kind of business and a firm. In short, a platform is a "business" whose main activity is to "match" supply and demand.

It is widely observed that "labor" is arranged and traded through online platforms. In one of the questions in this survey, those who had worked for income during the previous three months were asked, "Did you use online platforms such as an app or a website to find a customer or a job for any of the work you carried out?" Those who answered "yes" with the name of the app or website accounted for 7.64% of all employed persons. Assuming that there are 24 million workers aged 15 to 64, the percentage is translated into 1.834 million workers.

86% of all the respondents who said "yes" provided the name of a specialized job search app they used. Most of them mentioned "Albachunkuk" or "Albamon", and some also mentioned "Worknet" or the official website of their city or district offices. Would it be reasonable to count these respondents as platform workers? Not really. Online job matching has long been no surprise to anyone. If all of those jobs found via online platforms are classified as platform labor, the authenticity given by the concept of "platform labor" will disappear. Some may argue that marginal part-time work or on-call work should be viewed as platform labor, which requires defining precarious work matched through the digital platform as platform labor.[3] However, the author of this article does not agree with that position considering the following case:

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1) This survey was conducted jointly with Seoul Metropolitan Government's "Platform Labor Survey" project, and the actual survey was conducted by Global Research & Data.
2) The transaction does not necessarily have to be paid. There are many platforms such as Google, Facebook, and YouTube where money is not directly traded. Seunghun Lee (2020) calls these platforms an "open-square type" and distinguishes them from a "market type". An open-square type platform relies on advertisements as its business model.
3) Korea Employment Information Service uses this definition to estimate the number of platform workers (Junyoung Kim, 2019).

When I searched for "loading/unloading of courier packages" (T/N: one of the typical part-time jobs in Korea) on job search sites such as "Albachunkuk," it returned countless job posts. I found a contact number in those posts, and sent a text message with "courier name, applicant's name, age, gender, commuter bus boarding location, and desired work period." An automated response was sent to my phone, asking for a scan of my ID and my bank account number. I took a photo of my ID and sent it with my bank account number. Finally, I received a message, "Can you come to work today?" (Labor Today, December 1, 2020, "16-hour night labor of parcel loading and unloading for less than 10,000 won per hour")

In this case, there is no basis to conclude that the platform "coordinated the transaction." Rather, it served as a bulletin board. The digital platform is a structured digital space in which goods and services (labor) are exchanged, and the services traded here are platform labor (Jiyeun Chang and Minju Jung, 2020). This is the primary definition of platform labor. Thus, we would like to exclude the cases where the platform does not have a coordinating role and simply acts as a bulletin board. Securing the homogeneity of platform workers by excluding simple job search sites will also help implement protection policies for such workers. "Albachunkuk" does not maintain any

record of where one worked or what kind of work he did. Needless to say, it is impossible to ask "Albachunkuk" for a fair work contract or impose responsibilities as a quasi-employer.

The second area to be excluded is e-commerce or leasing. If the digital platform is used to trade goods or lease assets instead of trading labor, it is not related to platform labor. Those who earn income by selling products through "Naver Store" can be seen as part of the platform economy in a broad sense, but cannot be considered as platform workers. Thus, this survey attempted to capture genuine platform workers by first asking what kind of work the respondents did and then excluding those who worked in the areas of e-commerce, online shopping malls, and leasing business.

In this survey, platform workers are defined as those who find a customer or a job via online platforms but not including users of simple job search apps and e-commerce workers. When using this definition, about 220,000 persons (or 0.92% of all employed persons) can be regarded as platform workers. If we choose to count all who trade labor using the digital platform including users of simple job search apps and platform workers, the number is estimated to be about 1.79 million persons, taking up 7.46% of the employed (see Table 1).

It was found that the number of cases where one finds a

⟨Table 1⟩ Estimated Number of Platform Workers

	Population Aged 15-64					
		Employed Persons				
			Individuals Finding Jobs Using Platforms			
			All	E-commerce Workers	Individuals Providing Labor	
					Users of Simple Job Search Apps	Platform Workers
Number of Cases (persons)	90,000	59,106	4,500	93	3,865	542
Percentage (%)		100	7.61	0.16	**6.54**	**0.92**
Estimated Number (thousand persons)			1,826	38	**1,570**	**220**

Note : 1) The estimation was made assuming the number of employed persons aged 15-64 was 24 million
2) In all tables in this article, weights are applied to the number of cases. Thus, the sum of the number of cases may not be equal to N.

⟨Table 2⟩ Types of Platform Labor

(Unit : Persons, %)

Online			Offline		
1 IT	25	(11.3)	1 Delivery and Transport	282	(67.8)
2 Professional Services	19	(8.7)	2 Domestic Work	21	(5.0)
3 Creative Activities	33	(15.0)	3 Professional Services	49	(11.8)
4 Simple Tasks	43	(19.7)	4 Make to Order	10	(2.5)
5 E-commerce	**94**	**(42.7)**	5 Leasing	0	(0.0)
6 Others	6	(2.6)	6 Others	54	(13.0)
All	219	(100.0)	All	416	(100.0)
All excluding 5	126	(57.3)	All excluding 5	416	(100.0)

Note : The response data includes e-commerce. Details of the options are as follows: (Online) 1. Software development and IT technical support; 2. Professional services such as legal, accounting, education, advertisement, publishing, voice actor, translation, etc.; 3. Creative activities such as YouTube creation, broadcasting, design, illustration, etc.; 4. Simple office tasks using computers such as data input; 5. E-commerce, online shopping mall. (Offline) 1. Driving, delivery, cargo transportation, moving, errands, etc.; 2. Community-based services such as cleaning, repair, care work, domestic work, construction work, and caring for pets, etc.; 3. Professional services such as education, tutoring, hobby lessons, local tour guides, and interior design, etc.; 4. Make to order, laundry, car wash, funeral, wedding planning, beauty services, etc.; 5. Leasing business.

job using a digital platform but performs it offline is more than three times as many as the number of cases where one performs his job online. Delivery and transport work accounts for 67.8% of all platform labor performed offline and 52% of all platform labor. At present, more than half of Korea's platform workers can be seen to be engaged in transport-related work such as delivery or designated driver services.

In terms of the popularity of the digital platform, the most commonly used apps were "Baemin Riders", "Baemin Connect", "Coupang Eats" and "Coupang Flex". "24-hour Cargo" and "Zimca" (for cargo transportation), as well as "Logi" and "Kakao T Driver" (for designated driving) were also mentioned frequently. There were a few platforms combining delivery with other errands, such as "Ddingdong" and "Anyman," and domestic service platforms such as "Your Jipsa" or "Daeri Jubu" also stood out. A number of respondents mentioned the widely known "Kmong", and others also mentioned "Soomgo" and "Jaenung.net", both of which provide various kinds of life services. Some also mentioned "Wishket" (IT developer network) and "Gangsa.com" and "Find Gangsa" apps for finding instructors by specialized field. As for platforms

⟨Table 3⟩ Respondents Currently in Platform Labor : How They Perceive Platform Work

(Unit : Persons, %)

	Current Work		Work Performed in the Past 3 Months		Total	
Main Job	235	(59.1)	34	(23.6)	269	(49.7)
Side Job	163	(40.9)	110	(76.4)	273	(50.3)
Total	397	(100)	144	(100)	542	(100)

connecting translators, "Flitto" and other apps based on collective intelligence emerged. A number of responses mentioned crowdworks that produce data for AI machine learning.

When asked whether their work was a main job or a side job, half of the respondents who were engaged in platform labor answered that it was their side job (see Table 3). Although it was not possible to confirm if they really have another job, it shows that half of them do not consider their platform job as their main job. The responses are summarized in <Table 4> according to online/offline jobs. Online platform labor had a higher percentage of workers who perceive their work as a side job. As for platform labor conducted offline, more than half of the respondents said that it was their main job.

〈Table 4〉 Respondents Performing Online/Offline Platform Labor : How They Perceive Platform Work

(Unit : Persons, %)

	Online		Offline		Total	
Main Job	48	(37.8)	221	(53.2)	269	(49.7)
Side Job	78	(62.2)	194	(46.8)	273	(50.3)
Total	126	(100.0)	416	(100.0)	542	(100.0)

III. Platform Labor : Autonomy and Dependency

In order to determine the degree of autonomy and dependency of platform workers, four survey questions were used: who decides the price of services, how the work to be performed is decided, who determines the working hours, and whether there is an evaluation system. If the price of services is determined by the worker, it would suggest that he is running his own business. According to the survey results, the platform took up the highest percentage at 41.7% as the entity that determines the price of services and 14.8% of the respondents said that they set the service price on their own (see Table 5). One important indicator of autonomy is whether or not the worker can choose the tasks to be performed. If he does not have a choice, he can be seen as an employed person. The results of this survey showed that 58% (largest share) of the respondents could decide the work to be done, but 23.5% answered that they had to perform the work assigned to them without a choice (see Table 6). Another important indicator of autonomy is the right to choose the working hours. In this survey, 69% (largest share) of the respondents were able to decide the working hours themselves, but the percentage of those whose working hours were determined by the platform or the agency was higher than expected at 30.9% (see Table 7). Some platform companies use a star rating system to evaluate their workers, and it has drawn attention as a performance management sys-

〈Table 5〉 Entity That Determines the Price of Services

		Online		Offline		Total	
Myself	Alone	35	(28.1)	45	(10.7)	80	(14.8)
	Discuss with Customer	23	(18.7)	52	(12.6)	76	(13.7)
Customer		14	(11.5)	53	(12.7)	67	(12.4)
Platform		47	(37.5)	178	(42.8)	225	(41.7)
Agency		5	(3.6)	85	(20.4)	89	(16.6)
Others		1	(0.7)	3	(0.8)	4	(0.8)
N		126		416		542	

Note : The question was 'Who determines the price of services?'

〈Table 6〉 Work Assignment

	Online		Offline		Total	
Myself	74	(59.5)	238	(57.6)	311	(58.0)
I perform the assigned work / No choice	12	(9.5)	114	(27.7)	126	(23.5)
I make proposals but customers make a choice	38	(31.0)	61	(14.8)	99	(18.5)
N	124		413		537	

Note : The question was 'How is the work to be performed decided?'

〈Table 7〉 Entity That Decides the Working Hours

		Online		Offline		Total	
Platform/Agency		14	(11.1)	154	(36.9)	168	(30.9)
Myself	Flexible	97	(77.2)	225	(54.2)	322	(59.5)
	Fixed for a certain period	15	(11.7)	37	(8.9)	52	(9.5)
N		123		416		542	

Note : The question was 'Who decides the working hours?' If the response is 'Myself', the following additional question was asked: 'Are you able to change your working hours freely?'

tem based on algorithms. Such a mechanism enables platform companies to control workers even though they are not employed. About 46.5% of the respondents reported that their platform had a performance appraisal mechanism, which was found to have an effect on the income of workers (see Table 8).

〈Table 8〉 Existence/Use of a Performance Appraisal System

	Online		Offline		Total	
No	57	(45.2)	233	(56.0)	290	(53.5)
Yes	69	(54.8)	183	(44.0)	252	(46.5)
Disqualified	4	(5.5)	25	(13.9)	29	(11.6)
Temporarily disqualified	5	(7.0)	43	(23.6)	48	(19.1)
Less work	48	(69.6)	83	(45.4)	131	(52.0)
Lower fee per case	12	(18.0)	14	(7.8)	27	(10.6)
Not affected	8	(12.2)	37	(20.0)	45	(17.9)
Not sure	5	(7.3)	21	(11.3)	26	(10.2)

Note : The question was 'Is there an evaluation system such as a star rating system to rate your work performance or service satisfaction?' If yes, the following additional question was asked: 'What happens if the rating was not good?' Multiple answers are possible for this question.

A comprehensive indicator to evaluate the degree of autonomy was created as follows. Setting the price of services and choosing the tasks to be performed—the most important indicators of autonomy—were set as basic criteria. Selecting working hours and the existence of a performance evaluation system were placed in between, and the following spectrum was generated:

Has both the right to set the price of services and the right to choose the tasks to be performed	Has either the right to set the price of services or the right to choose the tasks to be performed		Has neither the right to set the price of services nor the right to choose the tasks to be performed
-	Can easily change working hours	Workings hours are decided by the platform / or cannot be changed easily	-
	There is no performance evaluation system	There is a performance evaluation system	
High ◄	─ Degree of Autonomy ─	► Low	
4	3	2	1	0

According to <Table 9>, offline platform workers tend to have a lower degree of autonomy than online platform workers. Looking at all platform workers, those with a very

low degree autonomy and those with a high degree of autonomy are distributed with similar proportions. This suggests a high level of heterogeneity within platform labor.

〈Table 9〉 Degree of Autonomy in Online/Offline Platform Labor

		Online		Offline		All Platform Workers	
Autonomy Rating	0	10	(8.0)	108	(26.2)	118	(22.0)
	1	12	(10.1)	91	(21.6)	102	(19.0)
	2	19	(15.4)	57	(13.7)	76	(14.1)
	3	28	(22.3)	71	(17.1)	98	(18.3)
	4	55	(44.3)	88	(21.4)	143	(26.6)
Average Rating(0~4)		2.85		1.86		2.09	
N		124		413		537	

IV. General Characteristics Including Income

When asked how many days in a month they did platform work, the respondents answered an average of 15 days. For those who did this work as a main job, their answer was 19.4 days, while those who performed platform labor as a side job said 10.3 days. On average, platform workers worked for 6.5 hours per day, but those who did this work as a main job worked 8.7 hours (see Table 10). Depending on whether the work was a main job or a side job, the respondents' income levels differed significantly. Those who did platform work as a main job earned an average of 2.39 million won per month, while those who did it as a side job earned 550,000 won (see Table 11). Taken together, a typical platform worker who performs his work as a main job works 8.7 hours a day and 19.4 days a month, and earns 2.38 million won. Meanwhile, a platform worker who performs his work as a side job works 4.3 hours a day and 10 days a month, and earns 550,000 won per month. Between online and offline platform workers, there seemed to be no big difference in terms of the number of working days and working hours. However, the number of working hours for offline platform workers

was slightly higher. Offline platform workers reported an average monthly income of 1.55 million won, slightly higher than online platform workers, and their share of total income was also larger, which is likely to be attributed to the fact that more offline platform workers tend to view their work as a main job.

<Figure 1> shows the distribution of working hours by platform type after converting the number of monthly working days and hours to weekly equivalents. Looking at platform workers as a whole, 46% of them work less than 15 hours. However, in the case of those who perform platform work as their main job, 30% of them work 52 hours or more, and 21.4% of them work 40~52 hours, so more than half of them work 40 hours or more. In the case of those who perform platform work as their side job, 74.5% of them work less than 15 hours.

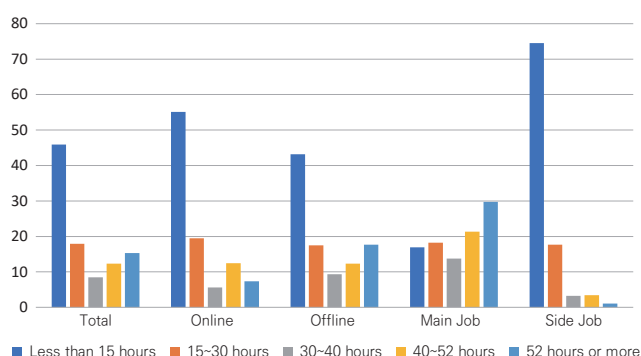The monthly income of platform workers is divided into

⟨Table 10⟩ Number of Working Days and Hours : Main Job/Side Job, Online/Offline

	Main Job	Side Job	Online	Offline	Total
( ) days a month	19.4	10.3	14.1	15.1	14.8
( ) hours a day	8.7	4.3	5.3	6.9	6.5

⟨Table 11⟩ Income: Main Job/Side Job, Online/Offline

	Main Job	Side Job	Online	Offline	Total
Average Monthly Income (ten thousand won)	238.4	54.8	116.1	154.9	145.9
Share in Total Income (%)	90.9	21.7	42.1	60.3	56.0

⟨Figure 1⟩ Distribution of Working Hours

Less than 15 hours   15~30 hours   30~40 hours   40~52 hours   52 hours or more

⟨Table 12⟩ Distribution of Income Quintiles : Main Job/Side Job, Online/Offline

	Average Amount (ten thousand won)	Share of Income Quintiles (%)			
		Online	Offline	Main Job	Side Job
1st quintile	9	43.7	12.7	1.9	37.7
2nd quintile	37	12.0	22.3	9.3	30.4
3rd quintile	99	16.1	21.2	17.4	22.5
4th quintile	192	13.9	21.9	32.7	7.6
5th quintile	390	14.3	21.9	38.7	1.8

five quintiles as shown in <Table 12>. The income gap is very large, as the data includes all platform workers who perform platform work as a main job or a side job. While the average income amount of the first quintile was only 90,000 won, that of the fifth quintile was 3.9 million won. Among online platform workers, those in the first quintile took up 43.7%, and other quintiles accounted for 12-16%. On the contrary, among offline platform workers, only a small number of workers were placed in the first quintile and the remaining workers were evenly distributed across the other quartiles. Looking at those who perform platform labor as their main job and side job, over 70% of those who perform it as their main job were placed in the 4th quartile or higher.

When asked about when they first started the platform work, about half of the respondents said they started it this year (2020). Such responses were more common among those who perform platform labor as a side job. In the case of those who do this as their main job, more than 40% of them said that they started before 2018 (see Table 13).

⟨Table 13⟩ When They First Started Platform Work : Main Job/Side Job, Online/Offline

(Unit : Persons, %)

	Main Job	Side Job	Online	Offline	Total
Prior to 2018	111(41.2)	21(7.7)	21(17.0)	111(26.7)	132 (24.3)
2018	34(12.5)	20(7.2)	10(8.3)	43(10.4)	53 (9.8)
2019	39(14.4)	53(19.6)	21(17.3)	71(17.0)	92 (17.0)
2020	86(31.9)	179(65.5)	73(57.4)	191(46.0)	262 (48.8)
N	269	273	126	416	542

V. Demographic Characteristics

This survey was conducted across 17 provinces and cities. Although not shown in the chart, 24.8% of platform workers are located in Seoul and 30.3% in Gyeonggi Province, so the sum of these two regions exceeds half of the total. Males make up two-thirds of all platform workers. It seems to reflect the reality that a very high percentage of platform workers are in the delivery sector. By age, those in the 30s and 40s account for more than 50% of the total, but those in the 20s and 50s are also evenly distributed. Women tend to be distributed in younger age groups than men (see Table 14). In terms of educational background, about half of all platform workers have graduated from college. Female platform workers had a higher level of education than male platform workers (see Table 15).

〈Table 14〉 Age

	Men		Women		Total	
10s	6	(1.6)	8	(4.4)	14	(2.6)
20s	62	(17.0)	53	(29.6)	115	(21.2)
30s	99	(27.3)	42	(23.3)	141	(26.0)
40s	111	(30.8)	38	(21.1)	149	(27.6)
50s	62	(17.1)	32	(17.6)	93	(17.3)
60s	22	(6.2)	7	(3.9)	29	(5.4)
N	362		180		554	

〈Table 15〉 Education

	Men		Women		Total	
High school diplomas or below	127	(35.5)	28	(15.8)	155	(28.9)
University: enrolled/leave of absence/dropout	39	(10.9)	21	(11.9)	60	(11.2)
Bachelor degrees	168	(46.9)	114	(63.7)	282	(52.5)
Master degrees	24	(6.7)	15	(8.6)	39	(7.3)
N	358		179		536	

VI. Summary and Conclusion

Platform labor is a new model of labor mobilization that has emerged with the development of digital technology. If we choose to define all who search for jobs and provide labor using the digital platform as platform workers, there are 1.79 million of them. However, this study deals only with the cases where the digital platform coordinates transactions and keeps a record of where one works or what kind of work he does. When we try to understand platform labor using the former definition, the focus is often placed on the precarity and vulnerability of platform labor. On the other hand, using the latter definition can draw our attention to an intermediate character of the digital platform between the market and companies. This allows us to perceive the changes in capitalist labor-management relations brought about by the advancement of digital technology. In addition, it helps us to discuss the roles and responsibilities that platform companies should bear under this relationship.

The percentage of platform workers meeting this definition is 0.92% of all employed persons aged 15-64, and that percentage is translated into 220,000 workers. The survey results indicate that there are still more cases where work is obtained via online platforms but services are provided offline. Also, various delivery businesses account for more than half of the total platform labor. However, regardless of having online or offline characteristics, the proportion of professional services has reached a level that cannot be ignored.

Because of a high level of heterogeneity within platform labor, the degree of autonomy enjoyed by platform workers also varies greatly. Thus, continuous attention is required for various indicators that shed light on the degree of autonomy in setting the price of services, choosing tasks to be performed, selecting working hours, as well as receiving performance appraisal.

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