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Tan Zhai Gen and Rachel Gong

Khazanah Research Institute

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Authors' email address: **zhai.gen@asb.edu.my**, **rachel.gong@krinstitute.org**

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Summary

- This paper examines the demographics of digital platform job-seekers in Malaysia and the factors that influence their job-seeking activity in the digital job market. Demographics refer to the age, gender and education level of these job-seekers and factors influencing job-seeking activity consist of digital access and digital competencies.

- Globally, the modal digital platform worker is a young man with a university degree. The eRezeki database shows that digital platform job-seekers in Malaysia are young but more likely to be women and to not have degrees. Nonetheless, women, young job-seekers (aged 30 and below) and non-degree holders are less active in this job market than men, older (aged above 30) job-seekers, and degree holders.

- Increasing digital competencies and digital access increases the rates of job-seeking activity for women, young job-seekers, and non-degree holders, more than increasing skills and access increases the rates of job-seeking activity for men, older job-seekers and degree holders. In other words, improving digital access and skills has a greater impact on those job-seekers who are less active in the job market.

- This paper discusses three areas for improving labour policy with respect to digital platform work. First, increasing fixed broadband and computer access for digital platform workers can increase job-seeking activity, especially among less active demographics. Second, incentivising training programmes for digital platform workers and decoupling training from employers can benefit independent workers and job-seekers. Third, extending portable social protection to digital platform workers can reduce the precarious nature of digital platform work, requiring collaboration between digital platforms, government agencies and unions.

Introduction

Movement restrictions and closure of public places and shops during COVID-19 pandemic have led to a boom in sales and services purchases through online platforms, such as food delivery and groceries delivery apps. These online platforms rely on informal short-term workers[1] to supply these services, which also provide incomes for workers who have lost their jobs due to the economic downturn. While some of these workers may choose to go back into formal employment as the economy recovers, a growing group of them is likely to remain in this new economy.

The rise of these temporary workers is enabled by improvements in digital platform technologies matching workers to tasks, thus increasing the variety and volume of tasks available due to greater access to the internet and remote work opportunities. These tasks can range from complex digital work (for example, designing a website) to repetitive digital micro-tasks (for example, labeling images) to tasks that are digitally-enabled but not done digitally (for example, food delivery). This has allowed workers to find tasks and incomes locally and globally.

This paper examines the demographics of digital platform job-seekers in Malaysia and the factors that influence their job-seeking activity in the digital job market. Demographics refer to the age, gender and education level of these job-seekers and factors influencing job-seeking activity consist of digital access and digital competencies. Besides increasing understanding of digital platform workers in emerging countries like Malaysia, this paper also identifies policy areas that can enable workers to enjoy the benefits of digital platforms while mitigating the risks from lack of social protection.

Technological progress and the future of work

The advancement of digital and communication technologies have led to the unbundling of the economy, no longer requiring talent and human capital crucial for the core business to be located close to the site of business and essentially allowing the decentralization of work to various places around the world[2]. Core services, such as product design and project management, can be performed and even outsourced through accessible high-speed internet connections and capable tele-conferencing software. This has been accelerated by the COVID-19 pandemic which severely limited face-to-face interactions and international travel.

Digital platform companies have used these technologies to create tools and platforms to enable communication and task organization between companies and workers, including organizing tasks to be performed by freelancers and contingent workers. The levels of centralization and agency that workers have depend on the nature of the task and the business process – workers

[1] Nur Thuraya Sazali and Tan 2019
[2] Baldwin 2019

in some platforms do not have much control over choosing the task that is algorithmically distributed to them, while workers in other platforms may have a lot more control over the task they pick to do.[3].

Despite the differences in how workers are organized, these platforms allow firms and employers to tap on talents from all around the world while saving on the cost of employment. Digital platform workers, who are frequently informal and non-standard workers, are able to earn income from anywhere in the world and work flexibly. In particular, high-skill workers in developing nations are able to use their skills to complete tasks offered globally and earn significantly higher income due to exchange rate differences, especially when the demand for their skills may be low locally[4].

Globally, workers in the digital platform economy have rapidly increased in the last decade. In 2015, the number of global microtask platform workers was estimated to be at 48 milllion, of which 10% were estimated to be active[5]. These workers have also been increasing at a rate of 14% per annum[6]. Traditional surveys found that as many as 11% of the total workforce earned income through digital platform work in the United Kingdom (UK), with at least 3% doing it at least weekly[7], while roughly 0.5% of the United States (US) labour force was employed by online labour platforms[8].

A global survey on digital microtask platform workers by the ILO between 2015 and 2017 also found that workers were mainly from urban areas, where four out of five workers are from urban or suburban communities[9]. These workers were also younger in developing countries compared to developed countries and there are more men than women. The workers were well-educated, with 37% holding degrees and 20% holding post-graduate degrees. In Asia, nearly 80% of workers had bachelor degrees or better. Looking at the 5 largest microtask platforms in 2015, it was found that software development and technology were the most sought-after skills, comprising a third of all vacancies[10] – possibly a reason for the large proportion of highly-skilled workers on these platforms.

Benefits and risks of digital platform work

One of the main attractions of digital platform work is the flexibilty to choose which tasks to complete and when to complete them, benefiting full time digital platform workers, part-time digital platform workers who already have full-time jobs and those who have important care-

[3] Sutherland and Jarrahi 2018; Ticona, Mateescu, and Rosenblat 2018
[4] Berg et al. 2018; Gurumurthy et al. 2019
[5] Kuek et al. 2015
[6] Kässi and Lehdonvirta 2018
[7] Huws and Joyce 2016
[8] Katz and Krueger 2016
[9] Berg et al. 2018
[10] Kässi and Lehdonvirta 2018

work to perform[11]. For workers in developing countries, this is an opportunity to use their skills and talents globally, especially when the demand for their skills is low or non-existent locally[12]. Income from developed countries is also typically higher compared to local income due to exchange rate differences. Digital platforms also allow the rise of the "passion economy", which enables entreprenuership among those who exploit the digital platform technology to only work on tasks that they are interested in[13].

From a policy standpoint, digital platform work can reduce "brain drain" by allowing highly skilled workers in developing countries to work remotely for higher wages than they would otherwise earn locally, with some scholars considering this a "silver bullet" for development. There are also job opportunities that do not require high skills, allowing non-specialist workers to participate in platform work in developing countries[14]. Thus, some governments place high value on digital platform work as a source of employment[15].

However, workers venturing into digital platform work are also exposed to new vulnerabilities. The nature of this work is informal and the workers are part of informal employment – the work is temporary and workers are seen as contract workers and not permanent employees of the digital platform or the firm that pays them for the completion of tasks[16]. This means workers lack the various employer-linked protections that safeguard the current and future wellbeing of the workers, such as health insurance, as these protections are typically only provided for formal employees.

Some digital platforms do not provide basic workplace safety protections, exposing workers to physical and emotional harm, especially in countries where basic occupational protection regulations and implementation are weak, or exclude contract or temporary workers. For example, microtask digital platform workers hired to evaluate social media posts for violent content were exposed to horrific photos and videos without emotional support. Workers on care-work platforms may also lack occupational support, especially when meeting potentially abusive clients or clients in dangerous areas[17].

The algorithmic control of workers on some digital microtask platforms has also led to the "dehumanisation" of workers, leading to workers being compelled to be constantly be on-call by their clients to remain "competitive" on these platforms[18]. Because these workers are not hired directly by the digital platforms, they do not receive benefits such as health insurance and

[11] Berg et al. 2018
[12] Kessler 2018; Berg et al. 2018
[13] Davidson 2020
[14] Schriner and Oerther 2014
[15] Lehdonvirta et al. 2018
[16] Bloodworth 2019; Kessler 2018; Berg et al. 2018; Ticona, Mateescu, and Rosenblat 2018; Graham, Hjorth, and Lehdonvirta 2017; Nur Thuraya Sazali and Tan 2019
[17] Ticona, Mateescu, and Rosenblat 2018
[18] Kessler 2018

retirement funds. Not having these benefits increases their vulnerability when economic shocks happen[19].

Many workers also found that work on these digital microtask platforms provided few opportunities for skills training and upgrading, as the nature of work on the platforms did not challenge workers to upskill and did not incentivise upskilling[20]. In fact, there is potential for these workers to experience de-skilling, especially when the digital microtask work is repetitive and does not require the higher level skills the workers may already possess. However, there were some workers in developing countries who improved their English language skills through digital platform work[21].

Data and Methods

The eRezeki platform

To study the demography of digital platform workers in Malaysia and the factors that influence job-seeking amongst digital platform workers, we analysed data from eRezeki. eRezeki[22] is a task aggregating digital platform hosted by the Malaysia Digital Economy Corporation (MDEC), a key government agency in charge of supporting the digital economy development in Malaysia. eRezeki was set up in the 2015, aimed at increasing job and income opportunities for Malaysians in the platform economy[23]. Table 1 shows some of the indicators on the participants and partner digital platforms of eRezeki. The platform targets blue collar workers, individuals from B40 households (households in the bottom 40% of the country's income distribution), unemployed individuals, pensioners, veterans and individuals with disabilities. MDEC actively recruited users to the eRezeki platform in rural areas, leveraging on existing telecentre facilities, and through polytechnics and universities in the different parts of the country.

Table 1: Summary of eRezeki performance as of 31 December 2018

Indicators	2016	2017	2018	Cumulative (2016- 2018)
Number of B40 community members registered	105,808	154,872	107,314	367,994
Income received by B40 community (RM mil)	17.70	95.6	217.02	330.32
Total number of local partners	17	68	86	86
Total number of global partners	5	6	24	24

Source: Frost & Sullivan 2020

[19] Hawk n.d.
[20] Berg et al. 2018
[21] Kuek et al. 2015; Berg et al. 2018
[22] "eRezeki | Now Everyone Can Benefit from the Digital Economy." n.d.
[23] Frost & Sullivan 2020

The eRezeki platform filters tasks from partner digital platforms to registered eRezeki job-seekers based on their stated interests and capabilities. Job-seekers can view a variety of tasks sourced from partner digital platforms, and are directed to the partner digital platform site after clicking on the task they are interested in.

Tasks are split into three groups – digital microtasks, digital work and digitally-enabled work platforms. **Digital microtasks** are work done digitally and are more repetitive in nature, such as data entry or image labeling. **Digital work** is complex work done on a computer, such as coding, app development or graphic design. **Digitally-enabled work** is work not necessarily done on a computer, but enabled through digital means, such as app-based delivery services, ride-hailing or plumbing services. Digital microtasks and digital work come from both global and local sources while digitally-enabled work is done and paid locally.

The level of digital skills, competencies and qualifications required for each group of tasks can differ greatly. Digital microtasks such as image labeling require no special skills. Digital work such as app development require highly technical and specalised skills. Skills requirements can even vary within each group of tasks. While some digitally-enabled work such as that offered via ride-hailing platforms require only a driving license, other digitally-enabled work such as electrical work and care work requires workers to have official certificates, such as Sijil Kemahiran Malaysia – Level 3. Some platforms also require workers to complete mandatory training sessions with qualified trainers before being listed on the platforms - such as workers to help with car battery maintanence.

The eRezeki user database analysed in this paper contains data on job-seekers who registered in the system in 2017 and 2018. It includes their demographic details, namely gender, age, and education level. The database also contains self-reported language skills, digital access (such as broadband access and computers), basic digital competencies and the tasks that job-seekers are interested in doing. The system records the date of account creation, date of last login and, most importantly, the number of jobs viewed and clicked on up until December 31, 2019. However, it does not categorise job seekers by groups of tasks, thus we were not able to distinguish these in our analysis.

Caveats and limitations

Another important caveat is that the system only detects clicks made in the eRezeki platform, and does not include data on whether the job was actually assigned and completed on the partner platform site. Nor does the database contain information on what type of job was viewed or clicked on; only the number of jobs per user. Job-seekers could click at the job link on the eRezeki site and land on the partner platform site, but not actually take the task at the partner platform site.

The eRezeki platform is not representative of the Malaysian labour force or even the Malaysian digital platform job market. However, to the best of our knowledge, it is the only comprehensive database of digital platform job-seekers that provides information on job-seekers' demographics, skills and job-seeking activity. Digital platform workers can be difficult to survey due to the nature of their mobile and ad-hoc work, so the eRezeki database is a valuable consolidated data set of digital job-seekers across the country.

Thus, despite its limitations, analysis of the eRezeki user database gives an important glimpse into the demographics of digital platform job-seekers in Malaysia. The eRezeki user database contains data on job-seekers over a wide range of digital platforms as it includes job-seekers interested in different types of digital tasks both locally and globally. We do not expect the behaviour of eRezeki job-seekers to be signfiicantly different from the general labour force or the digital labour force.

Data and hypotheses

We seek to understand the factors influencing job-seekers' job-seeking activity in the digital job market. In the absence of a variable that measures job success, we use a proxy to measure how actively a person is looking for a job in the eRezeki platform. Our assumption is that, given the variety of digital work available, more active job-seekers are likely to be more successful at finding jobs than less active job-seekers, all other things being equal.

The eRezeki system offers us a way to measure job-seeking activity – it tracks the number of jobs a user views and clicks on. We take as our outcome variable the average number of clicks per month in the database. The average number of clicks is used instead of the absolute number of clicks to enable comparison across job-seekers regardless of when they joined the platform.

For this analysis, we used a cleaned subset of eRezeki data that includes only users with complete profiles. User demographics in this cleaned dataset are proportionally similar to the full, pre-cleaned dataset, e.g. women make up 54.2% of the clean dataset and 53.8% in the full dataset.

Table 2 shows the different characteristics of job-seekers analysed in this paper. We see how demographic differences are reflected in the average number of clicks per month. Additionally, digital access and digital competencies also influence how active job-seekers are on eRezeki.

Digital access refers to the availability of devices (smartphone and computer) and data (mobile or fixed broadband). Digital competencies refers to basic abilities in using programs and digital tools. The digital competencies recorded in the eRezeki system include experience in using emails regularly, ability to upload and create videos on YouTube, experience in using and creating Facebook pages and accounts, experience in using digital payment systems like Paypal and experience in using multiple browsers.

It follows that better access to computers and broadband internet gives job-seekers better job opportunities while better digital competencies allow for better communication and transactions. Given that the literature suggests that digital platform workers are more likely to be young men with degrees[24], we use the eRezeki data to test two hypotheses about digital platform job-seekers.

Hypothesis 1: Men, young job-seekers, and degrees holders are more active on eRezeki than women, older job-seekers, and non-degree holders.

Hypothesis 2: Higher levels of digital access and digital competencies are associated with higher activity on eRezeki.

Table 2: Summary statistics of characteristics of job-seekers on eRezeki

Characteristics of job-seekers	Percentage	Average number of clicks per month
Gender		
Women	54.2	0.0413
Men	45.9	0.0485
Age		
Youth (aged 30 and below)	55.7	0.0437
Non-youth (aged above 30)	44.2	0.0458
Education		
Non-degree holder	69.6	0.0413
Degree holder	30.4	0.0522
Digital access		
Has mobile data	99.3	0.0447
Has a smartphone	98.4	0.0447
Has computer access	51.4	0.0476
Has fixed broadband	44.1	0.0517
Digital competencies		
Email	84.9	0.0521
Browser	69.3	0.0541
YouTube	53.8	0.0554
Facebook	48.5	0.0541
Digital payments e.g. Paypal	18.2	0.0614

Source: Authors' calculations based on MDEC data (N = 96,051)[25]

The modal eRezeki user, contrary to observed global trends, is young (i.e. aged 30 and below) but more likely to be a woman and a non-degree holder. This is expected given that eRezeki is targeted at underserved populations of the regular job market. However, when it comes to job-seeking activity, we see that on average non-youths are more active than youths, men are more active than women, and degree holders are more active than non-degree holders, which reflects typical labour market dynamics in Malaysia[26].

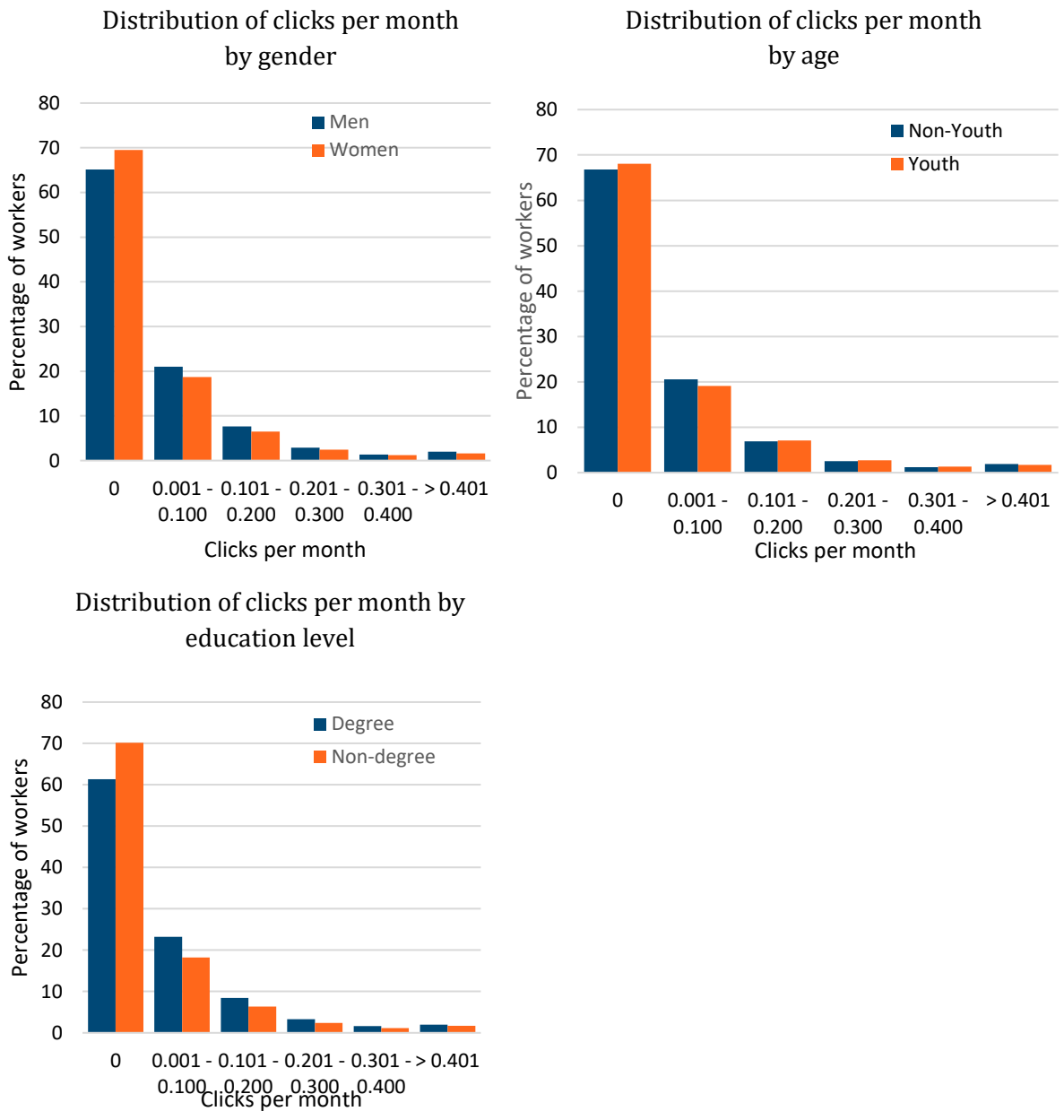
[24] Berg et al. 2018

[25] A previous version of this paper mistyped the sample size as 34,465 instead of 96,051.

[26] Khazanah Research Institute 2019; 2018

The distribution of the average number of clicks per month for these platforms is typical of many digital platforms, where a majority of job-seekers are dormant and do not have any activity after registration. This may not actually reflect low activity as some job-seekers may prefer not to use eRezeki to access the partner platforms and instead interact directly with the partner platforms. The distribution of average number of clicks show in Figure 1 reinforces the findings from Table 2, namely that higher percentages of youths, women and non-degree holding job-seekers are less active compared to non-youths, men and degree-holding job-seekers respectively.

Figure 1: Distribution of average number of clicks per month, by demographics



Source: Authors' calculations based on MDEC data

Findings

Digital platform job-seekers in Malaysia are women, young and highly educated

We begin by comparing the demographics of digital job-seekers using the eRezeki platform to the demographics of digital platform workers globally. Compared to global microtask platform workers where only 20% of workers from developing countries are women while slightly less than 50% of workers in advanced countries are women[27], 54% of job-seekers on eRezeki are women. The share of Malaysian job-seekers on eRezeki also differs from the Malaysian labour force, where around 39% of the total labour force are women and 61% of the total labour force are men[28].

The age distribution of eRezeki job-seekers is skewed towards younger workers, the median age of job-seekers being 29 while the mean age of job-seekers is 30 years old.

In terms of education, 69.6% of eRezeki job-seekers do not have university degrees, while 30.4% of job-seekers have university degrees or better. In 2019, around 12.7% of the national labour force had degrees or better[29]. This indicates that job-seekers on eRezeki have a higher education level in general compared to the Malaysian workforce. Globally, 37% of workers have degrees and 20% have post-graduate degrees. These proportions are higher for Asia, where 80% of workers have degrees and better, much higher than the eRezeki workforce[30].

These discrepancies are to be expected, given eRezeki's original aim of providing sources of supplementary income rather than full-time jobs. Initially, jobs on the platform were primarily digital microtasks but the evolution of work in the platform economy led to an increase in digitally-enabled tasks and digital work which might change the demographics of the digital labour force. For example, women who need to prioritise care work may prefer to do digital microtasks which do not take much time, while degree holders may prefer to do digital work that is more time-consuming.

As discussed earlier, our data do not allow us to separate these three types of digital platform work, but future research could investigate these to determine the growth trajectories of these different types of work as well as the demographics of job-seekers interested in each.

Degree holders are the most active digital platform job-seekers

Using average number of clicks per month as a comparable measure across demographic groups, we see that degree holders have the highest average number of clicks per month at 0.0522 clicks,

[27] Berg et al. 2018
[28] Department of Statistics Malaysia 2020a
[29] Department of Statistics Malaysia 2020a
[30] Berg et al. 2018

while non-degree holders have the lowest number of clicks per month at 0.0413 clicks. In other words, degree holders on average are 1.3 times more active on eRezeki than non-degree holders (Table 3).

Studies using global surveys have found that most workers on global digital platforms have university degrees[31]. This is due possibly to the high-skilled nature of work on these platforms, such as coding, that require skills associated with degrees. Degree holders in developing countries use digital platforms to access tasks which match their skills but may not be available in their own country. Thus, degree-holding job-seekers in Malaysia may have more opportunities than non-degree-holding job-seekers to tap into the global market for digital tasks.

Table 3: Average clicks per month, by demographics

Demographics	Average clicks per month	Relative ratio
Gender		
Women	0.0413	1.0
Men	0.0485	1.2
Age		
Youth	0.0437	1.0
Non-youth	0.0458	1.0
Education Level		
Non-degree	0.0413	1.0
Degree	0.0522	1.3

Source: Authors' calculations based on MDEC data

However, while women in Malaysia are more likely to have degrees than men[32], women still have a lower average number of clicks per month compared to men, suggesting that gender may affect job-seeking activity more than education. In fact, women job-seekers with degrees have average clicks per month higher than men without degrees but still lower than men with degrees.

Table 3a: Average number of clicks per month, by demographics

Characteristics of job-seekers	Gender	
	Men	Women
Education		
Degree holder	0.0538	0.0511
Non-degree holder	0.0465	0.0364

[31] Berg et al. 2018

[32] Department of Statistics Malaysia 2020a

Fixed broadband and computer access are crucial for job-seeking

Digital access also affects job-seeking activity rates on eRezeki. In particular, job-seekers with fixed broadband access have the highest average number of clicks per month, while job-seekers without computers have the lowest average number of clicks (Table 4). The biggest difference in the average number of clicks is between those with computer access and those without – job-seekers with computer access are 1.5 times more active than those without computer access.

Table 4: Average clicks per month, by digital access availability

Digital access	Average clicks per month	Relative ratio
Has computer access		
No	0.0318	1.0
Yes	0.0476	1.5
Has fixed broadband		
No	0.0390	1.0
Yes	0.0517	1.3
Has mobile data		
No	0.0383	1.0
Yes	0.0447	1.2
Has smartphone		
No	0.0358	1.0
Yes	0.0447	1.2

Source: Authors' calculations based on MDEC data

The large differences resulting from the availability of fixed broadband and computers highlight the importance of digital access in tapping into higher value digital work, especially international digital work which requires a stable internet connection and a computer instead of more unstable mobile data and a smartphone. Computers enable workers to perform more complex tasks, while a stable broadband connection enables seamless communication and allows workers to perform tasks that require continuous internet access.

Email and digital payment skills indicate high job-seeking activity

In terms of digital competencies, job-seekers with experience in using email and digital payments are more active on eRezeki. Job-seekers with experience in digital payment systems like Paypal have the highest average number of clicks per month, while job-seekers who are not familiar with email have the lowest average number of clicks. Job-seekers with experience using email have the greatest advantage, where job-seekers who are familiar with email are 1.8 times more active than those who are not (Table 5).

Email is fundamental for digital communication. However, 15.1% of eRezeki job-seekers are not familiar with email. On the other hand, only 18.2% are familiar with digital payment systems. Thus, a majority of job-seekers are likely to face difficulties using secure systems to obtain payments, especially from international clients.

Table 5: Average clicks per month, by digital competencies

Digital competencies	Average clicks per month	Relative ratio
Experienced using email		
No	0.0366	1.0
Yes	0.0521	1.8
Experienced in using browser		
No	0.0406	1.0
Yes	0.0541	1.5
Experienced in digital payments		
No	0.0473	1.0
Yes	0.0614	1.4
Experienced in YouTube		
No	0.0433	1.0
Yes	0.0554	1.4
Experienced in Facebook		
No	0.0459	1.0
Yes	0.0541	1.2

Source: Authors' calculations based on MDEC data

Young job-seekers, women, and non-degree holders benefit most from digital access and digital competencies

Thus far, we have examined how different aspects of digital access and digital competencies are associated with increased levels of job-seeking activity on eRezeki by job-seekers as a whole. Specifically we have seen the value of having fixed broadband and access to a computer, and of skills with email and digital payment systems. The following figures show how these aspects of access and skills affect different demographic groups, suggesting that young job-seekers, women and non-degree holders see greater increases in job-seeking activities corresponding to increases in digital access and digital competencies compared to non-youth job-seekers, men, and degree holders.

Table 6 shows how fixed broadband access affects job-seeking activity levels for different demographic groups. Among young job-seekers, having fixed broadband is associated with 1.4 times more activity than when not having fixed broadband. Among non-youth job-seekers, the corresponding ratio is only 1.3 times. Similarly, women with fixed broadband were 1.4 times more active than women without fixed broadband, while men with fixed broadband were only 1.3 times more active than men without. Finally, non-degree holders with fixed broadband were 1.4 times more active than without compared to degree holders with broadband who were only 1.1 times more active than if they did not have fixed broadband.

Despite the larger relative increase for women and non-degree holders, men and degree holders with fixed broadband access were still more active than women and non-degree holders with fixed broadband access.

Table 6: Average number of clicks per month, availability of fixed broadband access

Demographics	Average clicks per month		Relative increase due to availability of broadband
	No broadband available	Broadband available	
Age			
Youth	0.0379	0.0518	1.4
Non-youth	0.0406	0.0515	1.3
Gender			
Women	0.0360	0.0488	1.4
Men	0.0430	0.0547	1.3
Education Level			
Non-degree	0.0361	0.0502	1.4
Degree	0.0498	0.0537	1.1

Source: Authors' calculations based on MDEC data

Table 7 shows how having access to a computer affects job-seeking activity levels for different demographic groups. Among young job-seekers, having computer access is associated with 1.6 times more activity than when not having access to a computer. Among non-youth job-seekers, the corresponding ratio is only 1.5 times more. Similarly, women with computer access were 1.6 times more active than women without computer access, while men with computer access were only 1.4 times more active than men without. Finally, non-degree holders with computer access were 1.5 times more active than without compared to degree holders with computer access who were only 1.2 times more active than if they did not have computer access.

Despite the larger relative increase for women and non-degree holders, men and degree holders with computer access were more active than women and non-degree holders with computer access.

Table 7: Average number of clicks per month, availability of computer

Demographics	Average clicks per month		Relative increase due to availability of computer
	No computer available	Computer available	
Age			
Youth	0.0296	0.0466	1.6
Non-youth	0.0336	0.0490	1.5
Gender			
Women	0.0273	0.0446	1.6
Men	0.0367	0.0512	1.4
Education Level			
Non-degree	0.0305	0.0449	1.5
Degree	0.0455	0.0525	1.2

Source: Authors' calculations based on MDEC data

Table 8 shows how digital payment systems skills affects job-seeking activity levels for different demographic groups. Among young job-seekers, having digital payment systems skills is associated with 1.4 times more activity than when not having digital payment systems skills. Among non-youth job-seekers, the corresponding ratio is only 1.3 times more. Similarly, women with digital payment systems skills were 1.4 times more active than women without digital payment systems skills, while men with digital payment systems skills were only 1.3 times more active than men without. Finally, non-degree holders with digital payment systems skills were 1.5 times more active than without compared to degree holders with digital payment systems skills who were only 1.1 times more active than if they did not have digital payment systems skills.

Despite the larger relative increase for women and non-degree holders, men and degree holders with digital payment system skills were still more active in absolute terms than women and non-degree holders with digital payment system skills.

Table 8: Average number of clicks per month, availability of digital payment skills

Demographics	Average clicks per month		Relative increase due to experience in digital payments
	No experience in digital payments	Experience in digital payments	
Age			
Youth	0.0408	0.0583	1.4
Non-youth	0.0434	0.0549	1.3
Gender			
Women	0.0387	0.0545	1.4
Men	0.0459	0.0586	1.3
Education Level			
Non-degree	0.0385	0.0586	1.5
Degree	0.0514	0.0543	1.1

Source: Authors' calculations based on MDEC data

Table 9 shows how email experience affects job-seeking activity levels for different demographic groups. Among youth job-seekers, having email experience is associated with 1.7 times more activity than when not having email experience. Among non-youth job-seekers, the corresponding ratio is 1.9 times. Women with email experience were 2.2 times more active than women without email experience, while men with email experience were only 1.5 times more active than men without. Finally, non-degree holders with email experience were 1.8 times more active than without compared to degree holders with email experience who were only 1.3 times more active than if they did not have email experience.

Despite the larger relative increase for women and non-degree holders, men and degree holders with email experience were still more active in absolute terms than women and non-degree holders with email experience.

Table 9: Average number of clicks per month, experienced in email

Demographics	Average clicks per month		Relative increase due to experience in using emails
	No experience in email	Experience in using emails	
Age			
Youth	0.0268	0.0466	1.7
Non-youth	0.0259	0.0493	1.9
Gender			
Women	0.0204	0.0452	2.2
Men	0.0344	0.0508	1.5
Education Level			
Non-degree	0.0254	0.0453	1.8
Degree	0.0401	0.0526	1.3

Source: Authors' calculations based on MDEC data

We interpret these findings to mean that not only is having increased digital access and digital competencies associated with increased digital job-seeking activity, and thus greater chances of finding a digital job, but also that the increase in activity is generally larger for young job-seekers, women, and non-degree holders. Job-seekers in these demographics may benefit more from increased digital access and improving their digital competencies.

An alternative explanation suggests that these benefits might be limited to informal, digital platform work and not apply to other areas in the digital economy or reflect the labour market as a whole. Our data do not allow us to test these explanations further, but further research is warranted to assess the value of digital access and digital competencies in the platform economy and the labour market.

Policy discussion

Digital access and digital competencies can improve job-seeking activities in the digital platform economy, especially for the more disenfranchised groups of workers in the Malaysia labour force, including young workers, women and non-degree holders. Women have a lower labour force participation rate, while non-degree holders have lower average wages than degree workers. Youth unemployment is also higher than the non-youth unemployment[33]. The digital platform economy can potentially provide job opportunities and higher wages for these workers, and be an important tool to reduce inequalities between these groups of workers and their respective counterparts in the labour force.

Existing programmes are aimed at encouraging women to rejoin the labour force (e.g. Career Comeback Programme[34]) and to help fresh graduates find jobs (e.g. Graduates@Work) as well as provide general skills training (e.g. Let's Learn Digital[35]). Additional policy improvements can be made to ensure that job opportunities within the platform economy can reduce, not increase, inequalities. We propose three such improvements below.

Policy improvement 1: Increasing digital access

Our findings indicate that digital access, specifically access to fixed broadband and computers, increases job-seeking activity in the platform economy. Digital infrastructure and devices are fundamental to ensuring reliable, high quality connectivity that enables the platform economy to run, from the perspectives of both the platforms and the workers. Ensuring basic internet access via a smartphone is good; providing means to access higher quality, more reliable fixed broadband on computers is better.

Increased provision of affordable fixed broadband and computers could be crucial to growing the platform economy, especially for digital work that depends on a stable internet connection and a device with higher processing power. In 2019, only 51.4% of Malaysian households had laptops[36], while only 8.6% individuals had fixed broadband access[37]. Our analysis indicates that a lower share of non-degree holders have access to fixed broadband and computers compared to degree holders. This is possibly a consequence of having lower wages and being unable to afford computers and broadband, and likely leads to lower participation in the platform job market, which could perpetuate the problem.

The government has recognised the importance of high quality broadband connectivity and has introduced the National Digital Network Plan (JENDELA) aimed at improving mobile broadband service. This is important, as is improving fixed broadband infrastructure and service. Increasing

[33] Department of Statistics Malaysia 2020a; 2020b
[34] "Career Comeback Programme - Initiatives | TalentCorp Malaysia" n.d.
[35] "Let's Learn Digital" 2020
[36] Department of Statistics Malaysia 2020c
[37] Gong 2020; International Telecommunication Union 2019

fixed broadband access and take-up across the country is key to increasing participation in digital work in the platform economy, especially for non-urban workers and non-degree holders.

Another policy approach previously advocated is to consider subsidising not just fixed broadband subscriptions but also subsidising devices, including computers[38]. Research has found that increasing access to internet-enabled devices such as computers are more effective than reducing mobile data prices in increasing broadband access – thus subsidising both broadband and computer devices can both encourage job-seeking activity[39].

Policy improvement 2: Making digital skills training accessible

Digitally enabled work, such as food delivery and household services, that is managed via platforms is rapidly growing. The global platform economy is projected to increase by 17% on average each year between 2019 to 2023 to a gross size of $455 billion[40]. In Malaysia, the sharing economy was estimated to have grown from RM394 million in 2016 to RM949 million in 2018, a increase of 2.4 times over three years[41]. Also increasing is the demand for digital work, such as programming, design, and creative content development. Our findings indicate that increased digital competencies are associated with increased job-seeking activity in these job markets.

Therefore, incentivising and enabling training for workers in this area is important for young workers, women and degree holders who stand to gain more from developing their digital competencies, as shown in our analysis.

Furthermore, training is a crucial safeguard for the future of the labour market in general when technological change will radically change the nature of jobs and needed skills in the future[42]. Without continual skills development and training, workers, especially those performing routine or semi-skilled tasks, can quickly become obsolete.

However, digital platform workers who are not classified as employees may not have access to training opportunities as they are excluded from the core business of the platforms and their clients[43]. This reduces their ability to learn new digital competencies, resulting in jobs being quickly taken up by the few who do have the necessary skills, and leaving them unable to catch up because they do not having the funding or guidance to upskill themselves.

Budget 2020 introduced Digital Social Responsibility (DSR), a commitment by the business sector to enhance the future workforce capacity with digital skills training and funding for communities

[38] Gong 2020
[39] Schriner and Oerther 2014
[40] Mastercard and Kaiser Associates 2019
[41] Malaysia Digital Economy Corporation 2019
[42] Khazanah Research Institute 2017; Frey and Osborne 2017; Kochan and Dyer 2019
[43] Graham, Hjorth, and Lehdonvirta 2017

in need, with private sector contributions to DSR activities being tax exempted[44]. This policy could be further expanded given how it could help workers, especially under difficult circumstances caused by the pandemic, to take advantage of digital platform work opportunities.

A gap in Malaysia has been the lack of digital skills training opportunities for digital platform workers. Training has typically been organised by employers as part of improving business productivity[45]. Thus, it is unavailable for digital platform workers who are considered freelancers and contract workers by digital platforms and also by the clients of digital platforms. Government funds to incentivise skills training, such as Human Resource Development Fund (HRDF), are available only to employers, leaving out self-employed workers and digital platform workers.

Programmes such as MDEC's Digital Skills Training Directory[46] in collaboration with the Social Security Organisation (SOCSO) under the PENJANA Hiring Initiative provide digital skills training to job candidates, but only if they are selected by SOCSO-registered employers.

Decoupling training provision from the notion that it is the responsibility and prerogative of only employers is an important step to creating a more inclusive skills training system for the whole labour force. A general training provision programme that directly assists workers in the changing labour market is needed – established in collaboration with formal employers, digital platforms, community colleges, unions and public training programmes[47]. In particular, subsidising more training partnerships like MDEC's Let's Learn Digital between employers or government agencies and education providers such as local community colleges could make training more affordable for a wider segment of the workforce, including non-degree holders.

For digital platform workers, stakeholders in the platform economy (e.g. digital platform companies, employers who use these digital platforms and skills training institutions) should work together to improve the digital competencies of workers to improve productivity. Training should be inclusive and not focus on degree holders to the detriment of non-degree holders. As illustrated in our analysis, training on basic network and computing skills like using digital payment systems can potentially contribute to greater participation in the job market.

Financial incentives and vouchers are an important policy mechanism in putting training into the hands of the workers themselves instead of their employers[48]. For example, the Singaporean government provides SGD200 each year to workers to join training courses which are accredited by the government in a scheme called SkillsFuture. The scheme also provides guidance on the skills and trainings tailored to the worker's specific training needs.

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[44] Ministry of Finance Malaysia 2019
[45] Khazanah Research Institute 2017
[46] Digital News Asia 2020
[47] Autor, Mindell, and Reynolds 2020
[48] Khazanah Research Institute 2017

Policy improvement 3: Strengthening portable social protection

The vulnerability of digital platform workers to shocks also has to be addressed, given the informal status of their work, as social protection in Malaysia, as in many other countries, is built around standard employment relationships[49]. Social protection ranges from occupational hazard protection to health insurance and retirement funds, which traditionally have been provided by employers.

In the absence of clear terms of employee classifications and rights, allowing platform workers to advocate for their own needs and social protection would require the cooperation of government, employers, platforms and unions, whose interests may not always align[50]. Nonethless, labour unions in Germany and USA, for example, have opened up their doors to freelancers and informal workers to provide a way to organise and bargain for health insurance through these unions. Grab, a ride-hailing platform, has worked with the Singaporean government by contributing to drivers' Medisave, the Singaporean national health insurance, commensurate with distance driven. Malaysia's Self-Employment Social Security Scheme provided by SOCSO is a step forward to protect the self-employed, beyond the traditional direction of the agency to provide employment security via employer contributions.

Given the rise of digital platform work, informalisation of work in general and workers switching jobs more frequently throughout their lives, an improvement to social protection policy would see social protection tied to the worker instead of tied to an employer[51]. These "portable benefits" would balance the flexibility of modern jobs with the security of traditional employment. For example, Malaysia's Employee Provident Fund (EPF) is tied to workers themselves, and has introduced new schemes that allow for self-contribution from self-employed workers.

However, the precarious nature of platform work can disincentivise workers from voluntarily contributing to such social protection programmes. Programmes that supplement or match worker contributions to a pension fund could help to incentivise voluntary contributions[52]. Greater cooperation from all stakeholders will be important to educate workers regarding the importance of social protection as insurance against shocks. Government assistance and appropriate contributions from digital platforms will be needed to fund such programmes, at least initially. At the very least, a form of occupational hazard insurance is necessary to ensure continuity of income for platform workers who might sustain injuries while on the job.

[49] Nur Thuraya Sazali and Tan 2019; Kochan and Dyer 2019
[50] Kochan and Dyer 2019
[51] Khazanah Research Institute 2017; Kochan and Dyer 2019
[52] Hinz et al. 2013

Conclusion

As advancement in digital technology continues, digital platforms will be an increasingly viable mechanism for firms to obtain temporary workers – both formal and informal - all around the world, while workers are able to earn incomes from outside their local area. This provides exposure for workers, while expanding opportunites for flexible part-time jobs and additional incomes. For some developing countries, workers with skills that do not have much demand in the local economy may be able to remain in their local area while working digitally, reducing the "brain drain" issue for these countries.

However, there are important issues which need to be addressed – the contractual nature of digital platform work indicates that there is a lack of social protection and limited skills-upgrading opportunities for workers. The lack of workplace protection due to remote working conditions also increases workers' vulnerabilities.

What factors affect job-seeking for digital platform work? Degree holders are more active on eRezeki compared to non-degree holders. Digital access in terms of fixed broadband and computer access increases job-seeking activity. In terms of digital competencies, experience in using email and digital payment systems is important in increasing job-seeking activity. The increased activity associated with digital access and competencies is greater for disenfranchised workers in the workforce, namely, women, youth and non-degree holders.

This paper discusses three areas for improving labour policy with respect to digital platform work. First, increasing fixed broadband and computer access for digital platform workers can increase job-seeking activity, especially among less active demographics. Second, incentivising training programmes for digital platform workers and decoupling training from employers can benefit independent workers and job-seekers. Third, extending portable social protection to digital platform workers can reduce the precarious nature of digital platform work, requiring collaboration between digital platforms, government agencies and unions.

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