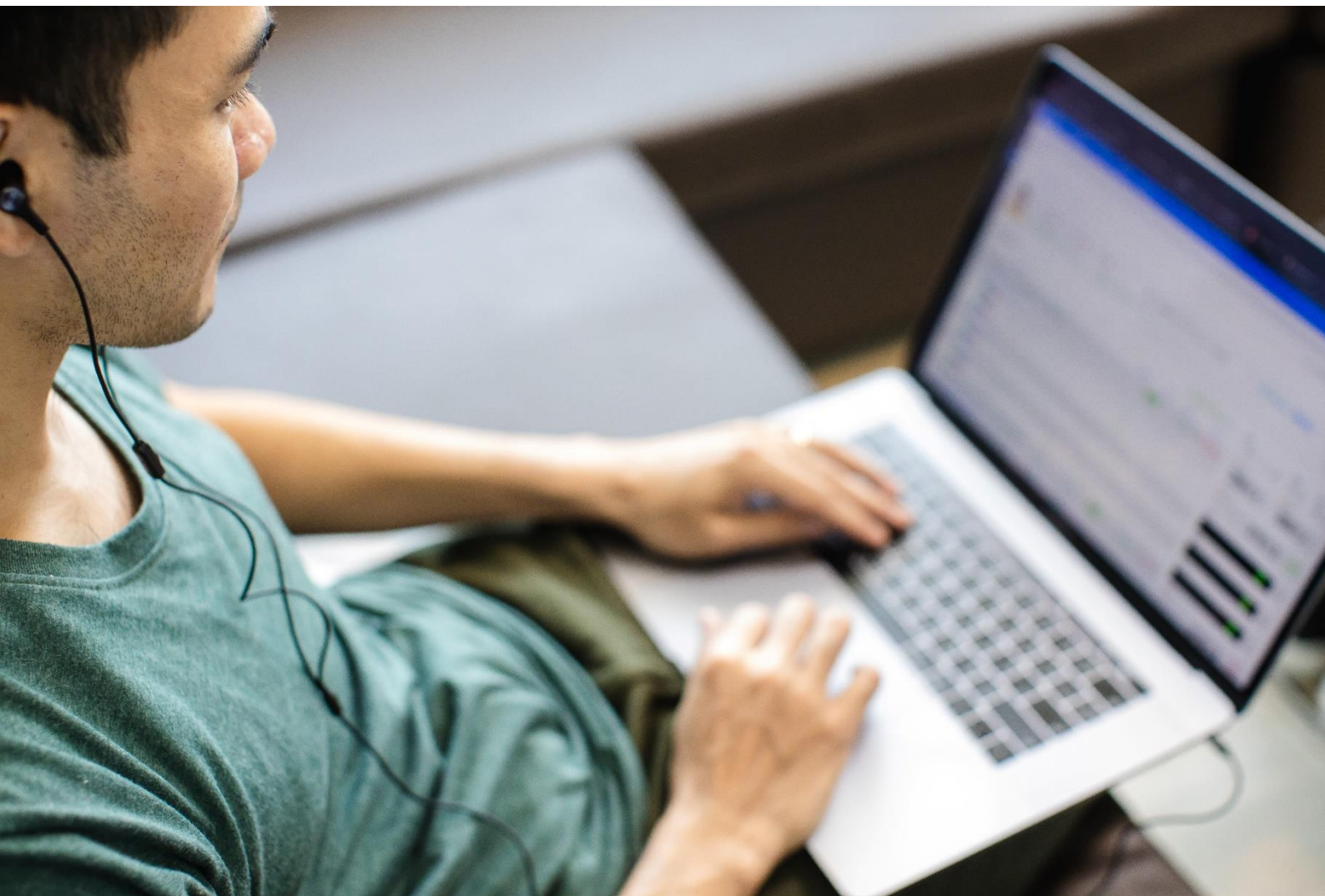


DISCUSSION PAPER 4/2020 | 13 APRIL 2020

How common is working from home?

Siti Aiysyah Tumin



Khazanah Research Institute

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How common is working from home?

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Summary

- Due to Covid-19, social and physical distancing is likely the 'new normal' for the foreseeable future. Certain work arrangements, such as working from home (WFH), might persist too. Using estimates from the Department of Statistics (DOS) and Dingel and Neiman (2020), this paper attempts to identify the prevalence and viability of WFH for workers in Malaysia.
- WFH is uncommon among Malaysia's most vulnerable workers, the self-employed. Recent findings indicate that only one in four self-employed workers worked from home, while close to half of them lost their jobs during the Covid-19 crisis. Coupled with the lack of social protection and measures to assist them during this crisis, the vulnerabilities experienced by the self-employed have been further amplified.
- WFH is mostly possible for less than 30% of workers in the country. This working arrangement is biased towards high-skill occupations and selected high-paying sectors, suggesting a potential worsening of inequality during the crisis as lower-paid economic activities and jobs could not simply continue operations via WFH.
- To work from home, workers need to have the resources to do so. Limited household access to fixed broadband, in addition to the lack of mobile (unattached to the physical workplace) computer hardware and internet access provided by employees further limits the ability to work from home.

1. Introduction

To contain the spread of Covid-19, the government introduced the Movement Control Order (MCO) since 18 March 2020. The order included the closure of public and private premises, except for several essential services, halting most economic activities in the country. The Malaysian Institute of Economic Research (MIER) estimated that the MCO will likely affect 2.4 million jobs.¹ Meanwhile, Bank Negara Malaysia (BNM) forecasted the unemployment rate to increase to 4.0% in 2020 from 3.3% in 2019.²

Social and physical distancing is the ‘new normal’ with the extension of the MCO³. Even after the MCO is lifted, people will still likely avoid public gatherings and remain 6-feet away from each other. Certain work arrangements, such as working from home (WFH) might persist too. WFH has several advantages during this public health crisis. Primarily, workers can continue to practice physical distancing, making them less likely to be infected with Covid-19 or infect others, which benefits not only the workers but the society at large. Moreover, some work or specific business operations could still continue despite the restrictions on movement to contain Covid-19, preventing the complete shutdown of economic activities and the loss of associated jobs.

But how much work could actually be operated from one’s home? This discussion paper looks at some estimates of WFH for workers in Malaysia. From this exercise, we attempt to identify the viability of working from home as the ‘new normal’ for workers during and throughout the recovery period of this pandemic.

¹ MIER (2020)

² BNM (2020b)

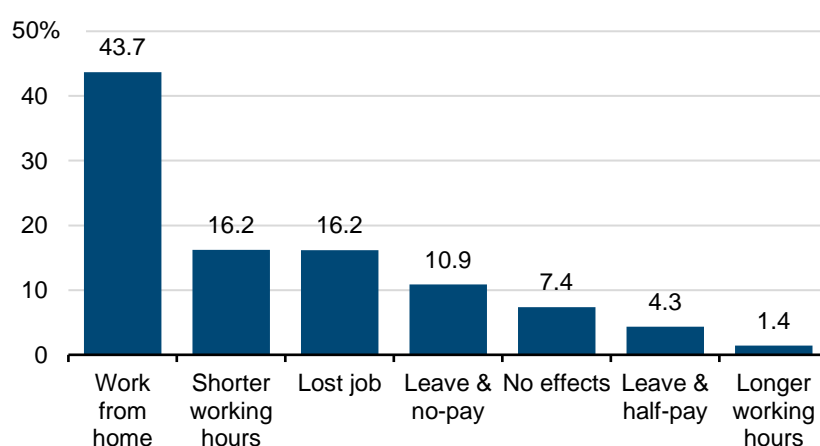
³ Adib Povera and Arfa Yunus (2020)

Who works from home?

Estimates for WFH matters during this pandemic because it identifies economic ‘survivors’ and ‘victims’ of the crisis. However, even in advanced countries, the ability to work from home and the likely ‘survivors’ of the crisis do not cover the majority of the workforce. In the United States (US), only 34% of jobs could be done from home, with variation between 3% and 76%, depending on sectors.⁴ Meanwhile, across 28 European Union (EU) countries, an estimated 17% of employees were engaged with teleworking⁵, with variation between 2% and 40% depending on sector, occupation and countries.⁶

The Department of Statistics (DOS) recently published findings from a study on the effects of Covid-19.⁷ Although the results of the survey are non-representative as it was based on convenient sampling, its findings are still very valuable to understand the severity of Covid-19. From the survey, 44% of workers were found to work from home due to the crisis, while 16% reduced their working hours. The income of close to one in three workers (31%) was affected as they either lost their job, were forced to take unpaid leave or half-pay leave due to Covid-19 (Figure 1).

Figure 1: Effects of Covid-19, percentage of respondents, March 2020



Source: Author's calculations based on DOS (2020c)

However, the effects of the crisis will not be the same for workers with different employment statuses, sectors and occupations, as illustrated in the next sections.

⁴ Dingel and Neiman (2020)

⁵ Teleworking refers to the use of ICT to work outside work premises

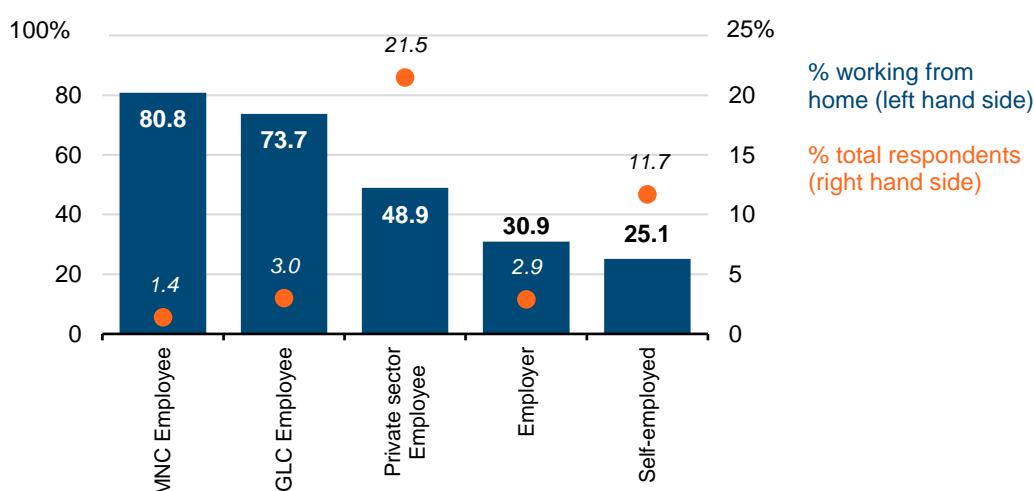
⁶ Eurofound and ILO (2017)

⁷ DOS (2020c)

1.1. WFH is uncommon among vulnerable workers

Workers with non-standard working arrangements such as the self-employed are among the most vulnerable workers in the labour market⁸ and WFH is not a viable working arrangement for most of them. Only one in four (25%) of the self-employed reported that they work from home during this pandemic. In comparison, other standard-workers reported a higher prevalence of WFH. Close to half (49%) of private sector employees were working from home, and the shares were higher for employees of multinational companies (MNC) and government-linked companies (GLC) (Figure 2).

Figure 2: Percentage of respondents WFH, by employment status, March 2020



Source: DOS (2020c)

The vulnerabilities experienced by the self-employed were evident during this pandemic. In addition to the low prevalence of continued economic activity via WFH, an overwhelming 95% of the self-employed reported lower earnings than pre-Covid-19 and 71% of them have insufficient savings which could sustain them for less than a month. Almost half of the self-employed (47%) reported that they lost their job during the crisis.⁹ Coupled with limited social protection and measures to assist the self-employed¹⁰, these vulnerabilities were further amplified among non-standard workers in the economy.

⁸ Nur Thuraya and Tan (2020)

⁹ DOS (2020c)

¹⁰ Hawati Abdul Hamid (2020), Adam Firouz (2020)

1.2. WFH is more prevalent among highly-paid sectors

DOS also reported the shares of workers who worked from home by economic activities, as listed in Table 1. The sectors where more than half of workers worked from home only constituted about 28% of total employment. Meanwhile, for the rest of the workforce, WFH is not a viable option and instead, workers either lost their job, forced to take leave or change their working hours (Figure 3).

Table 1: Percentage of respondents WFH (March 2020) and employment share (2019), by sector

Sector	% WFH	Employment share in 2019	
		By sector	Cumulative
Information and Communication	70.7	1.4	
Mining and Quarrying	69.8	0.6	
Professional, Scientific and Technical	67.9	2.6	
Administrative and Support Service	63.0	5.3	
Real Estate	61.0	0.6	28.1
Financial and Insurance/Takaful	59.2	2.2	
Education	59.2	6.4	
Construction	54.9	8.5	
Electricity	54.7	0.5	
Water supply	48.0	0.6	
Manufacturing	47.6	17.8	
Other services	41.8	1.8	
Arts, Entertainment and Recreation	34.1	0.5	
Human Health and Social Work	30.3	3.5	66.3
Wholesale and Retail Trade	26.0	17.2	
Transportation and Storage	25.9	4.4	
Agriculture	21.9	10.2	
Accommodation, F&B*	19.4	10.3	

Source: Author's calculations based on DOS (2020c) and DOS (2020b). Accommodation and F&B share of working from home is average share between accommodation and F&B. Exclude employment in 'Public administration and defence' and 'Households as employers' (not reported) so employment shares do not add up to 100%

More importantly, sectors with higher shares of WFH also tend to have higher pay, as illustrated in Figure 4. If we assume sectors with a higher prevalence of WFH are more likely to survive, then this also suggests the potential worsening of inequality during the crisis as lower-paid economic activities could not simply continue operation via WFH.

Figure 3: Effects of Covid-19, % of respondents by selected sectors, March 2020

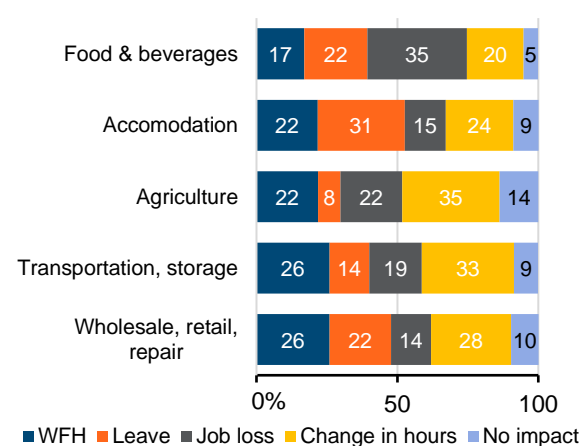
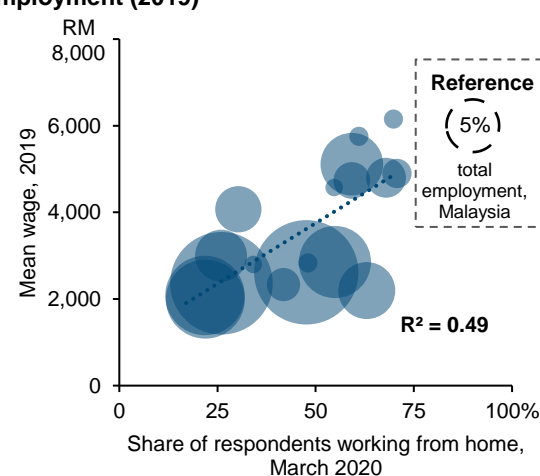


Figure 4: Real mean wage (2019), percentage of respondents WFH (March 2020) and share of employment (2019)

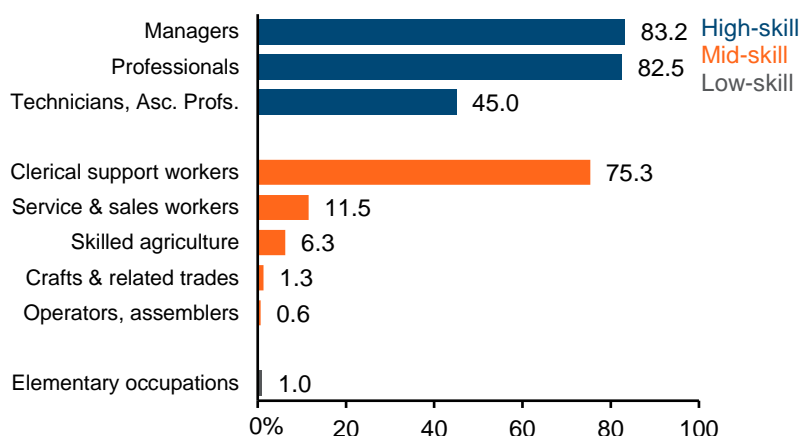


Source: Author's calculations based on DOS (2020c), DOS (2020d) and CEIC (n.d.). In Figure 3, selected sectors consist of those with the lowest shares of WFH. In Figure 4, median wages in nominal prices and exclude employment in 'Public administration and defence' and 'Households as employers'

1.3. WFH is biased towards skilled workers

The survey report by DOS did not report findings by occupational categories, which typically correlates with workers' income levels. This paper utilises estimates from Dingel and Neiman (2020) to estimate the prevalence of WFH by occupations and skill-level. Figure 5 shows the estimated prevalence of WFH in the US estimated by the authors.¹¹ WFH was evidently more common among high-skill occupations instead of mid-skill and low-skill jobs (Figure 5).

Figure 5: Share of jobs that can telework (proxy for WFH), by occupations, US 2019



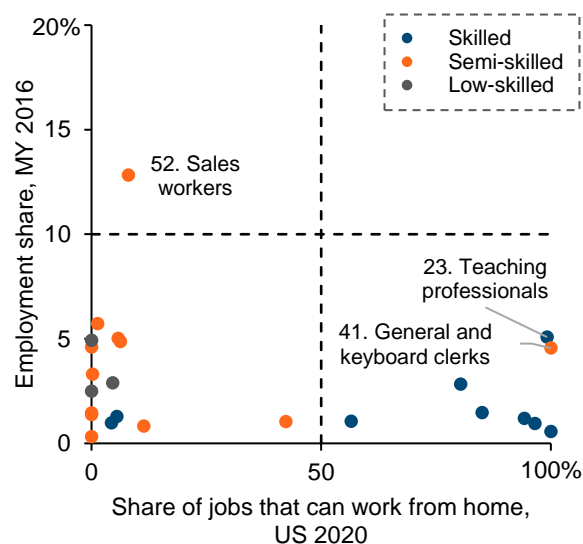
Source: Adapted from Dingel and Neiman (2020).

Assuming the classification of teleworking and WFH for a given occupation in the US is similar and applicable for Malaysia, Figure 6 shows that jobs with a higher prevalence of teleworking (>50%) only make up about 23% of employment in the country. These jobs are mostly high-skill occupations too. Only about one in ten workers in the 'sales worker' occupations, the largest occupational category in Malaysia (19%), could telework and WFH (Figure 6). In Figure 7, the likely prevalence of WFH is illustrated by skill levels and the bias of WFH for high-skill occupations is obvious. While close to 70% of skilled jobs can work from home, only 16% of semi-skilled jobs and 1% of low-skilled jobs can work from home.

Moreover, given that high-skill occupations typically have higher shares of male employment, WFH opportunities might benefit male workers more. Only two female-dominated occupations (teaching professionals and clerks, top right quadrant in Figure 8) have higher likelihoods of WFH. However, among semi-skilled and low-skilled occupations, such gendered observation is not obvious. Some male-dominated occupations, like builders and electricians (classified as semi-skilled), and some female-dominated occupations like cleaners (classified as low-skilled) have the prevalence of teleworking less than 5% (Figure 8).

¹¹ See Appendix. Jobs that can telework were determined by their 'Work context' and 'Generalised work activities'. For example, if a job requires workers to work outdoor everyday, then it is classified as an occupation that cannot telework, and therefore cannot be done from home

Figure 6: Share of employment by occupation in Malaysia (2016) and percentage of jobs that can telework (proxy for WFH) by occupation in the US (2020)



Source: Author's calculations based on Dingel and Neiman (2020) and Ng et al. (2018).

Figure 7: Estimated share of workers that can telework (proxy for WFH) in Malaysia, by skill level, 2016

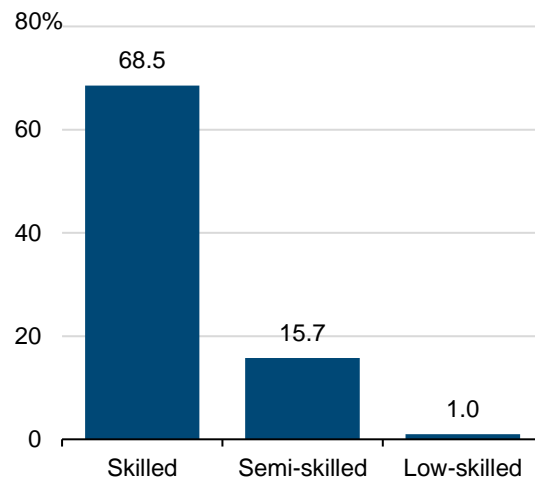
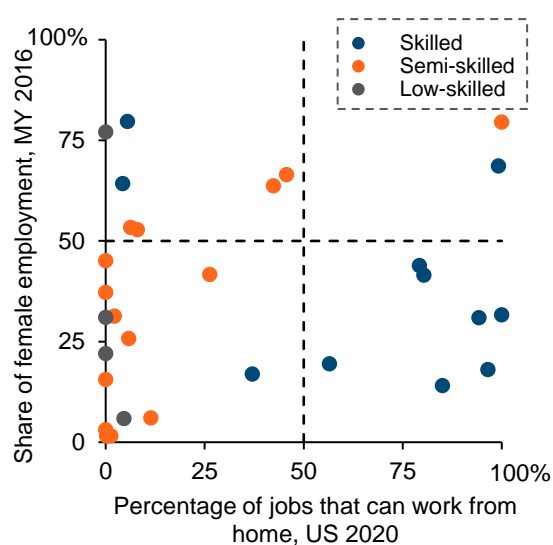


Figure 8: Share of female employment by occupation in Malaysia (2016) and percentage of jobs that can telework (proxy for WFH) by occupation in the US (2020)



Source: Author's calculations based on Dingel and Neiman (2020) and Ng et al. (2018).

These findings further suggest the worsening of inequality. High-skill occupations, which not only pay well but hire more educated workers, can survive this pandemic via WFH. Because of their human capital level, one could also argue high-skill workers who lost their jobs can bounce back and recover relatively quicker than mid-skill and low-skill workers.

However, some caution is warranted for the estimates shown in this section. We assumed that the prevalence of teleworking and WFH for a given occupation is the same between the US and Malaysia. In reality, this might not hold true. Although two occupations have the same title in these two countries, the nature of their work could differ based on other considerations such as firm-specific features or infrastructures, culture or even customer preferences.

2. Who *can* work from home?

For most workers, WFH is not a viable option due to the nature of their job. But there are also other factors to consider, even among workers who *can* telework or WFH. For example, while teaching professionals can WFH, some students cannot participate in a virtual classroom or access online learning materials because they are not equipped with the technology and internet access to do so.¹² As such, whether a teaching professional *can* telework need not indicate they *will* WFH.

Moreover, WFH depends on whether workers have the resources to do so i.e. if workers have a working computer and stable internet. For households, the penetration rates for fixed broadband remains low¹³, resulting in a lack of stable internet access to allow for productive WFH arrangements. In fact, households typically do not use the internet for work, at least based on estimates of internet use before this crisis. In 2019, only 11% of individuals used the internet to work from home, more common among male (11.7%) compared to female (10.2%).¹⁴ During this economic crisis, many households are simply not prepared to transition to WFH if need be.

Of course, employers should provide workers with the necessary tools to WFH instead of relying on personal or household internet connection. But there are also potential gaps on the firm's side to support this. Only establishments in ICT, real estate and finance have 100% computer and internet access. In other sectors, the absence of computer hardwares and internet access limits the ability of workers to WFH. Moreover, most establishments' internet access and computer network are tied to the *physical* workplace itself—81% relied on fixed broadband; 55% used local area network and 36% used wireless local area networks.¹⁵ Unless upgraded to laptops and mobile-based connections, firms are unlikely to be able to support WFH arrangements for workers.

¹² Gong (2020)

¹³ Ibid.

¹⁴ DOS (2020a)

¹⁵ DOS (2019)

Additionally, WFH can affect male and female workers differently, especially considering the double burden of the market and household production faced by women even during ‘normal’ times, i.e. before the Covid-19 crisis. Women do more unpaid care work and often multitask it alongside other activities.¹⁶ Among women who WFH, the pressure of managing work- and household-related responsibilities when various care-related services are not operating could add significant stress and burden for women, affecting their well-being. Longer working hours and more non-standard working schedules (interruption with running errands in between, working on weekends) due to teleworking as people WFH¹⁷ could also potentially lead to a decent work deficit among some workers.¹⁸

3. Concluding remarks

Working from home is likely part of the ‘new normal’ as the global community continues to fight Covid-19. Nonetheless, it is not a viable option for many workers in Malaysia. Some cannot work from home because of the limitations on the firm’s side (no mobile computer or internet access), although incentives such as the SME Automation and Digitalisation Facility¹⁹ could assist firms to build their capacity to enable WFH arrangements. However, WFH could still be limited due to the nature of the job itself. Vulnerable workers—the self-employed, low-skilled and low-paid workers—are disproportionately affected by the inability to work from home. In the absence of WFH, they likely lost their jobs during the MCO. For those lucky enough to be re-employed when the MCO ends, new working rules and standards related to health and safety at the workplace would also be needed to ensure workers remain healthy.

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5. Appendix

Dingel and Neiman (2020) used responses to survey questions in the US's [Occupational Information Network \(O*NET\)](#) on 'work context' and 'generalised work activities' to determine whether an occupation is teleworkable. An occupation that requires 'daily outdoor work' or reliance on 'operating vehicles, mechanised devices, or equipment', for example, were classified as non-teleworkable. Jobs in O*NET were classified using the Standard Occupational Classification (SOC) up to 8-digits level (data available [here](#)). Authors then directly matched information on whether jobs can telework with employment data from the US Bureau of Labour Statistics to further investigate the shares of jobs which can telework by industries and major cities in the US.

In an initial version of this paper (April 2020), we re-classified SOC to 6-digits and matched them with 4-digit level International Standard Classification of Occupation (ISCO) using conversion table prepared by Wojciech Hardy (available [here](#)). Then, we calculate the prevalence of teleworking within a broader occupational category (2-digits and 1-digit ISCO), to proxy for the ability to work from home.

However, this method **ignores the many-to-many mapping between the SOC and ISCO**. In a more recent version of Dingel and Neiman (2020), authors solved this by weighting each SOC occupation with employment shares of their associated ISCOs for each country (replication codes available [here](#)). Authors then obtained an estimate of teleworkable jobs, assuming that classification of teleworking and WFH for a given occupation in the US is similar and applicable to other countries. As noted in section 1.3, this assumption is not without limitations.

Using the share of teleworkable jobs in the US, we then obtained the estimate for share of teleworkable jobs for Malaysia by skill levels in Figure 5 to Figure 8. We also used estimates of the share of teleworkable jobs in selected non-US countries—countries with similar GDP per capita level—but the results were not much different.

This exercise used employment data by **selected** 2-digits ISCO, provided by the authors of [Ng et al. \(2018\)](#). Note that the original dataset for Malaysia was downloaded from [ILOSTAT](#) but data is no longer available online.