

BRIEF NOTES



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SUMMARY

DOES COVID-19 SHIFT LABOR MARKET EQUILIBRIUM? CASE OF SKILL MISMATCH IN INDONESIA

This brief note investigates skill mismatch patterns before and during the pandemic. It is found that the share of overqualified workers has slightly increased while the share of underqualified workers has slightly decreased. One plausible explanation of this shifting trend is that there was a downward occupational mobility, implying that the quality of jobs in the labor market has declined and signaling a coping strategy mechanism for the workers to stay being employed during the pandemic.

KEY POINTS

- The share of overqualified workers has increased while the share of underqualified workers has decreased between 2019-2020
- These shifting patterns indicate that there was a downward occupational mobility among workers given the same level of average education in 2019 and 2020
- The patterns could also be viewed as the workers' coping strategy to maintain their employment status and not lose income during the pandemic.

Introduction

The economic pressures that COVID-19 brought in 2020 have been affecting the labor market situation. The unemployment rate in Indonesia increased to 7.07% in August 2020 from previously 5.23% in August 2019, which means that there were additional 2.6 million unemployed people within one year (BPS, 2020). Furthermore, the informal sector share has also increased significantly from 55.88% in 2019 to 60.47% in 2020, which indicates economic and business disruption during the pandemic. Many workers have become more vulnerable as informal workers are often not covered by any insurance or social protection program.¹

This brief note aims to know whether the labor market composition has shifted during the pandemic by looking at the skill mismatch composition in Indonesia. We compared two data points in 2019 and 2020 to reflect the labor market conditions “before” and “during” the pandemic. Skill mismatch is important to be analyzed since it reflects the labor market equilibrium. The effects of skill mismatch vary, ranging from wage penalty (Korpi & Tahlin, 2007; Levels, van der Velden, & Allen, 2014) to job satisfaction (Kim & Choi, 2018). The implication of skill mismatch is broad as the policymakers could have policy options ranging from increasing the quality of the workers to increasing the quality of available jobs. In the context of COVID-19, any changing patterns of skill mismatch could also indicate labor market coping strategies. A worker could cope by shifting into a job with lower education qualifications to maintain his/her employment status (not losing job/employment).

Definition, Data, and Methodology

Skill mismatch is defined as when the worker’s education level is not the same as the education level required by the job. If the worker’s education level is higher than the job requires, then the worker is classified as overqualified (O). If the worker’s education level is lower than the job requires, then the worker is underqualified (U). If they are at the same level, then the worker is matched (M).² The skill mismatch category is constructed based on a cross-tabulation between International Standard Classification of Education 1997 (ISCED-97) stating about education level (UNESCO, 2006) and International Standard Classification of Occupation 2008 (ISCO-08) about occupational category (ILO, 2014) that is equal to Indonesia Occupation Classification 2014 (KBJI 2014).³ The classification of match or mismatch (over- and under-qualified) of a job is based on the skills and the knowledge that a worker needs to have to fill the position (occupation). Table 1 shows the skill mismatch classification.

National labor force surveys (Survei Angkatan Kerja Nasional—Sakernas) in 2019 and 2020 (August round) were used in this analysis. The two data points were used to compare the business-as-usual period in 2019 and the COVID-19 pandemic period in 2020. The analysis used those who were currently employed by excluding workers in the army or the police. Since the analysis used weight to have nationally representative statistics, there were 125,934,184 workers analyzed in 2019 and 127,917,146 workers analyzed in 2020. This brief note employed a descriptive statistics analysis.

Table 1
Skill Mismatch Classification

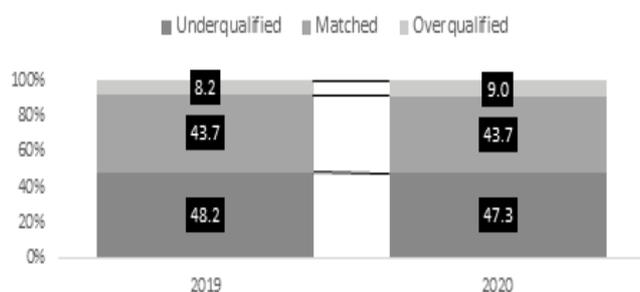
		Education level based on ISCED-97					
		Up to primary	Lower secondary	Upper secondary	Post-secondary non-tertiary	First- and second-stage of tertiary	
		Level 0-1	Level 2	Level 3	Level 4	Level 5-6	
		Up to elementary school	Junior high school	Senior high school	Diploma I - Diploma III	Diploma IV, Bachelor - Doctoral	
Occupation Category based on ISCO-08/KBJI 2014	Group 1	Managers	U	U	U	U	M
		Professionals	U	U	U	U	M
		Technicians and associate professionals	U	U	U	U	M
	Group 2	Clerical support workers	U	U	M	M	O
		Services and sales workers	U	U	M	M	O
		Skilled agricultural, forestry and fisheries workers	U	U	M	M	O
		Craft and related trade workers	U	U	M	M	O
		Plant and machine operators assemblers	U	U	M	M	O
	Group 3	Elementary occupations	M	M	O	O	O

Source: Adapted from ILO (2014) and UNESCO (2006). Note: U = Underqualified; M = Matched; O = Overqualified.

Findings

The share of workers whose education level was matched with the education level required by the job has stagnated in 43.7% in both years (see Figure 1). The shifting of the workers' composition can be observed among both underqualified and overqualified workers. The proportion of the overqualified workers has increased from 8.2% in 2019 to 9% in 2020. Meanwhile, the proportion of underqualified workers has decreased from 48.2% in 2019 to 47.3% in 2020. These patterns could suggest the presence of at least these two events. First, there was a signal of oversupply of workers with higher education level in the labor market during the pandemic, although the signal is weak. This oversupply could happen if the labor market could not absorb new employments well (and hence, the increased unemployment rate), particularly the new entrants who just graduated from school. Second, there was an indication that the workers with higher education level have filled occupation or work position that requires less education, meaning that there was an indication of downward occupational mobility. Since the analysis was conducted for two points of time, one-year apart—assuming that education enrolment and education level of workers, in general, were constant—occupational mobility during the pandemic could be the explanation of the shifting of skill mismatch trend.

Figure 1
Overall skill mismatch

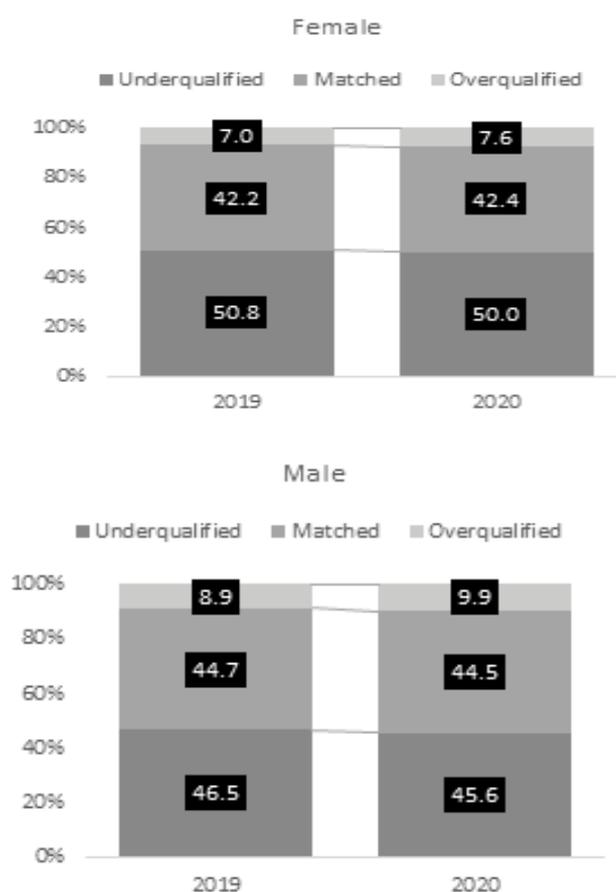


Source: Author's calculation.

Male workers have experienced higher overqualification proportions from 2019 to 2020 than female workers (see Figure 2). The proportion of overqualification among male workers has increased by one percentage point from 8.9% in 2019 to 9.9% in 2020. Meanwhile, the prevalence of overqualification among female workers has increased by 0.6 percentage points

from 7% in 2019 to 7.6% in 2020. Based on these results, there is an indication that male workers were more likely to experience downward occupational mobility than female workers during the pandemic. In addition to the unemployment rate and labor force participation rate, the labor market patterns of female workers during the pandemic in Indonesia need to be investigated further to give a clearer picture of the behavior of male and female workers in the labor market during the crisis.

Figure 2
Skill Mismatch by Gender



Source: Author's calculation.

The changing composition of skill mismatch mostly happened for workers with upper-secondary and first/second-stage of tertiary education level. The first difference of skill mismatch compositions in 2019 and

2020 was analysed further to know the patterns of shifting of occupations. As Table 2 depicts, workers with upper secondary education level have shifted from occupations in Group 1 into Group 2 and from Category 2 into Category 3. A similar trend also occurred among the workers with the first/second stage of tertiary education. In general, the occupations strongly related to wholesale retail and trade and agriculture sectors, such as services and sales workers and skilled agricultural, forestry, and fisheries workers, are the types of occupation that received new workers. Meanwhile, occupation in Category 1, such as managers and professionals, were the ones that experienced a decrease. This trend could be related to the general economic trends where the agriculture sector was one of the sectors that still had positive yearly economic growth in the second and the third quarter of 2020. The pandemic has also created a growing retail trade sector where many people opened home businesses and had the transaction online. This growing sector could also be related to the increased number of workers with services and sales workers during the pandemic, especially those with lower secondary and upper secondary education level.

Conclusion

COVID-19 pandemic has created pressures on the labor market situation in Indonesia. This brief note investigates the composition of skill mismatch in the Indonesian labor market before and during the COVID-19 as an indication of shifting in the labor market equilibrium by using the 2019 and 2020 national labor force surveys (Sakernas) to reflect the business-as-usual period versus the COVID-19 pandemic period. This analysis found that the overqualified workers's share has increased between 2019-2020, while the share of the matched workers has stagnated. There is

an indication that the increased share of the overqualified workers (and the decreased share of the underqualified workers) was due to occupational mobility. Given that the workers' average education level is the same in 2019 and 2020, the changing mismatch classification of a worker could point to occupational mobility. Nevertheless, the occupational mobility that the workers experiencing was the downward one. It was also observed that occupational mobility was concentrated among the services and sales workers and skilled agriculture, forestry, and fishery workers. This phenomenon aligns with economic trends in the second and third quarter of 2020.

The shifting trend of skill mismatch during the pandemic could indicate a coping strategy mechanism among the workers. To maintain the employment status during the pandemic, many workers who were previously laid off due to the economic downturn might have been seeking new ways to obtain a job, although the job required lower education level than their education level. The impact of skill mismatch varies, ranging from wage penalty to job satisfaction. For instance, Samudra, Wisana, and Wongkaren (2018) found that vertically mismatched (skill mismatched) workers suffered from wage penalty compared to their matched counterparts, indicating that the mismatched workers had lower labor productivity. Even after controlling for training, the wage penalty for the overqualified workers was higher than the underqualified workers. Reflecting on these results in the pandemic context, the shifting of skill mismatch trend could further deteriorate labor productivity.

To cope with the situation, the policies that tackle problems on the side of demand for labor could be created by involving strategies to recover the demand and the supply side of the economy. The demand for labor-related

Table 2
First-difference of Skill Mismatch Decomposition in 2019-2020 (in percentage point)

	Pre-primary, primary	Lower secondary	Upper secondary	Post-secondary non-tertiary	First/second-stage of tertiary
Managers	0.04	-0.02	-0.16	-0.04	-0.26
Professionals	-0.05	-0.03	-0.13	0.00	-0.09
Technicians and Associate Professionals	-0.04	-0.07	-0.24	-0.04	-0.13
Clerical Support Workers	0.00	-0.02	-0.29	-0.04	-0.05
Services and Sales Workers	-0.14	0.40	0.67	0.07	0.25
Skilled Agricultural, Forestry and Fishery Workers	0.45	0.45	0.46	0.02	0.10
Craft and Related Trades Workers	-0.49	-0.03	0.23	0.04	0.05
Plant and Machine Operators Assemblers	-0.37	-0.31	-0.48	0.00	0.00
Elementary Occupations	-0.18	0.02	0.42	0.02	0.05

Color Notes: Underqualified (Red), Matched (Blue), Overqualified (Yellow)

Source: Author's calculation. Note: The first difference was obtained by differencing the cell percentage of tabulation between occupation and education level in 2019 and 2020. Red bar indicates a decrease in the cell percentage, while yellow bar indicates an increase in the cell percentage.

policies is vital because of twofold: to lower the future unemployment rate and increase workers' chance of getting the occupation suitable with their education level. The economic recovery plan launched by the Government of Indonesia could guide the economic recovery better. Nevertheless, the economic recovery efforts should be led first by health recovery efforts, such as enforcing tracing, testing, and treatment (3T) of COVID-19 and enforcing physical distancing, mask-wearing, handwashing with soap, while waiting for the completion of the vaccination for the population.

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Notes

- <https://www.theigc.org/blog/protecting-the-unprotected-how-can-social-protection-reduce-the-vulnerability-of-informal-workers/>
- This is the normative approach of skill mismatch definition. There are two other definitions of skill mismatch: the statistical approach and the subjective approach. The statistical approach includes the average education level of the workers and its distribution in an occupation. The subjective approach is obtained by asking directly to the workers about their qualifications. More discussions on these topics can be found in ILO (2014).
- Due to data limitation, this study modified the education level included in post-secondary non-tertiary education (level 4) from the original definition in ISCED-97. In this study, level 4 only contains the degree that can be accomplished between 6 months to 2 years into degree (Diploma I and Diploma II in the Indonesian education system) that can be accomplished between 6 months to 3 years (Diploma I to Diploma III in the Indonesian education system). Furthermore, the first-stage and the second-stage of tertiary education were also grouped due to data limitation. For more information about ISCED-97 education level, see UNESCO (2006).

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