THE VULNERABILITY OF JOBS TO COVID-19:
THE CASE OF MALAYSIA

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Summary

Approach

- ❑ The study follows the methodology employed in Dingel and Neiman (2020), Garrote Sanchez et al. (2020) and Mongey et al. (2020)
- ❑ The ability to work from home (adjusted for internet access) and extent of physical proximity at work based on O*NET scores for each occupation is applied to Malaysian data to estimate the extent and distribution of jobs most vulnerable to COVID-19
- ❑ This distribution is analyzed across a number of socioeconomic variables (i.e. income, education, gender, urban-rural location, employment status)

Findings

- ❑ 64.5 percent of jobs in Malaysia are not conducive to home-based work (adjusted for internet access) and 50.9 percent require high levels of physical proximity
- ❑ Workers most vulnerable to COVID-19 are also most vulnerable overall
- ❑ Further rounds of cash transfers targeted at the B40 might be necessary as long the crisis persists
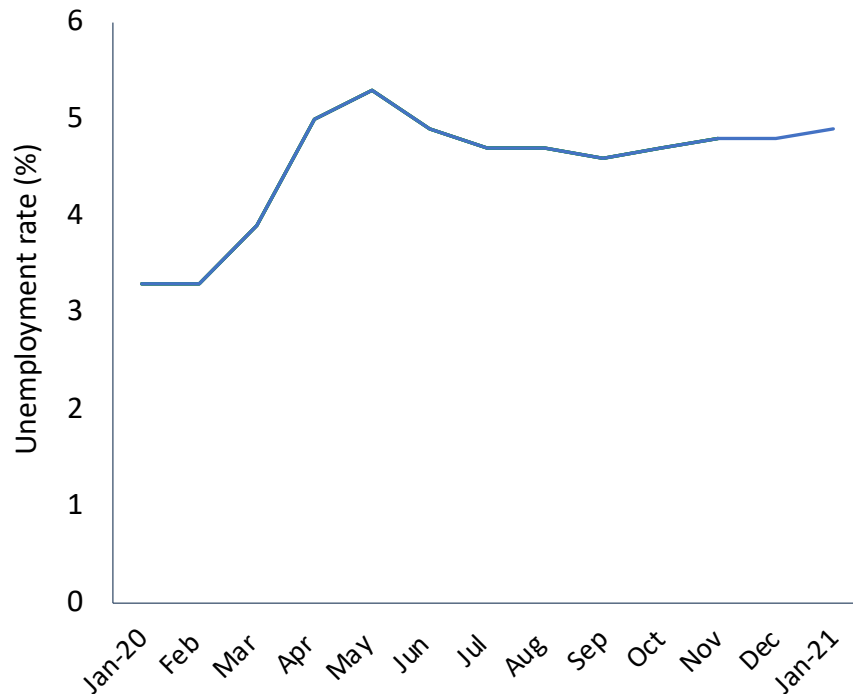
Introduction

The recent spike in COVID-19 cases has led to a (re)tightening of mobility restrictions…
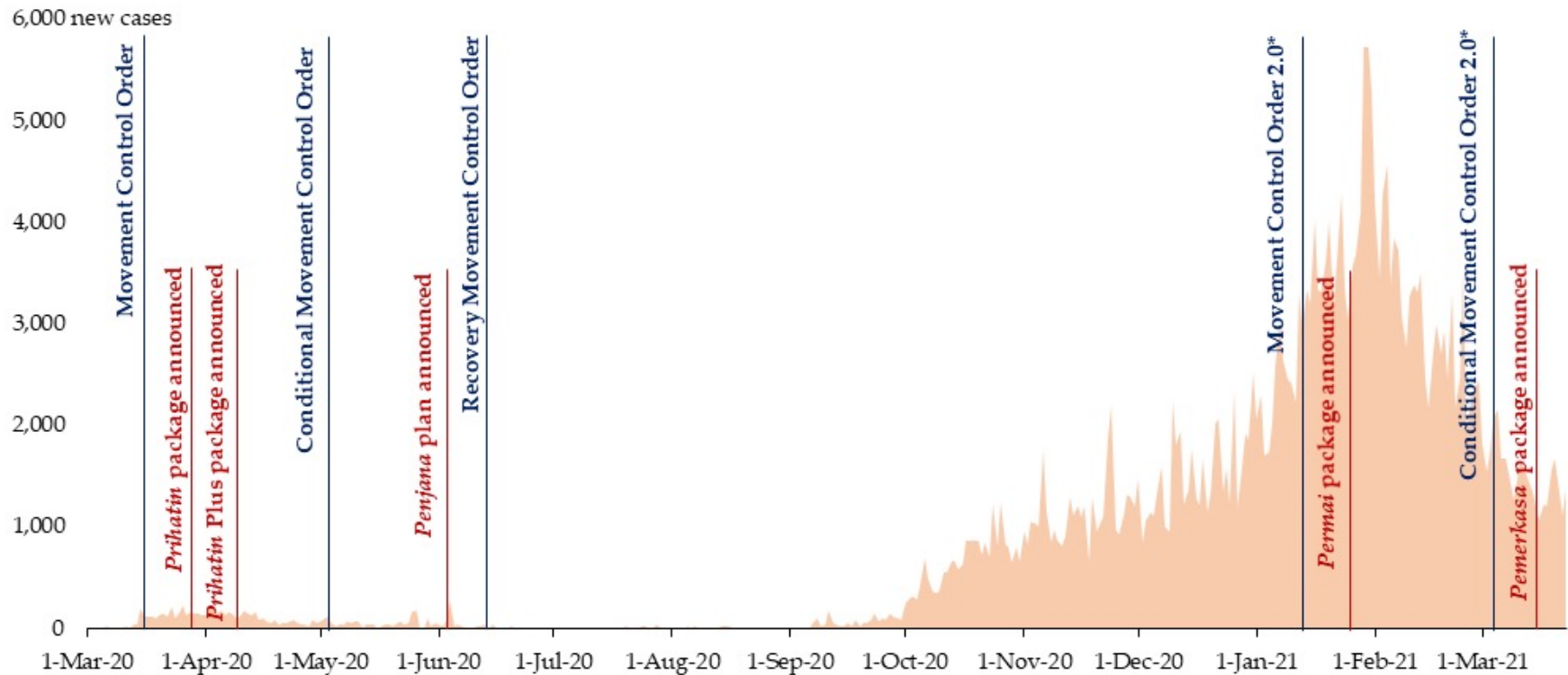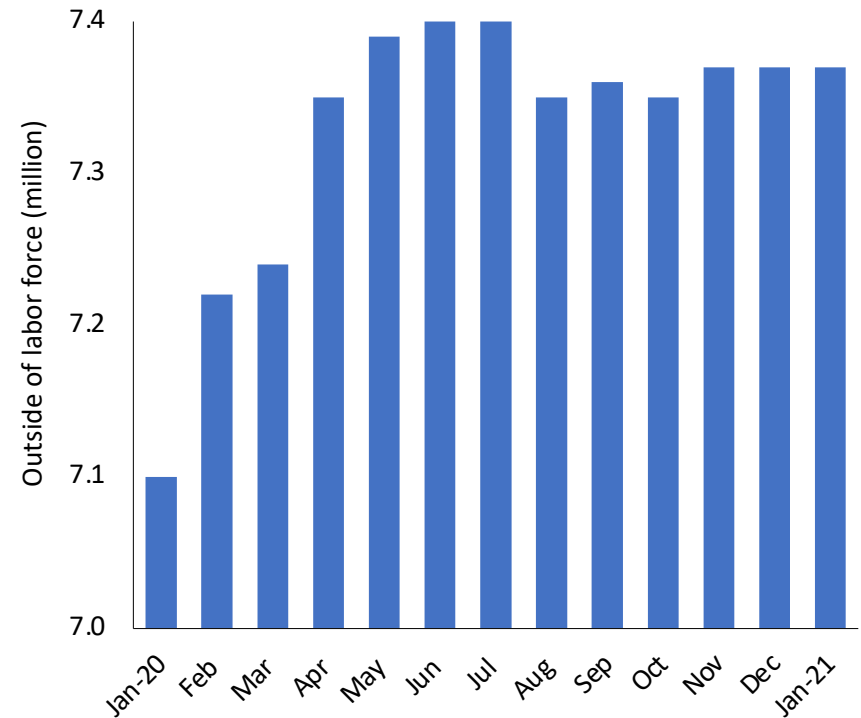

Source: Ministry of Health

...causing further concerns of exacerbated unemployment and people leaving the labor force

Unemployment rate, January 2020 to January 2021

Working age population outside of the labor force, January 2020 to January 2021

Source: World Bank staff calculations based on DOSM.

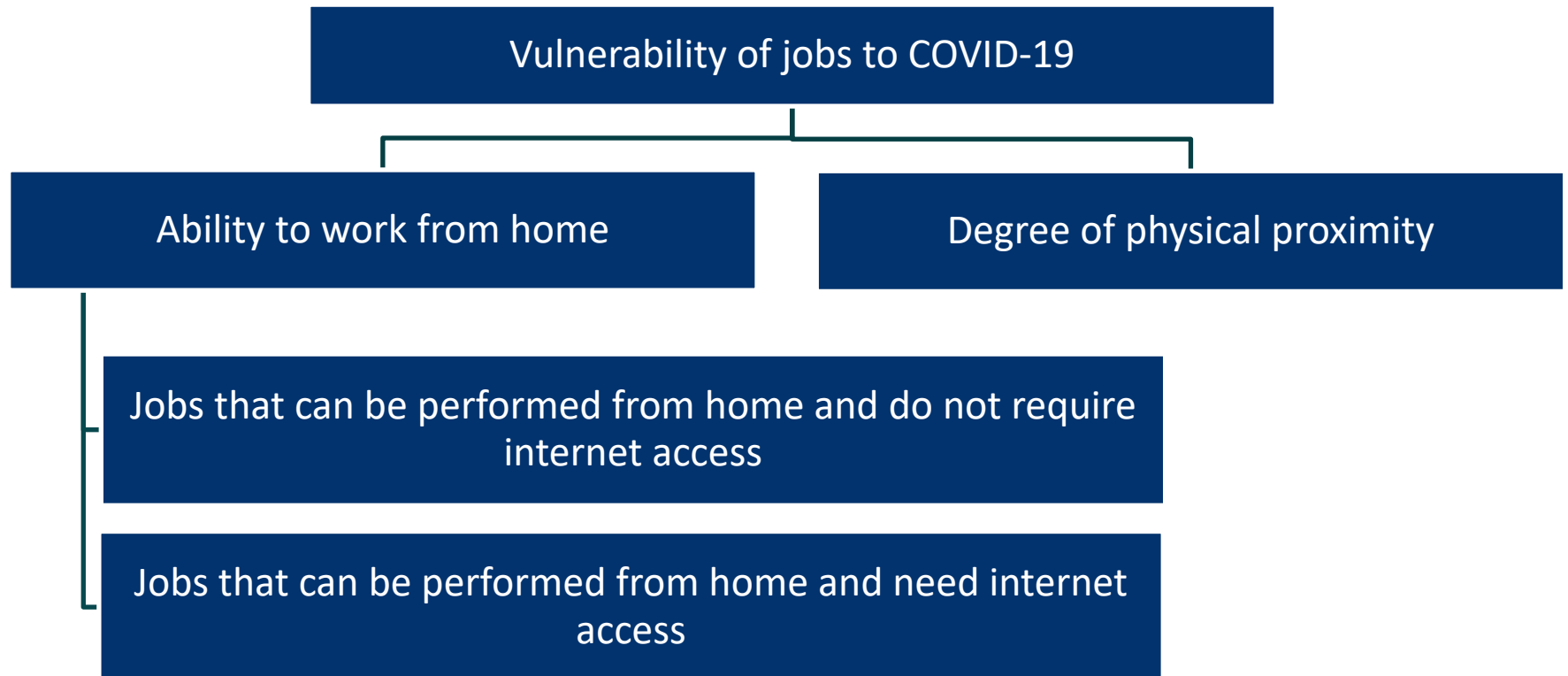Source: World Bank staff calculations based on DOSM.

Research objective

What is the extent and distribution of jobs most vulnerable to COVID-19 in Malaysia?

Methodology

Methodology

o **The methodology was adopted from Dingel and Neiman (2020), Garrote Sanchez et al. (2020) and Mongey et al. (2020)**

Vulnerability of jobs to COVID-19

Ability to work from home

Degree of physical proximity

Jobs that can be performed from home and do not require internet access

Jobs that can be performed from home and need internet access

Methodology

o The methodology was adopted from Dingel and Neiman (2020), Garrote Sanchez et al. (2020) and Mongey et al. (2020)

A job is less vulnerable to COVID-19 if it can be performed from home (adjusted for internet access) and requires low levels of physical proximity

Data sources

- **America's Occupational Information Network (O*NET)**

  - **Ability to work from home**

  - **Importance and frequency of e-mail use**

  - **Degree of physical proximity**

- **Department of Statistics Malaysia**

  - **Internet access by administrative district**

  - **Socioeconomic variables (income, education, gender, urban-rural location, and employment status)**

O*NET indicators

Ability to work from home

- Measured as a binary indicator for each job, following Dingel and Neiman (2020)

  - **Work context:**

    - For example, they spent majority of time wearing common or specialized, protective or safety equipment; working outdoors;

  - **Generalized work activities:**

    - For example, operating vehicles, mechanized devices, or equipment, performing for or working directly with the public

  - **Adjusted for internet importance and access:**

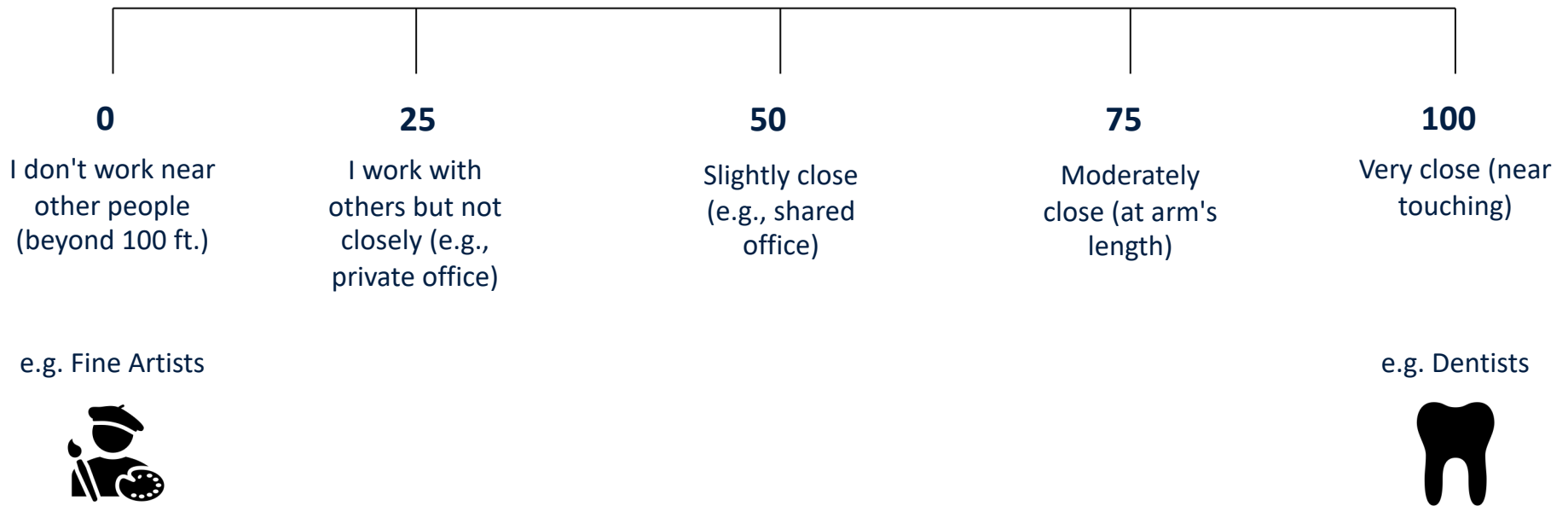   - For example, how often they use electronic mail in this job

Physical proximity

- A job is considered as requiring high physical proximity if the physical proximity required for the job is higher than the average for all jobs

  - **Work context:**

    - To what extent does this job require the worker to perform job tasks in close physical proximity to other people?

O*NET indicators: Physical proximity

To what extent does this job require the worker to perform job tasks in close physical proximity to other people?

0	25	50	75	100
I don't work near other people (beyond 100 ft.)	I work with others but not closely (e.g., private office)	Slightly close (e.g., shared office)	Moderately close (at arm's length)	Very close (near touching)

e.g. Fine Artists

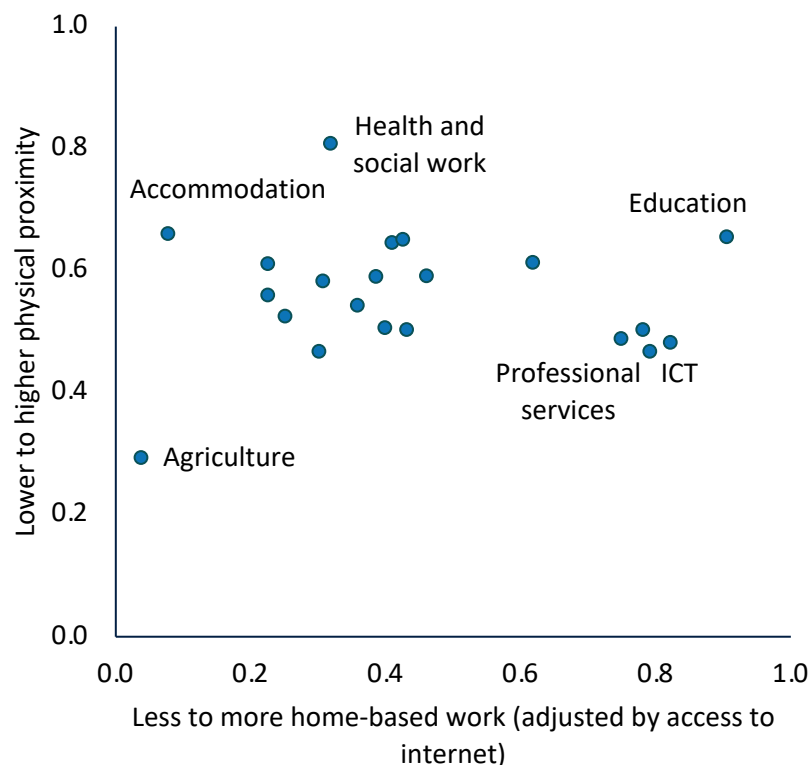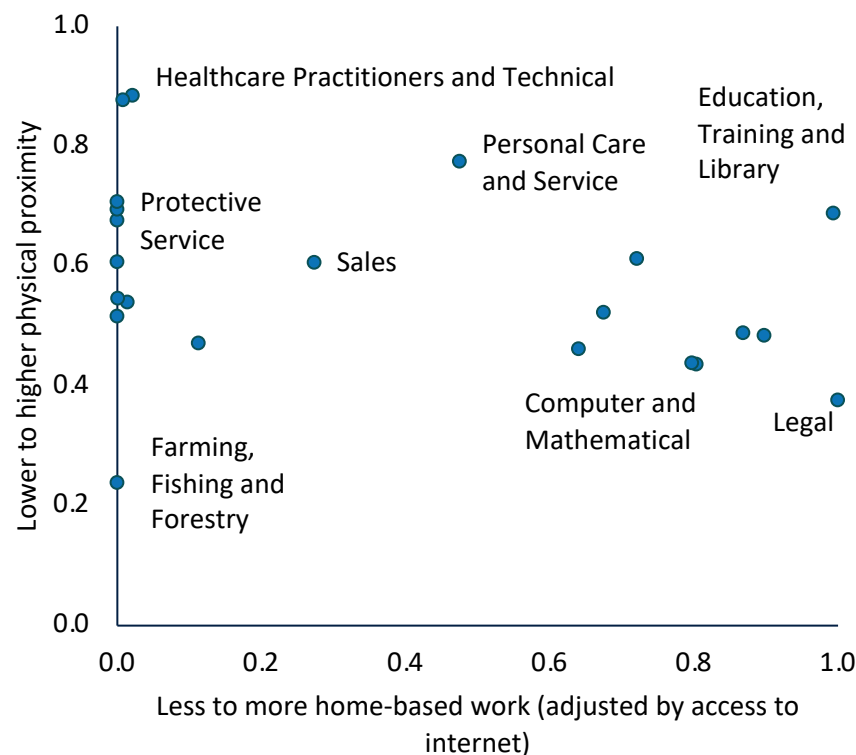e.g. Dentists

Findings

Findings

64.5 percent of jobs in Malaysia are not conducive to home-based work (adjusted for access to the internet) and **50.9** percent require high levels of physical proximity, making them most vulnerable during the COVID-19 crisis

Certain sectors and occupations are more vulnerable than others…

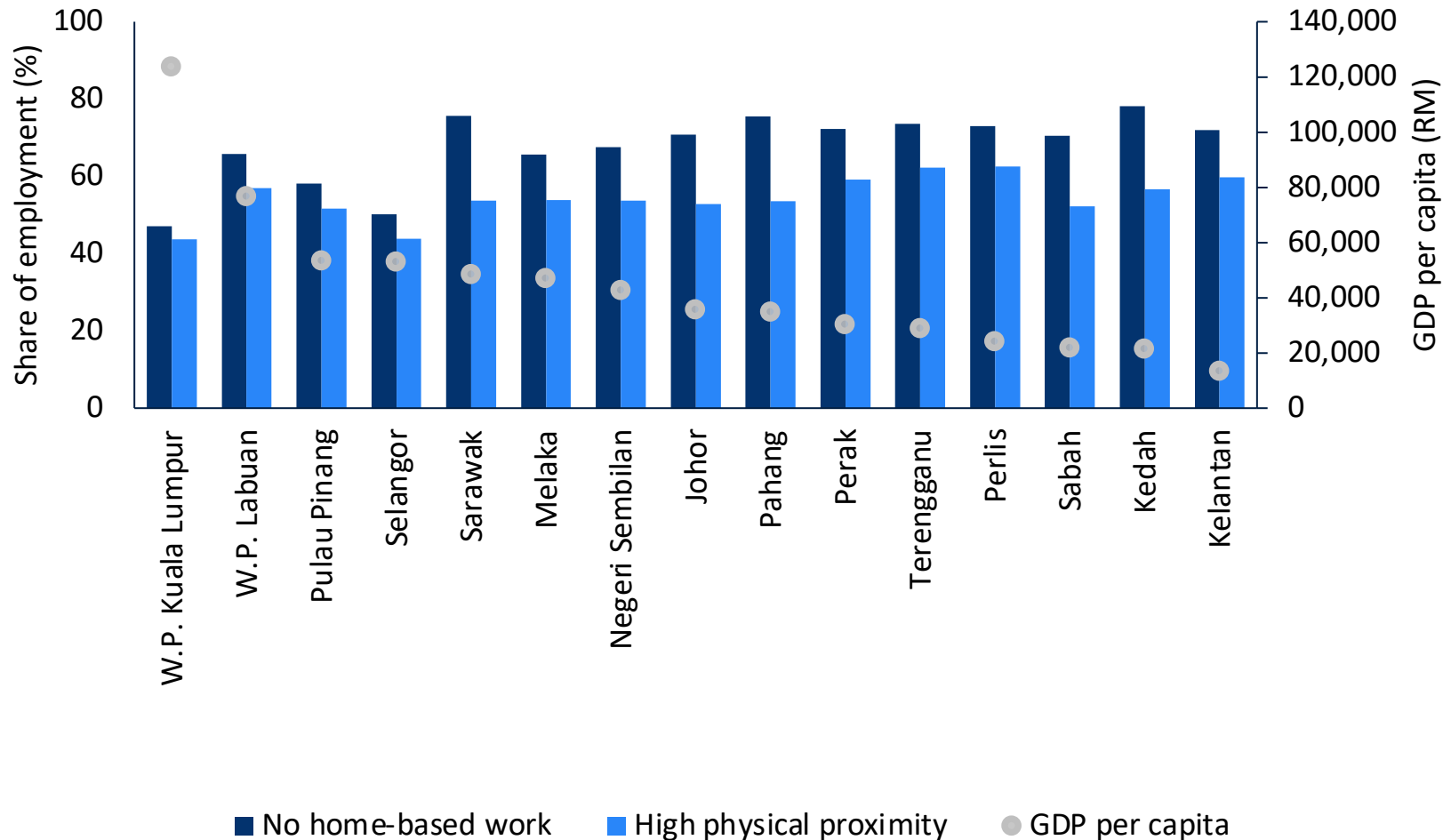**Ability to work from home and level of physical proximity by sector**

Health and social work

Accommodation

Education

Professional services   ICT

Agriculture

Lower to higher physical proximity

Less to more home-based work (adjusted by access to internet)

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia
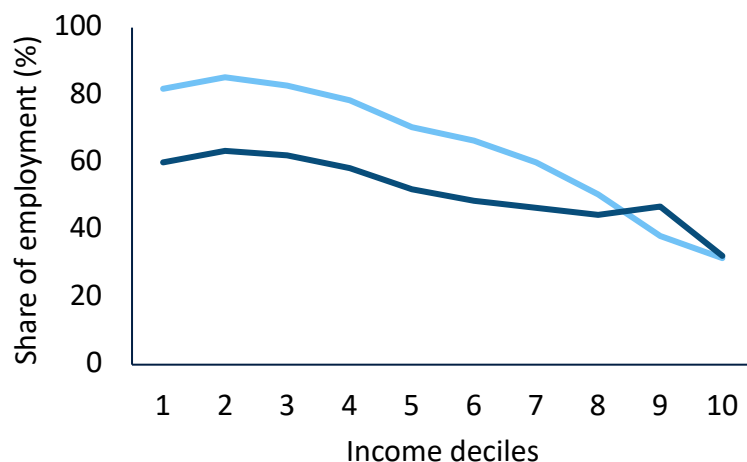
Ability to work from home and level of physical proximity by occupation

Healthcare Practitioners and Technical

Education, Training and Library

Personal Care and Service

Protective Service

Sales

Farming, Fishing and Forestry

Computer and Mathematical

Legal

Lower to higher physical proximity

Less to more home-based work (adjusted by access to internet)

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Less developed states are more affected by mobility restrictions

Legend: No home-based work | High physical proximity | GDP per capita

The jobs of workers with relatively low levels of income and education are most vulnerable to COVID-19

Share of employment by ability to work from home, physical proximity and income

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Ability to work from home and level of physical proximity by education level
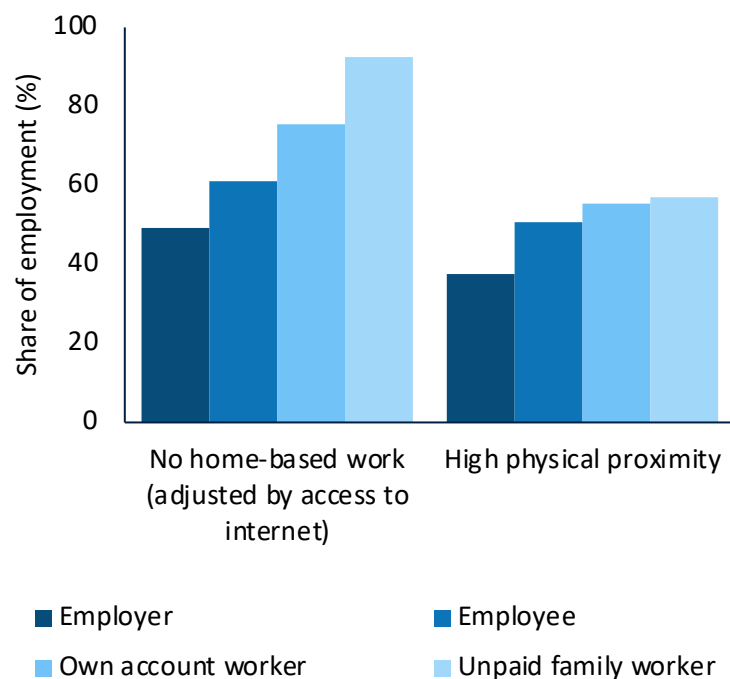

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia
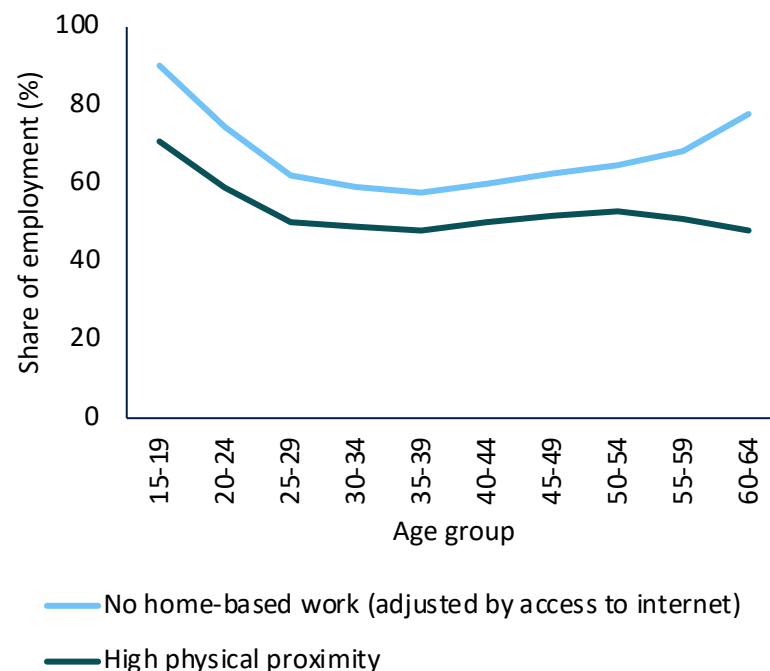
Own account workers, unpaid family workers and those at advanced or very young ages are also particularly vulnerable

Share of employment by ability to work from home, physical proximity and employment status

Share of employment by ability to work from home, physical proximity and age group

Legend (left chart):
- Employer
- Employee
- Own account worker
- Unpaid family worker

Legend (right chart):
- No home-based work (adjusted by access to internet)
- High physical proximity

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia
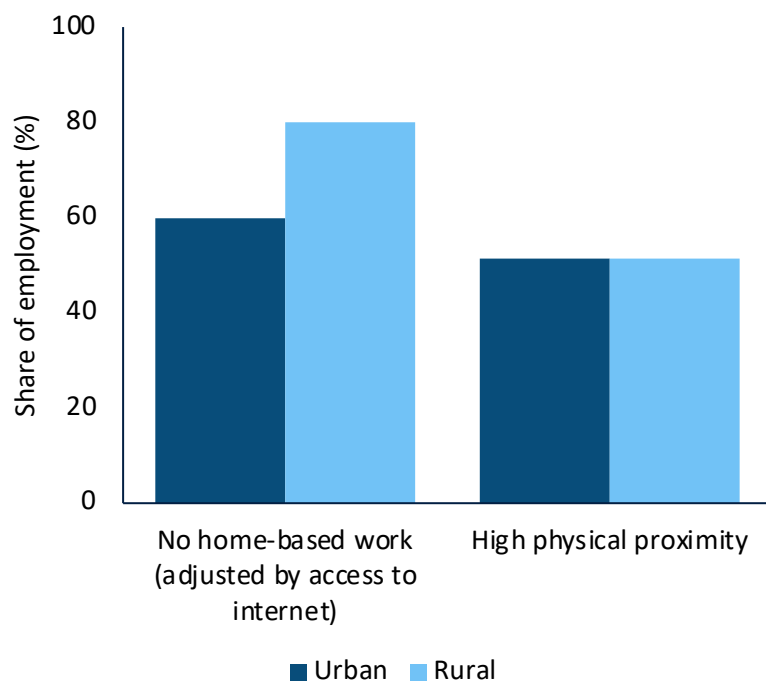
Workers from rural areas and men are more likely to have jobs that cannot be performed from home

Share of employment by ability to work from home, physical proximity and location

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Share of employment by ability to work from home, physical proximity and gender
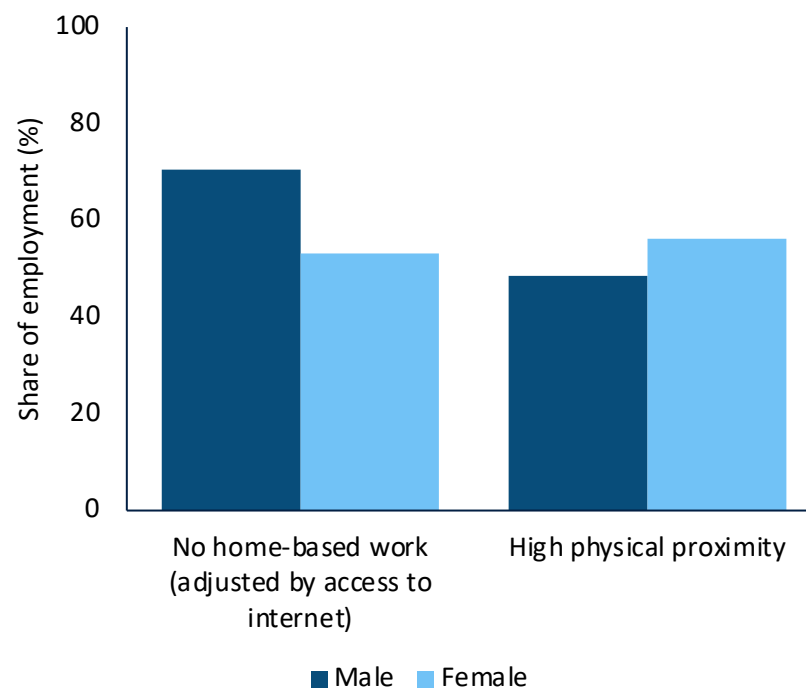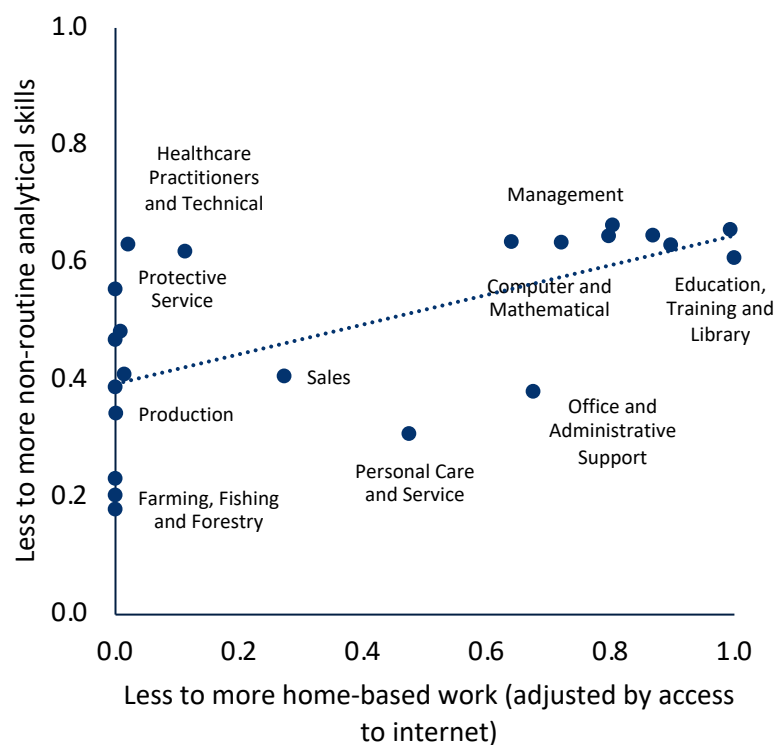

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Skills and the ability to work from home

o **Acemoglu and Autor (2011) use O*NET indicators to measure:**

  o **Non-routine cognitive analytical skills**

  o **Non-routine cognitive interpersonal skills**

  o **Non-routine manual physical skills**

  o **Routine cognitive skills**

  o **Routine manual skills**

o **Jobs that can be performed from home are relatively more likely to require non-routine cognitive analytical and interpersonal skills, and routine cognitive skills**

  o **Acemoglu and Autor's (2011) approach was applied to Malaysian data to identify the relationships between these skills and the ability to work from home**

o **A linear probability model was used to regress the ability to work from home on the three types of skills, controlling for sociodemographic variables**
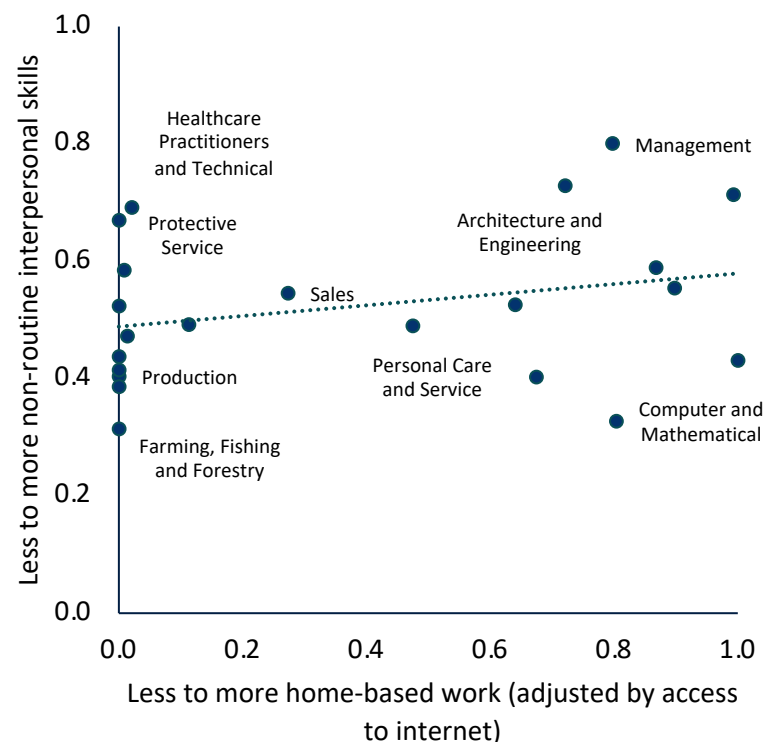
The ability to WFH and the requirement for non-routine cognitive and socio-behavioral skills are positively linked…

Ability to work from home and importance of non-routine cognitive analytical skills by occupational groups

Ability to work from home and importance of non-routine interpersonal skills by occupational groups

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia
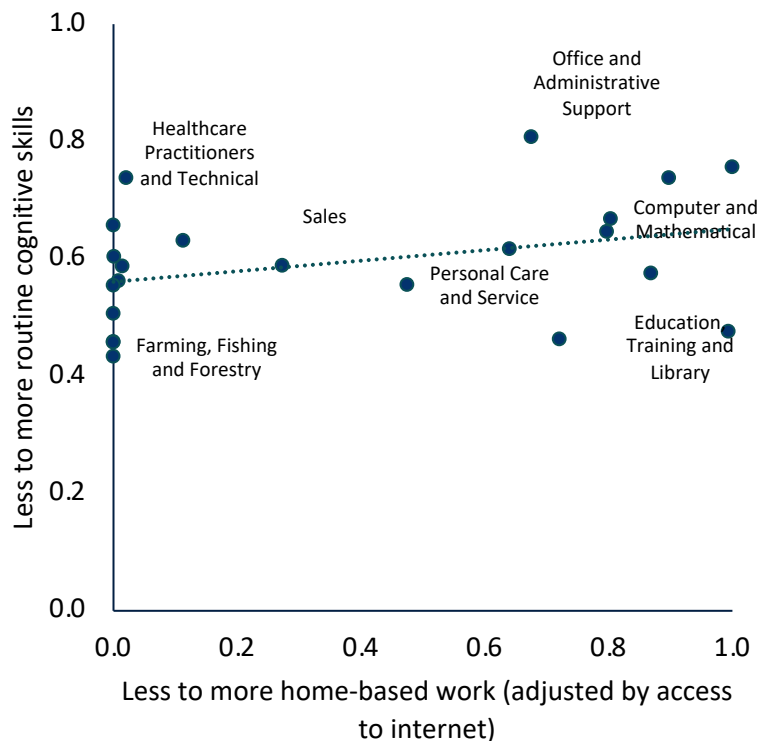
Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

...with non-routine cognitive analytical skills being the most important correlate of being able to work from home

Ability to work from home and importance of routine cognitive skills by occupational groups

Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Change in probability of home-based work
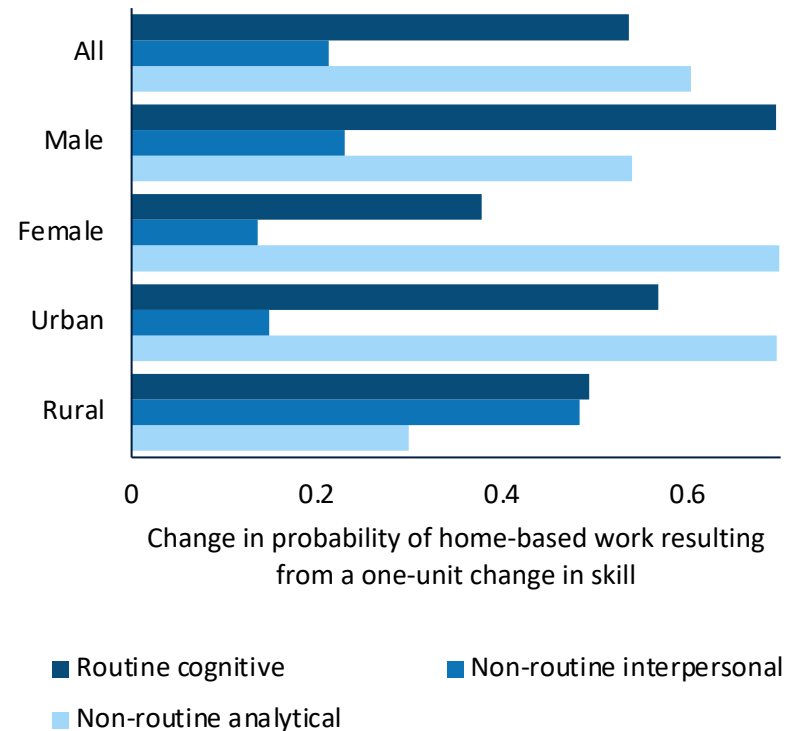
Source: Authors' calculations based on Dingel and Neiman (2020), Garrote Sanchez et al. (2020), O*NET and Department of Statistics Malaysia

Conclusion

- Workers most vulnerable to COVID-19 are also most vulnerable overall, and they include:
  - low-income earners
  - workers with relatively low levels of educational attainment,
  - own account and unpaid family workers, and
  - workers from rural areas.

- These kinds of workers also tend to have informal jobs unprotected by formal social insurance

- Further rounds of cash transfers targeted at the B40 might be necessary as long the crisis persists

- There is an increased and urgent need for skills-building programs that can enhance workers' non-routine cognitive analytical skills and non-routine interpersonal skills

THANK YOU!

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