

Datathon Research

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Focus Area: Jobs and Social Protection

- Contributions
 - Decent work and economic growth
 - Sustained, inclusive and sustainable economic growth. Full and productive employment and decent work for all
 - Reduced inequalities
 - Reduce inequality within and among countries

Why do we need to solve this issue?

How urgent and serious is it? (This part will be shown by using dashboard to visualize everything)

Labor Market Structural Issues

- Unemployment is low because of the definition which counts anyone who works just one hour in the previous week as being employed.
- Average wages have not recovered above 2019 levels and the extension of the minimum wage exemption, which could cover 1.8 million people, will also hit incomes.
- Malaysia remains stuck in a low-wage and low-skill economy because of the work offered domestically, and not because of the talent available.
- Economic recovery for the manufacturing sector was quite uneven

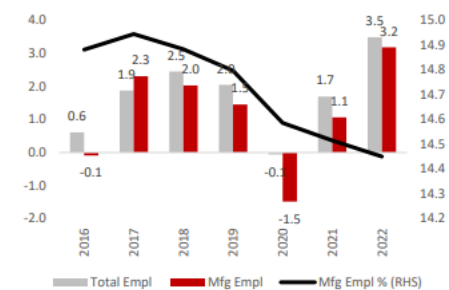
Labor Market Structural Issues

- The misalignment between the skill-sets provided by educational institutions and what's required in the labor market, or the fact that the economy does not create jobs that resemble the skills-set of certain individuals. Manufacturing sector was quite uneven
- Youth unemployment rate in Malaysia continued on a double-digit rate.
- Malaysians are reluctant to take many jobs because the salaries are too low, often below living wages and even minimum wages are not paid. Terms and conditions of the jobs are also very poor, he said.

MIDF Research

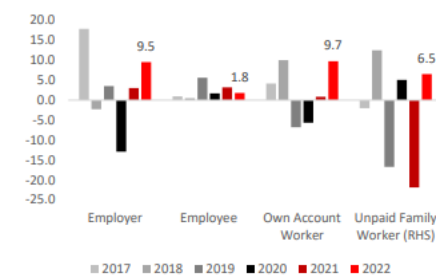
- Skill mismatch is prevalent in Malaysia given that skill-related underemployment shares to total employment at 11.9% in 2022, slightly lower than record high 12.4% in 2020.

Chart 1: Total vs. Manufacturing Employment (YoY%)



Source: DOSM, MIDFR

Chart 2: Employment by Type (YoY%)



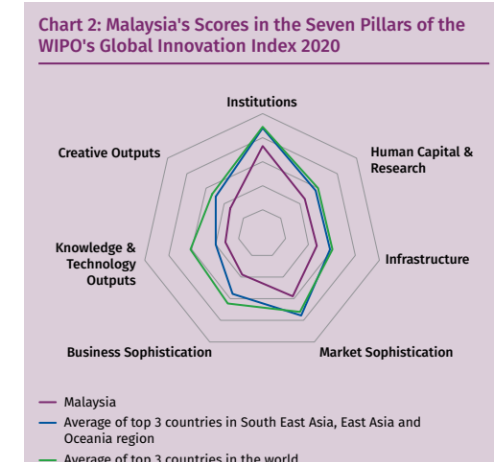
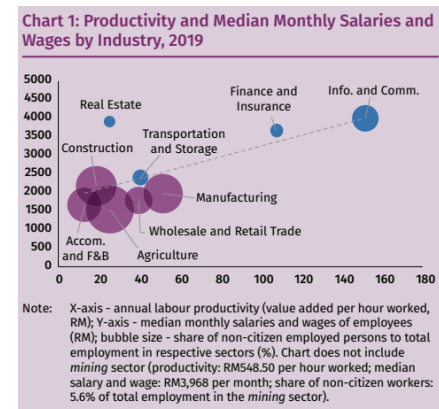
Source: DOSM, MIDFR

A Fleeing Workforce

- Malaysian workers are looking abroad for better employment, and one of the reasons is the social injustice many experience
- Better career prospects and better remuneration were other reasons workers were leaving, with the low salary rate in the country continually making it difficult for companies to retain professionals.
- Based on meritocracy, unlike in our ecosystem, which is sometimes based on connections or who you know

The Post Covid-19 World (MUST USE)

- Prevalence of the low-cost production model and high dependence on low-skilled foreign workers discourages productivity enhancements, depresses wages, and encourages the creation of low-skilled jobs.
- Unchecked reliance on low-skilled foreign workers potentially introduces distortions to wage-setting mechanisms, leading to a suppression of local market wages



The Post Covid-19 World

- Malaysia performed below average in criteria such as productivity, pervasiveness of tertiary education, and researcher concentration
- Low creation of high-skilled jobs, which has lagged behind the supply of graduates
- One-third of graduates end up in mid-skilled and low-skilled occupations.
- Significant mismatches between skills required by industry and those that workers possess
- Resulted in weak labour market outcomes, especially for youth and graduates. Historically, the youth unemployment rate has consistently been two to three times higher relative to overall unemployment

How do we solve this issue?

A Data Solution (This section involve building model, and proposing large scale architecture for deployment)

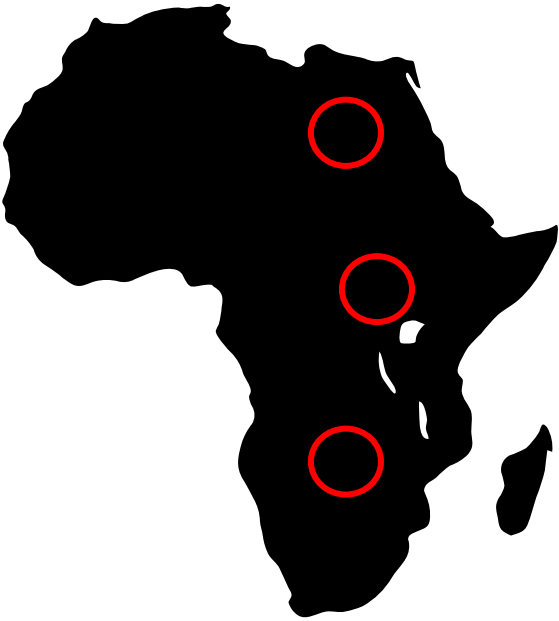
Data Solution

- To predict periods of high unemployment (time series) – using hybrid model and deep learning
- To add geospatial element:
 - Recommendation system for job that is feed with geospatial feature related to states in Malaysia. Able to visualize the output on Map (Details can be fine to district of state level)
 - Pipeline approach: time series prediction (possible to split into classes of sector?) Thus, the recommendation system can come into play
- [\(PDF\) A Map-based Job Recommender Model \(researchgate.net\)](#)
- [Geo-based recommendation system utilising geo tagging and K-means clustering | SpringerLink](#)

Data Solution

- Current job findings site seem to not have such as issue be it indeed, linkedin, hiredly and so on. Proposing a **map-based job recommender model with geospatial and socio-economic sense**.
- Other solution involve government and institutions effort to improve or bring up social protection programs and policy making (read BNM report for ideas)
- [\(PDF\) A Map-based Job Recommender Model \(researchgate.net\)](#)
- [Geo-based recommendation system utilising geo tagging and K-means clustering | SpringerLink](#)

Design (Idea)



Algorithm

User input

- Fetch location,
- Analyze location characteristics (get features)
- ...
- ...
- Suggest job that might be needed in a particular region
- Give statistics such as the total employment in the area, total offices, skills trend and so on

Way Forward

Scaling The Product

Global Deployment

- Time series prediction can be scale to any country as long as with data
- “map-based job recommender model with geospatial and socio-economic sense” might be integrate with language model such as Llama, GPT and Bard or other kind of integration
 - To optimize workforce distribution
 - Fill skills gap
 - Data-driven policy making
 - Talent Retention
 - Social inclusion, Efficient Use of Government Resources ...