



KEMENTERIAN EKONOMI
JABATAN PERANGKAAAN MALAYSIA

INTERREGIONAL GRADUATE MIGRATION AND KNOWLEDGE FLOW ACROSS STATES IN MALAYSIA

Dr. Diana Abdul Wahab

Dept. of Decision Science, Faculty of Business and Economics, Universiti Malaya

PERSIDANGAN **STATISTIK**
MALAYSIA **KE-10**

“Looking Beyond GDP: Towards Social Well-being and Environmental Sustainability”

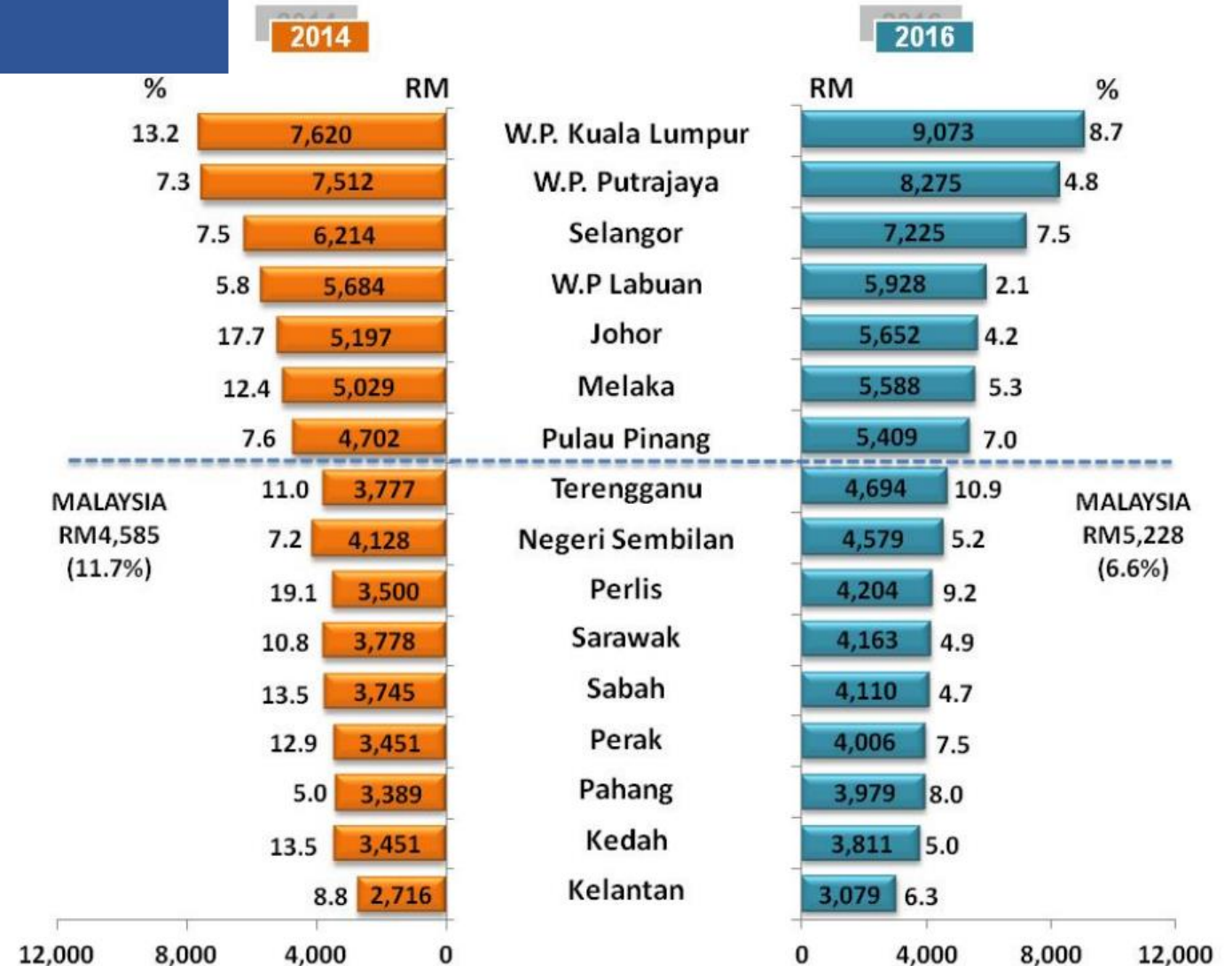
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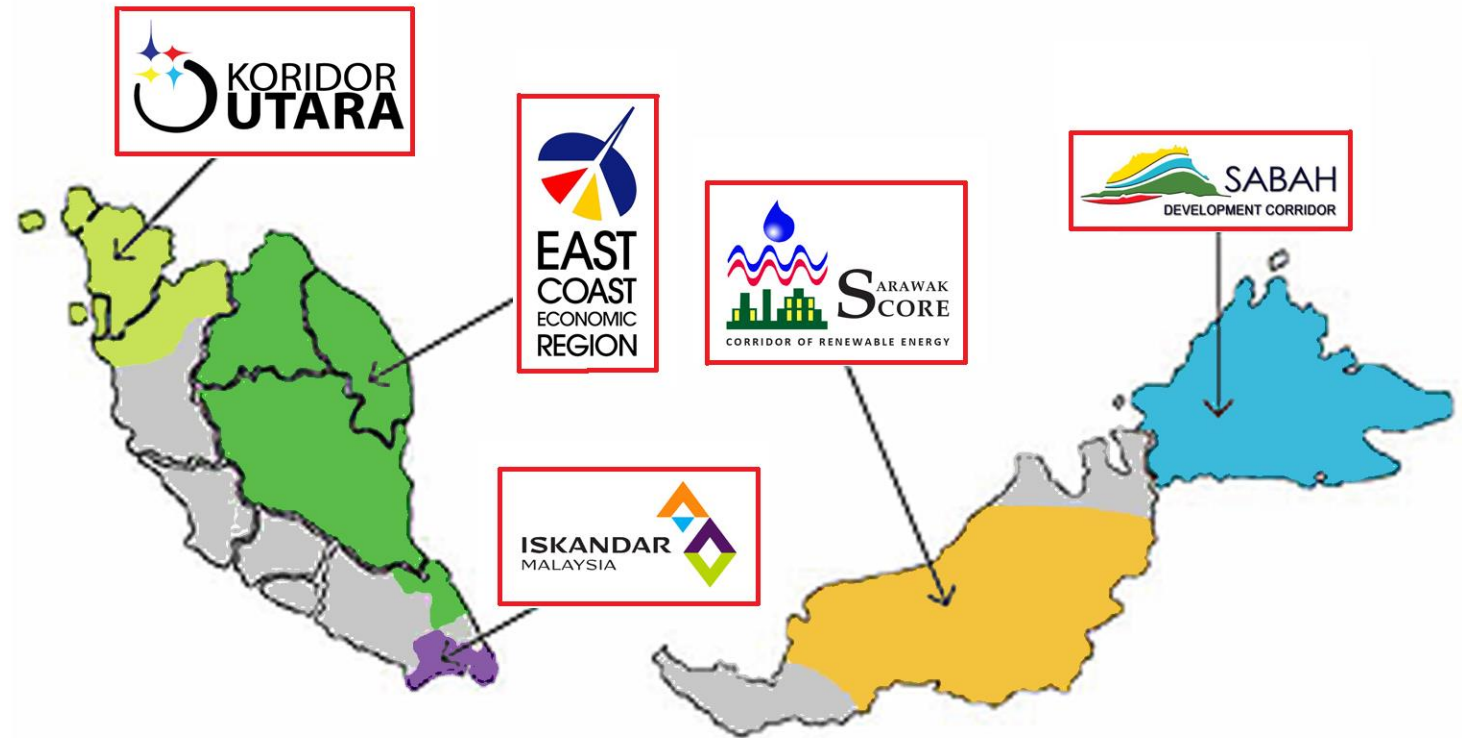
Geographic imbalance

- Geographic balance for regional growth - major focus area.
 - Central region has been growing more rapidly (population, economic growth).
 - Monthly household income in the central region consistent at the top of the distribution.



Geographic imbalance

- Redirecting employment opportunities outside of the central regions.
- Regional disparity remains wide due to the concentration of certain economic activities:
 - the richer states - manufacturing sectors.
 - the poorer states in agriculture.



Geographic imbalance

- Disproportionate inflows of capital investment where the foreign direct investment inflows were more focused on developed states.
- Most of Malaysia's plans' strategies and policies are also found to have been benefiting Selangor in terms of attracting investments to the state further proliferating its growth.
- This study aims to provide explanations for the migrations of high skilled workers in Malaysia that contributes to the regional imbalance of skills.



- 2019 Tracer Study survey conducted by MOHE:
 - graduates' ability (CGPA, MUET, course of study);
 - graduate's background (family income, state of origin); and
 - job information (employment status, job level, job group, and location).
- The 2019 wave consists of 124,919 first degree graduates.
- We remove the unemployed, disabled graduates, international students (who mostly went back to their respective countries), or Malaysian graduates who work abroad.
- Further data cleaning to remove outliers and missing values leaves our sample for this study at 69,715.



Method

- We observe graduate's state of origin and state where they found their job.
- To reduce the complications of reporting that would involve 256 intersections, we categorize the states into a "high-income state" and "low-income state".
 - "high-income state": not only based on median income but also because they are geographically close to each other that would facilitate the spill over of skills in nearby locations.
- The choice is also due to the fact that most research public university and private universities are located in these states.
- The urbanization rate for WP Kuala Lumpur and WP Putrajaya is 100% while Selangor 94.5%.

Method

- First, we show graduate interregional migration patterns across the states to highlight the fact of a huge influx of graduates moving toward high-income states.
- Then we map each state with the monthly household income and the graduate's income to provide a proposition that graduate's migration might be motivated by income.
- To test the proposition, we used a regression model to examine the impact of migration on graduate's income. We fit the model $y = \beta_0 + \beta_1 \text{ migration} + \beta_j x_j + \varepsilon$
 - where x_j consists of migration pattern and control variables such as CGPA, MUET qualification, job status, job level, and socio-demographic variables such as being a male, age, and family income.

Table 1: Graduate interregional migration pattern

| (1) State | (2) Origin | (3) Work | (4) Migrated out | (5) Migrated in |
|-----------------|---------------|-------------|------------------------|-----------------------|
| Johor | 7690 | 6596 | 2088 | 994 |
| Kedah | 4497 | 2686 | 2257 | 446 |
| Kelantan | 3184 | 1513 | 1793 | 122 |
| Melaka | 2324 | 1834 | 905 | 415 |
| Negeri Sembilan | 2935 | 1757 | 1734 | 556 |
| Pahang | 3118 | 1779 | 1699 | 360 |
| Pulau Pinang | 4564 | 5760 | 933 | 2129 |
| Perak | 5090 | 2718 | 2774 | 402 |
| Perlis | 473 | 291 | 253 | 71 |
| Selangor | 19292 | 21899 | 6187 | 8794 |
| Terengganu | 2441 | 1539 | 1144 | 242 |
| Sabah | 2752 | 2121 | 748 | 117 |
| Sarawak | 3386 | 2794 | 688 | 96 |
| WPKL | 7408 | 15317 | 2243 | 10152 |
| WPL | 118 | 180 | 32 | 94 |
| WPP | 443 | 931 | 225 | 713 |
| N | 69715 | 69715 | 25703 | 25703 |

Results

Table 2: Graduate's employment and migration pattern sorted by the monthly gross salary by states.

| State | Monthly gross salary | Graduate's mean income | Graduate's median income | Rank |
|-----------------|----------------------|------------------------|--------------------------|------|
| WPKL | 10549 | 3600.63 | 2438.43 | 1 |
| WPP | 9983 | 2004.89 | 1840.17 | 2 |
| Selangor | 8210 | 2690.16 | 2200.27 | 3 |
| WPL | 6726 | 2125.84 | 2025.28 | 4 |
| Johor | 6427 | 2162.87 | 1961.12 | 5 |
| Pulau Pinang | 6169 | 2625.39 | 2303.85 | 6 |
| Melaka | 6054 | 2060.76 | 1805.35 | 7 |
| Terengganu | 5545 | 2200.83 | 1332.84 | 8 |
| Kedah | 5522 | 1895.73 | 1447.92 | 9 |
| Negeri Sembilan | 5055 | 1985.69 | 1779.13 | 10 |
| Perlis | 4594 | 4387.61 | 1352.00 | 11 |
| Sarawak | 4544 | 2793.55 | 1744.52 | 12 |
| Pahang | 4440 | 1809.90 | 1454.10 | 13 |
| Perak | 4273 | 1979.88 | 1651.35 | 14 |
| Sabah | 4235 | 2316.85 | 1463.21 | 15 |
| Kelantan | 3563 | 1461.24 | 1206.57 | 16 |
| Malaysia | 5873 | 2671.75 | 2093.81 | |

Table 3: Major migration patterns.

| Mobility | N | Percentage |
|-------------|--------|------------|
| high-high | 7,677 | 11.0% |
| high-low | 978 | 1.4% |
| low-high | 11,982 | 17.2% |
| low-low | 5,066 | 7.3% |
| remain high | 18,488 | 26.5% |
| remain low | 25,524 | 36.6% |
| N | 69,715 | |

Results

Figure 1: Major migration patterns across economic sectors.

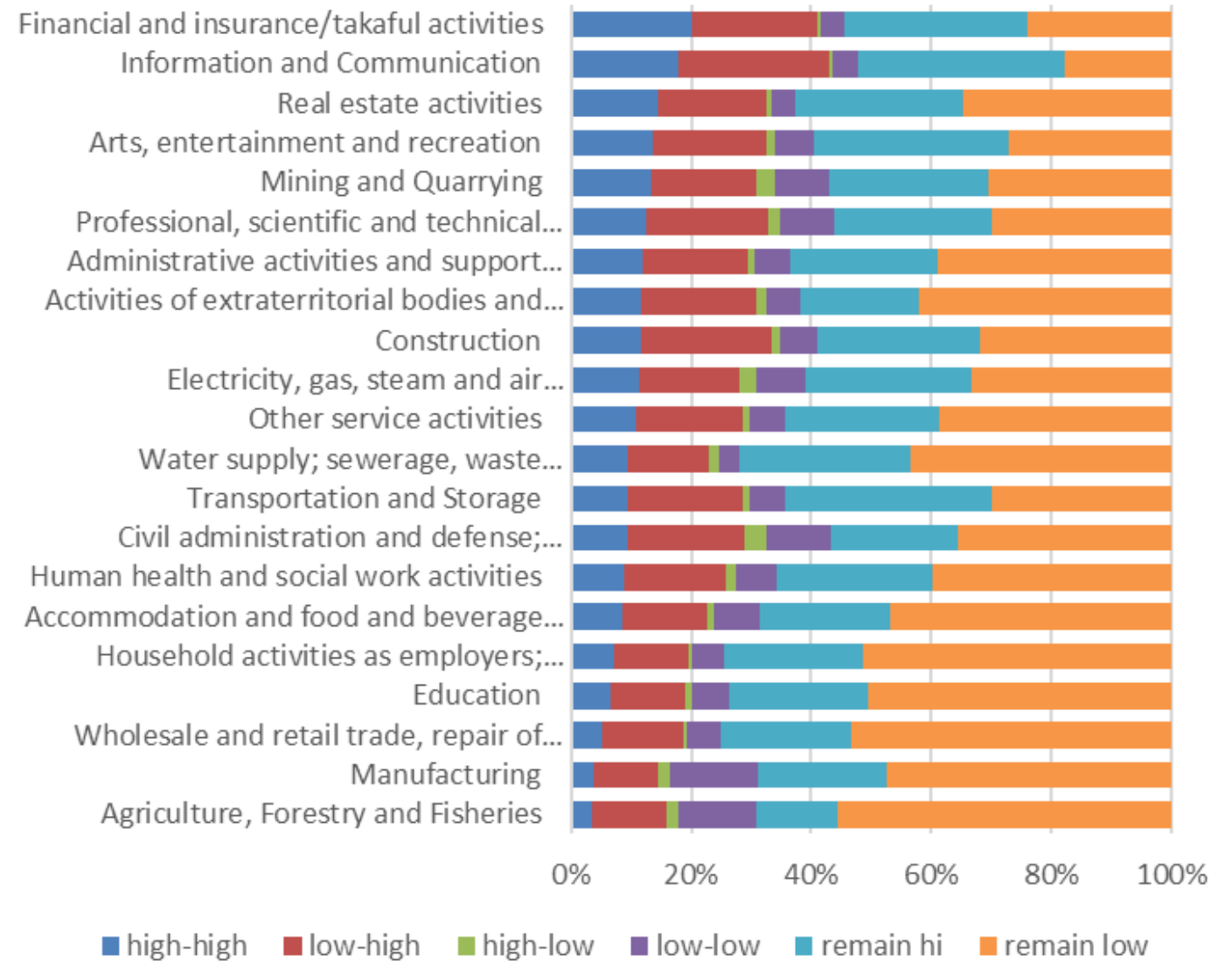


Table 4: The estimated regression model on the impact of different migration patterns on income.

| | Coef | SE |
|--------------------------------|-------------|----------|
| Constant | -12422.3*** | (1011.5) |
| high-high | 860.6*** | (236.4) |
| high-low | 1284.3* | (588.1) |
| low-high | 474.9* | (191.8) |
| low-low | 294.9 | (258.3) |
| remain high | 500.2** | (170.9) |
| N | 53262 | |
| Standard errors in parentheses | | |
| * p<0.05 ** p<0.01 *** p<0.001 | | |

Results

Table 5: The estimated probit model on the impact of migration on job-education match.

| | Coef | SE |
|--------------------------------|----------|----------|
| high-high | 0.121*** | (0.0207) |
| high-low | 0.195*** | (0.0521) |
| low-high | 0.172*** | (0.0167) |
| low-low | 0.185*** | (0.0227) |
| remain high | 0.112*** | (0.0149) |
| N | 53243 | |
| Standard errors in parentheses | | |
| * p<0.05 ** p<0.01 *** p<0.001 | | |

Conclusion

- This paper delves into interregional migration among young, high-skilled workers in Malaysia, particularly focusing on the influx of graduates into high-income states such as WP Kuala Lumpur, Selangor, and WP Putrajaya.
- The main drivers of migration are remuneration and job qualification match, resulting in increased earnings and reduced job mismatches.
- However, this trend leads to regional imbalances, contributing to issues like high living costs, reduced quality of life, overdevelopment, and overpopulation.
- Migration towards high-income states exacerbates traffic congestion and wastage of resources due to inadequate public transportation.
- Meanwhile, the departure of high-skilled workers from their home states triggers brain drain, hindering economic growth and exacerbating social problems.

Conclusion

- Central region universities amplify this migration pattern.
- Graduates from low-income states move to high-income states, with few reversals.
- Sectoral preference is also evident, as migration corresponds with above-average income sectors like finance and ICT.
- Few move to low-income states, only if offered high-paying jobs aligned with their qualifications.
- Remaining in low-income states is tied to low-paying sectors like agriculture and retail.



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Conclusion

- Understanding these migration trends is pivotal for addressing economic disparities across Malaysian states.
- The labor market's overreliance on low-skilled foreign workers suppresses wages and productivity.
- Policies should focus on generating high-skilled employment opportunities to match the surplus of graduates.
- The imbalance between graduates and available jobs highlights the need for more high-skilled positions in Malaysia's labor market.



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THANK YOU

diana.abdwahab@um.edu.my



@StatsMalaysia



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