



PRESENTATION



# ANALYSIS OF TALENT MIGRATION AND ITS IMPACT ON THE INDUSTRY GROWTH IN MALAYSIA

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BIG DATA ANALYTICS

# BACKGROUND

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Malaysia has become a popular destination for professionals from across the world who are migrating abroad. The economy and industry of the nation are significantly impacted by this trend. The flow of talent into and out of the sector is a major factor in how it develops and grows.

Understanding the patterns and trends in talent migration is essential for policymakers, businesses, and stakeholders. Analyzing migration data alongside industry growth rates provides insights into the interplay between human capital movement and economic development.

This analysis aims to uncover the relationship between talent migration and industry growth, shedding light on potential correlations and influences that could drive strategic decisions in talent management, policy formulation, and industry development. The datasets used for this analysis are sourced from the collaboration between LinkedIn and the World Bank Group, providing comprehensive insights into global talent migration trends and economic indicators.



# DATA SCIENCE QUESTIONS

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1. What are the proportions of migration for different regions into and out of Malaysia?
2. Which countries contribute the most to net migration into Malaysia, and what is the income level of these countries?
3. Which countries have the highest net migration out of Malaysia, and what is the income level of these countries?
4. How does the net migration rate into and out of Malaysia vary from 2015 to 2019?
5. How have the growth rates evolved across various industry sectors in Malaysia from 2015 to 2019?
6. Is there a correlation between the net country migration rate in Malaysia and the growth rates of industry sectors from 2015 to 2019?
7. What is the trend in the net migration rate of industry sectors in Malaysia from 2015 to 2019?
8. Which industry sections exhibit the highest migration rates through out 2015 to 2019?
9. Which industry sections exhibit the lowest migration rates through out 2015 to 2019?
10. How do the migration rates of industries sections compare with their respective growth rates from 2015 to 2019?



# OBJECTIVES

- 1. Regional Migration Proportions and Patterns:
  - Analyze and visualize the proportions of migration into and out of Malaysia across different regions or countries.
  - Identify the regions or countries contributing the most to net migration into and out of Malaysia.
- 2. Country Contributions to migration & their Income Level:
  - Determine the top countries contributing to net migration into Malaysia and assess their income levels.
  - Identify the countries with the highest net migration out of Malaysia and explore their income levels.
- 3. Temporal Analysis of Net Migration:
  - Analyze the variation in net migration rates into and out of Malaysia from 2015 to 2019.
  - Identify trends, spikes, or declines in migration rates over this period.
- 4. Industry Sections Growth Rates:
  - Explore the evolution of growth rates across various industry sectors in Malaysia from 2015 to 2019.
  - Visualize and analyze the trends and changes in growth rates for each sector over time.
- 5. Correlation Between Country Migration and Industry Growth:
  - Investigate the potential correlation between the net country migration rate in Malaysia and the growth rates of industry sectors.
- 6. Trend Analysis of Industry Migration Rates:
  - Track the trend in the net migration rate of industry sectors in Malaysia from 2015 to 2019.
  - Visualize the changes and variations in migration rates for different industry sectors.
- 7. Identifying industries with the highest & lowest migration:
  - Determine which industry sections exhibit the highest and lowest migration rates throughout 2015 to 2019.
  - Compare and contrast the migration rates among different industry sectors.
- 8. Comparison of Migration Rates and Growth Rates for industry sections:
  - Compare the migration rates of industry sectors with their respective growth rates from 2015 to 2019.
  - Visualize and analyze any correlations or divergences between migration and growth rates.



# METHODOLOGY

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## DATA COLLECTION



**Data Extraction:** Gather economic indicators for Malaysia, focusing on net migration rates, income levels and industry growth.

**Data Preprocessing:** Handle missing values, standardize formats, and merge datasets for compatibility.

## EXPLORATORY DATA ANALYSIS



**Examining & Exploring:** Migration Proportions, Top Contributing Countries, Industry Growth and Temporal Analysis.

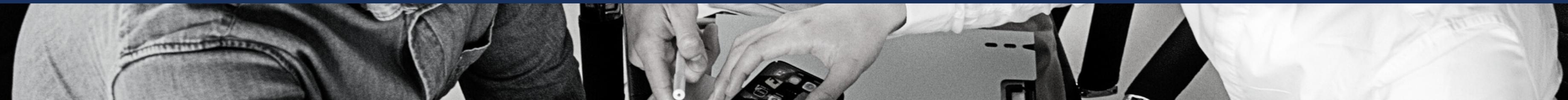
## STATISTICAL ANALYSIS AND VISUALIZATION



**Trend Analysis:** Determine trends in net migration rates for industry sectors in Malaysia over the specified period.

**Identification of High and Low Migration Industries:** Identify industry sectors exhibiting the highest and lowest migration rates.

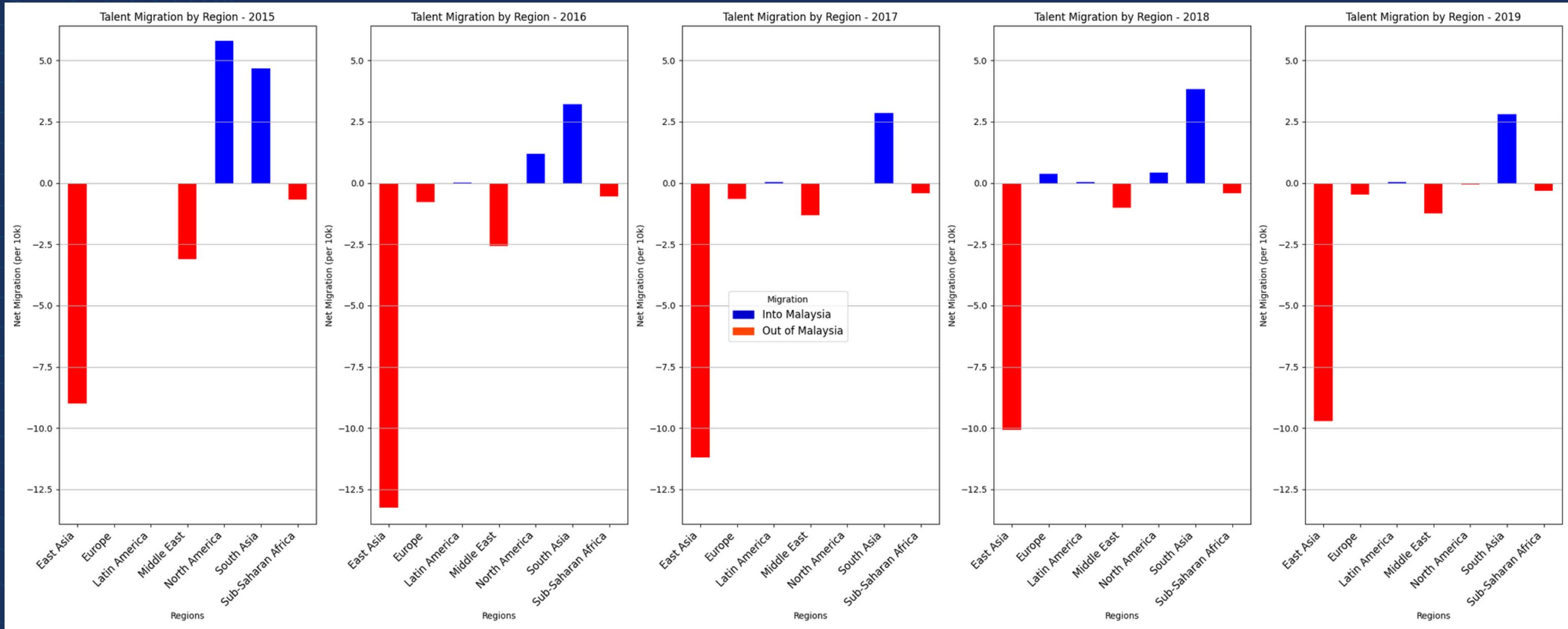
**Comparison of Migration Rates and Growth:** Compare migration rates of industry sectors with their respective growth rates to unveil potential relationships.



# RESULTS & VISUALIZATIONS OF OBJECTIVES



# 1. REGIONAL MIGRATION PROPORTIONS AND PATTERNS:



**Regional Imbalance:** A consistent trend of East Asia contributing the most outbound migration and South Asia being the primary contributor to inbound migration might indicate specific economic, cultural, or professional ties between these regions and Malaysia.

**Shifting Trends:** The decrease in North America's contribution to inbound migration suggests changing dynamics or preferences in talent movement from that region to Malaysia.

**Overall Negative Net Migration:** The consistent negative net migration (more migration out of Malaysia than into it) across all years suggests a recurring trend.

## 2. COUNTRY CONTRIBUTIONS TO MIGRATION & THEIR INCOME LEVEL:

### Patterns in Migration Flow

**Distinct Attractiveness:** While India, the United States, and the United Kingdom contribute significantly to inbound migration, Singapore stands out for its substantial outbound migration from Malaysia.

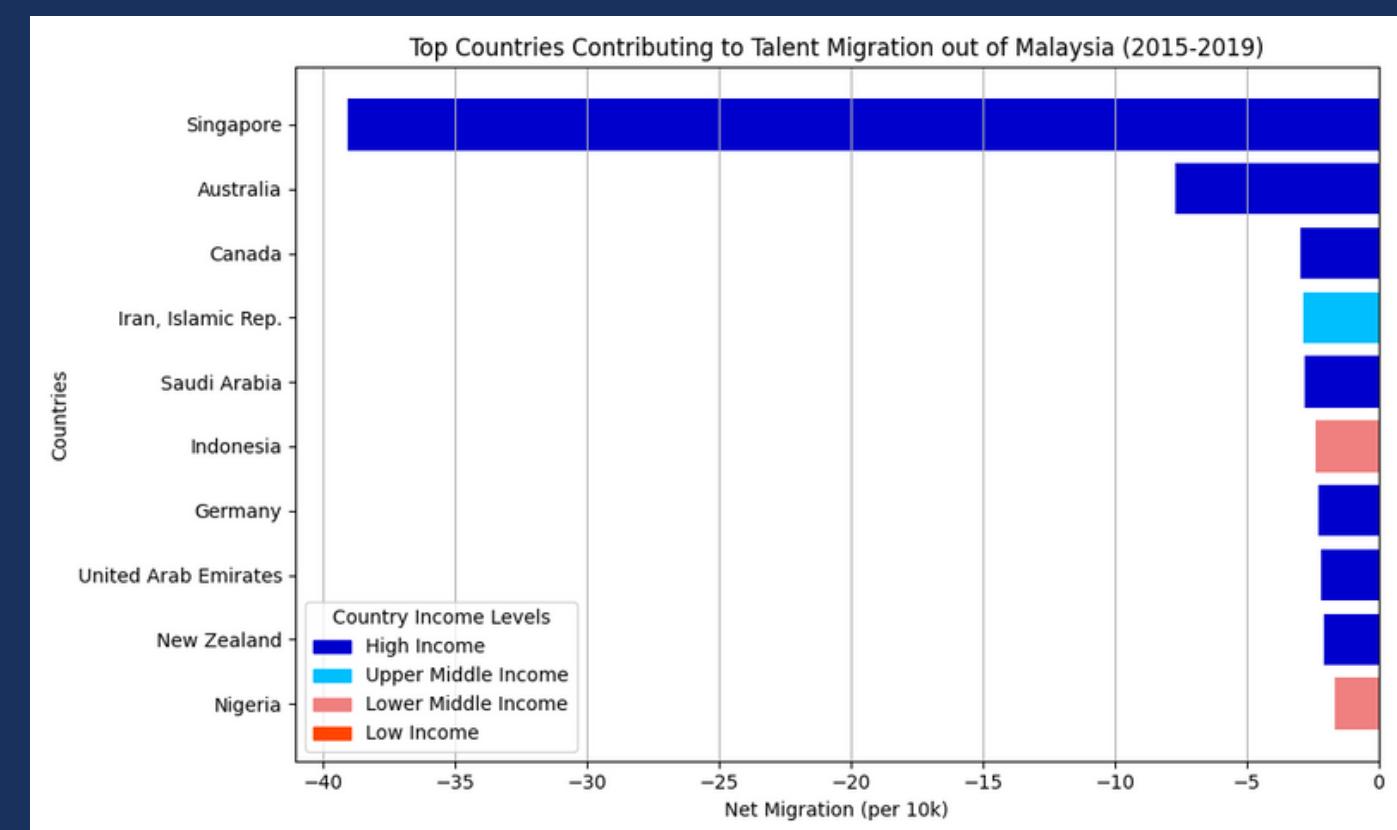
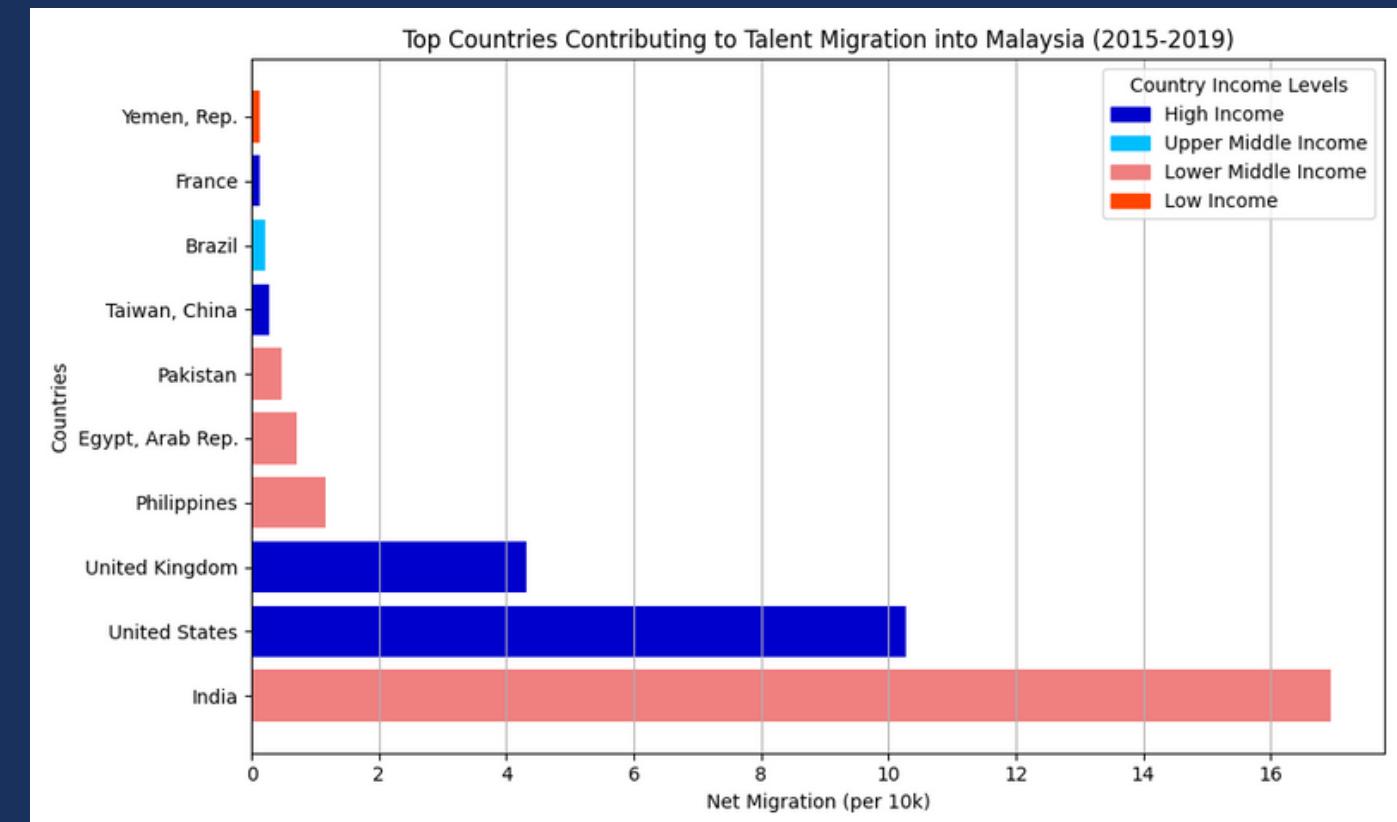
**Regional Influence:** Geographical proximity and regional ties could contribute to the prominence of Singapore in outbound migration and India's dominance in inbound migration.

**Inbound Migration Into Malaysia:** The top countries like India, the Philippines, Egypt, Pakistan, etc., are predominantly Lower Middle Income countries.

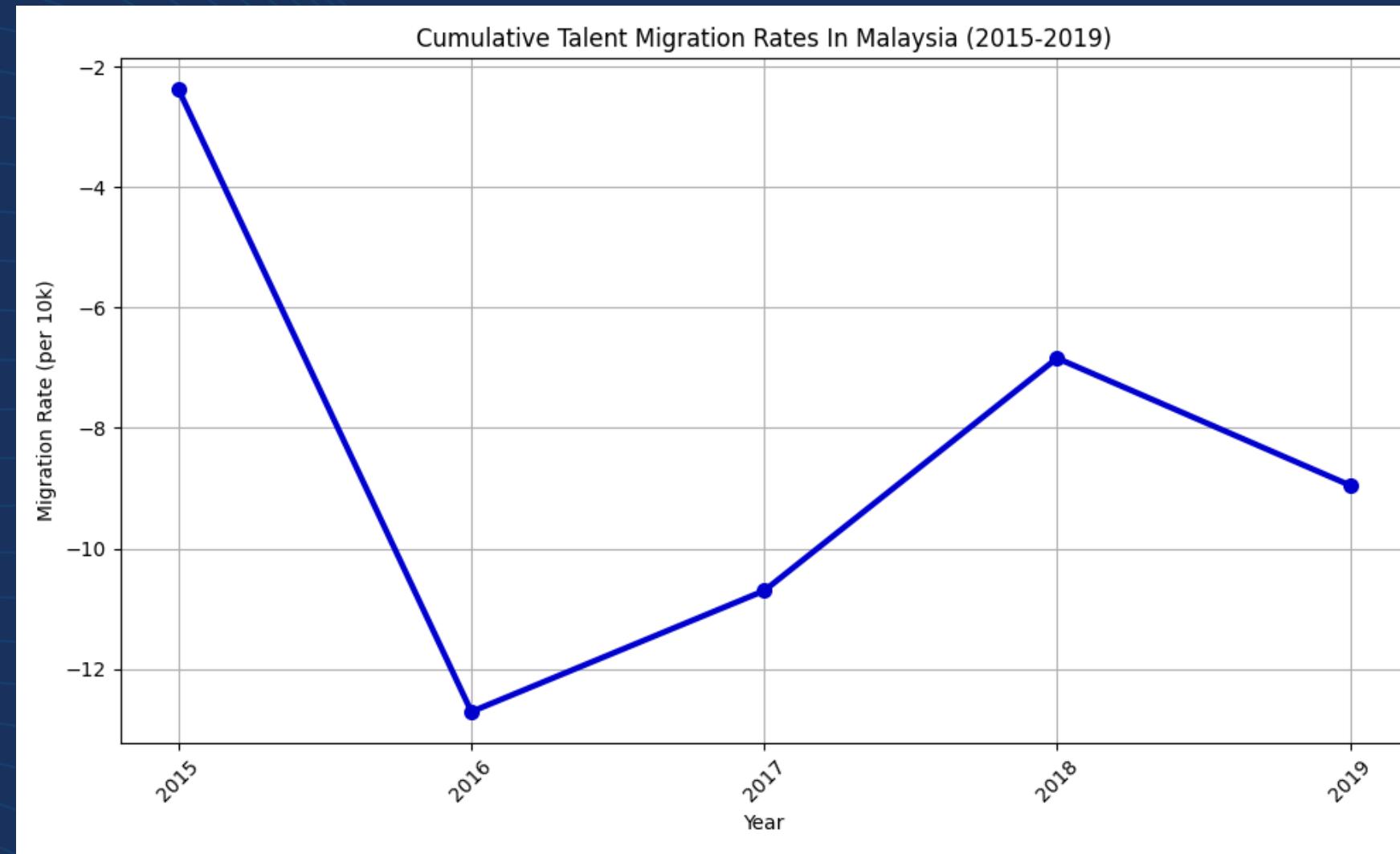
- Individuals migrating from these nations may seek better economic prospects, job opportunities, or improved quality of life in Malaysia, which, as an Upper Middle Income country, might offer relative advancements or opportunities.

**Outbound Migration From Malaysia:** The top countries like Singapore, Australia, Canada, Germany, etc., are mostly High Income countries.

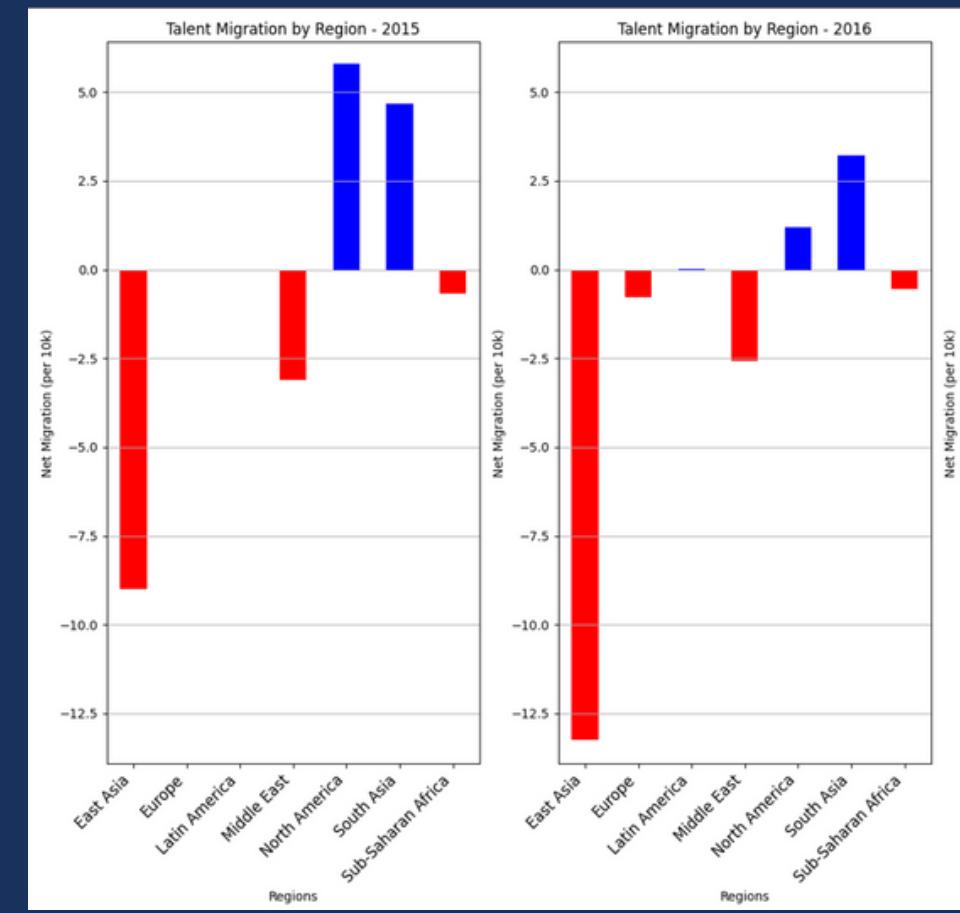
- Individuals migrating from Malaysia to these nations, characterized by higher income levels, might be seeking better economic prospects, higher living standards, advanced healthcare, or educational opportunities.



### 3. TEMPORAL ANALYSIS OF NET MIGRATION:



### Regional Migration Proportions (2015 – 2016)

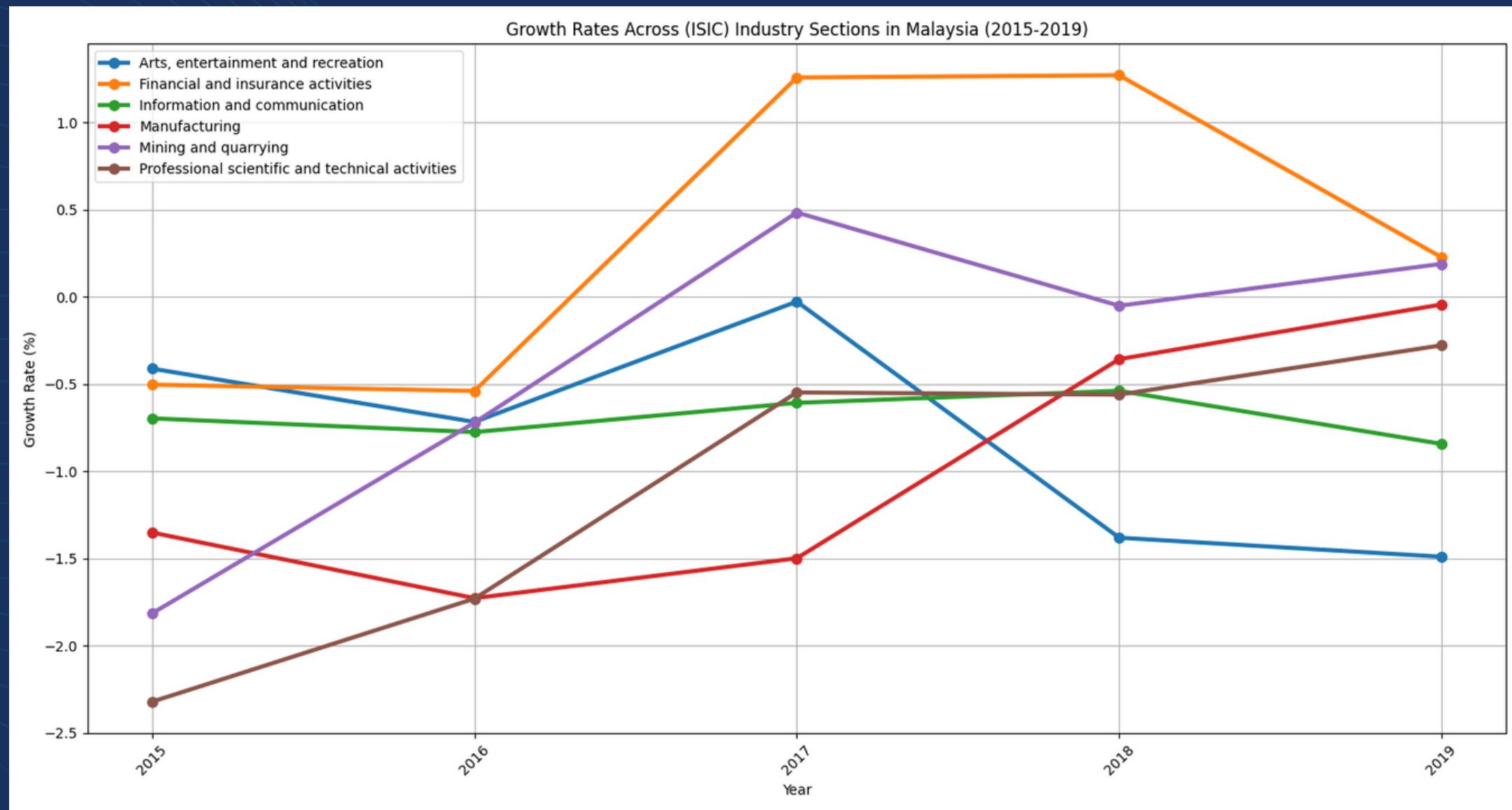


**Consistently Negative Net Migration:** The consistent negative net migration rate (more migration out of Malaysia than into it) from 2015 to 2019 suggests a continuous trend of outbound migration being higher than inbound migration. But from 2016 - 2018 the net migration gradually increased, With a slight drop in 2018 - 2019.

**2015 to 2016 Drop:** The sharp increase in negative net migration from -2.38 in 2015 to -12.71 in 2016 indicates a significant shift, potentially influenced by changes in migration patterns or events during that period.

**Potential Explanation for Drop:** The substantial drop in net migration rates might be attributed to the decrease in migration from North America, which was notably high in 2015 but declined sharply in subsequent years. And by the significant increase in outbound migration to East Asia compared to the previous year. (As seen in the previous visualization earlier of 1. Regional Migration Proportions and Patterns)

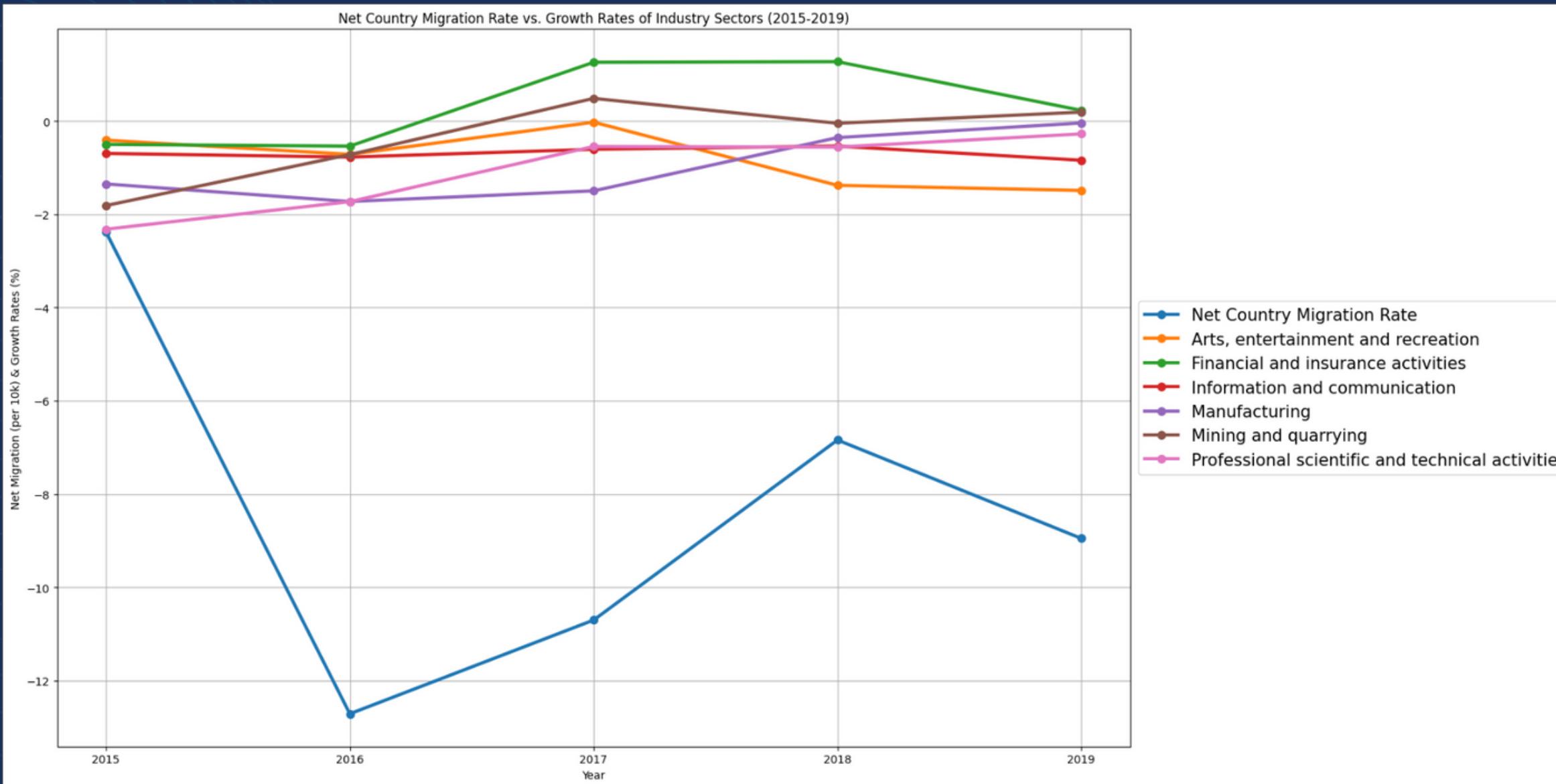
## 4. INDUSTRY SECTIONS GROWTH RATES:



**Initial Growth Rates (2015 - 2016):** In 2015, all industry sectors exhibited negative growth rates, indicating an overall contraction or decline in these sectors during that year. In 2016 all the industry sections still had negative growth rates, where they mostly had a slight increase or decrease in their growth rate.

**Subsequent Trends (2016-2019):** From 2016 to 2018, most industry sectors experienced a shift from negative to positive growth rates, signifying an overall recovery or improvement in these sectors. Whereas from 2018 to 2019 there were slight fluctuations in growth rates. The 'Arts, entertainment and recreation' sector remained on a declining trajectory, exhibiting a continuous decrease in growth rates, indicating a sustained struggle or challenges faced by this industry. The 'Information and communication' sector showcased stability, with minimal fluctuations in growth rates across the years, suggesting a consistent performance or resilience within this sector.

## 5. CORRELATION BETWEEN COUNTRY MIGRATION AND INDUSTRY GROWTH:

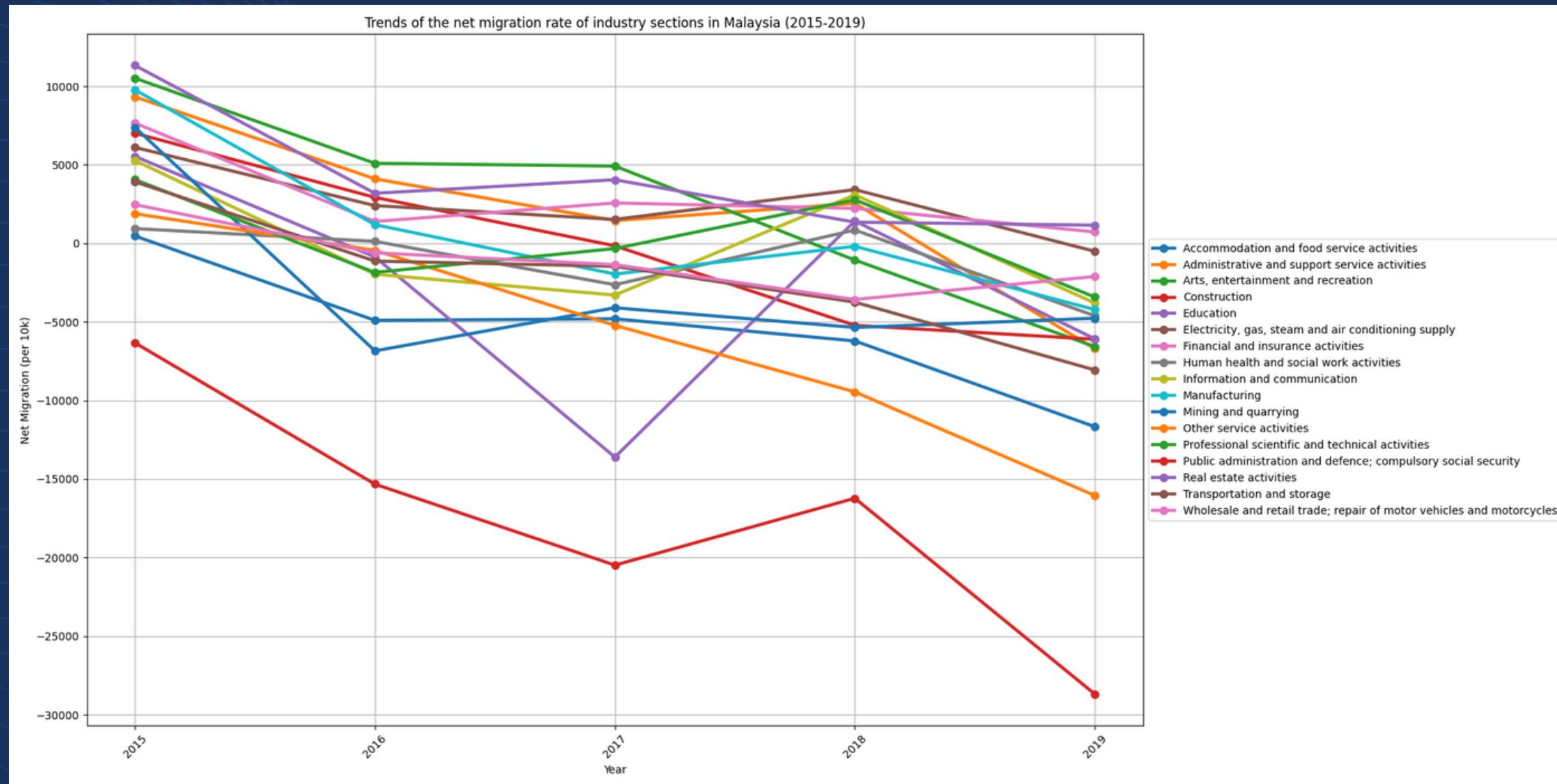


**Migration Trends and Economic Recovery:** The overall recovery in industry sector growth rates from 2016 to 2018 seems to parallel the gradual increase in net migration rates during the same period. This could suggest a potential positive correlation between migration trends and economic recovery.

**Stability and Fluctuations:** The slight drop of migration rates in 2018 to 2019 might have influenced the mixed performance among industry sectors during the same year, although further analysis would be needed to establish a direct causal relationship.

**Migration as an Economic Indicator:** The observed alignment between migration trends and economic recovery in industry sectors hints at migration patterns serving as potential indicators of economic performance or recovery, but with a timeline of only 4 years it is still not a clear correlation.

## 6. TREND ANALYSIS OF INDUSTRY MIGRATION RATES:



**Initial Positive Migration Rates (2015):** In 2015, the majority of industry sectors exhibited positive migration rates, signaling a net influx of individuals into these sectors. Only the "public administration and defence; compulsory social security" sector had a negative migration rate, indicating a net outflow of individuals from this particular sector.

**Progressive Transition to Negative Migration (2016–2019):** Over subsequent years, there was a consistent decline in migration rates across various industry sectors. This transition indicates a gradual decrease in the net inflow of individuals into these sectors, resulting in a net outflow in many sectors by 2019.

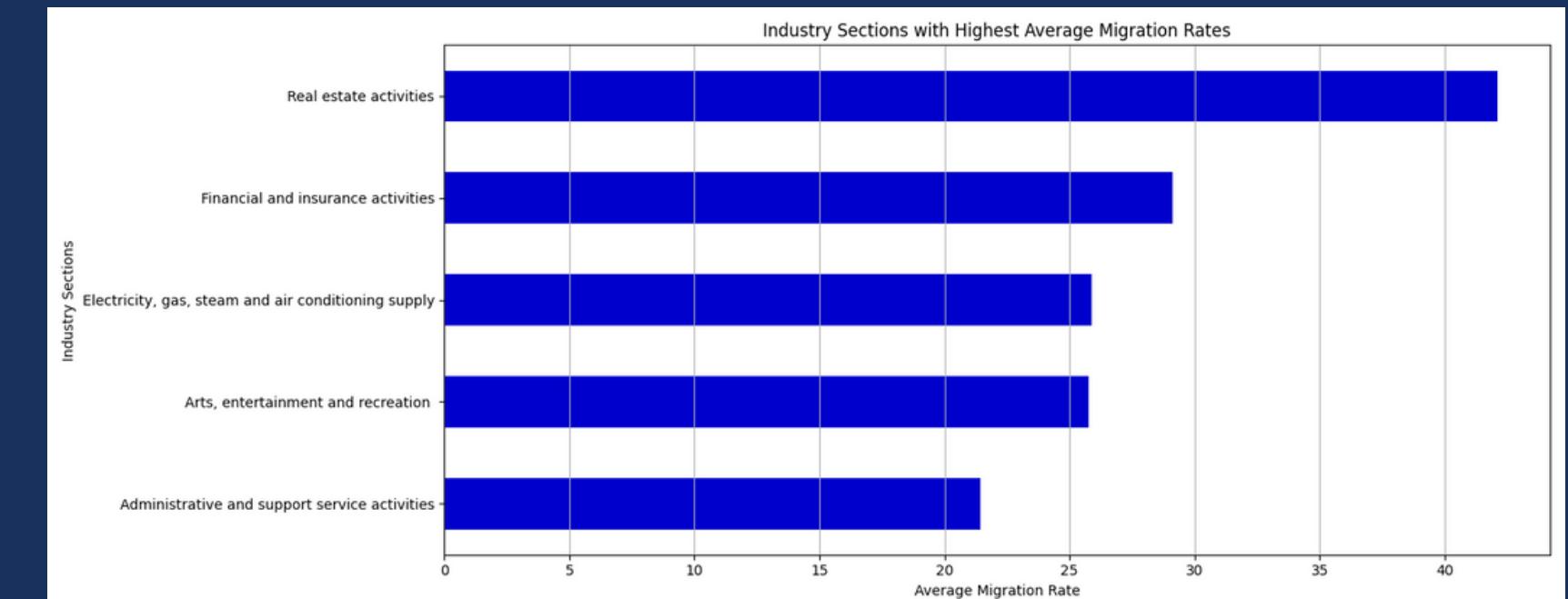
**Sectoral Challenges or Opportunities:** The decreasing migration rates might indicate challenges within specific industries, such as job market competitiveness, skill demand, or overall industry growth.

## 7. IDENTIFYING INDUSTRIES WITH THE HIGHEST & LOWEST MIGRATION:

### Industries with Highest Average Migration Rates:

**Real Estate & Financial Services:** Sectors like 'Real estate activities' and 'Financial and insurance activities' demonstrate high inbound and outbound migration rates. This suggests notable movement of talent in and out of these industries, potentially due to market fluctuations or changing job prospects.

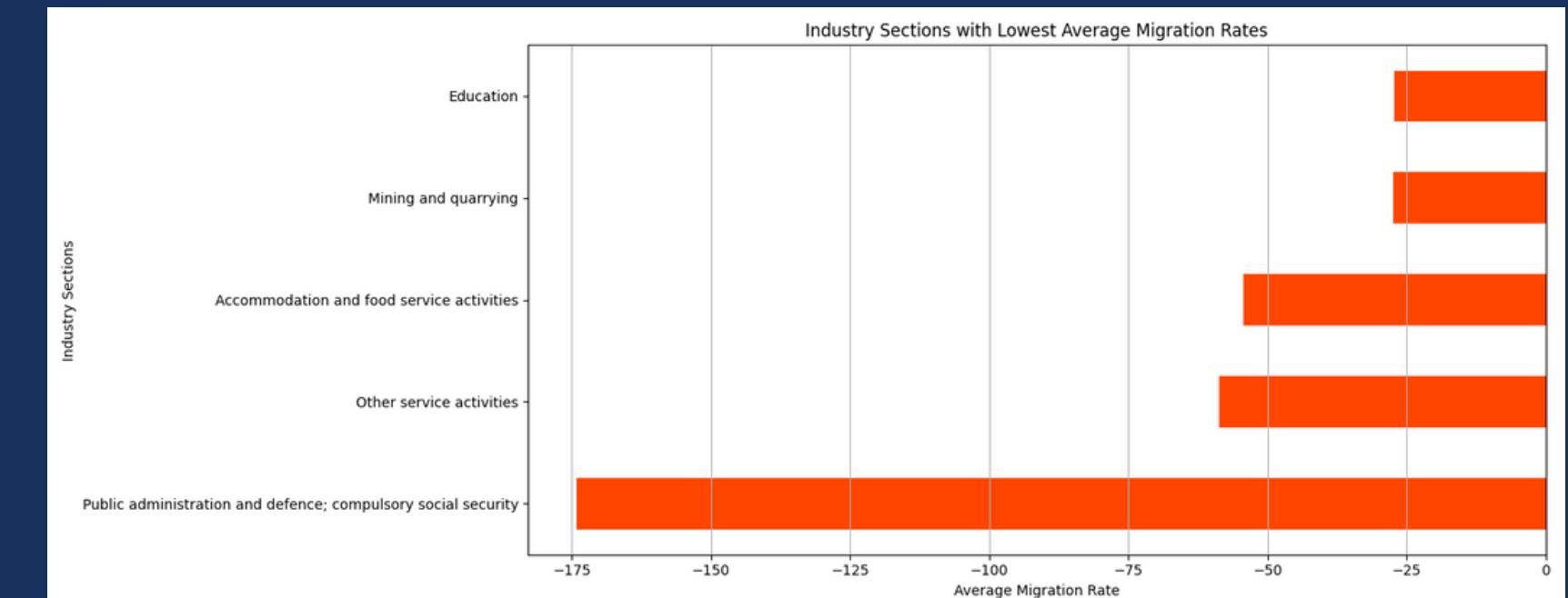
**Diverse Service Sectors:** Industries such as 'Arts, entertainment and recreation', 'Administrative and support service activities', and 'Electricity, gas, steam and air conditioning supply' exhibit considerable migration rates, indicating fluid workforce movements within these sectors.



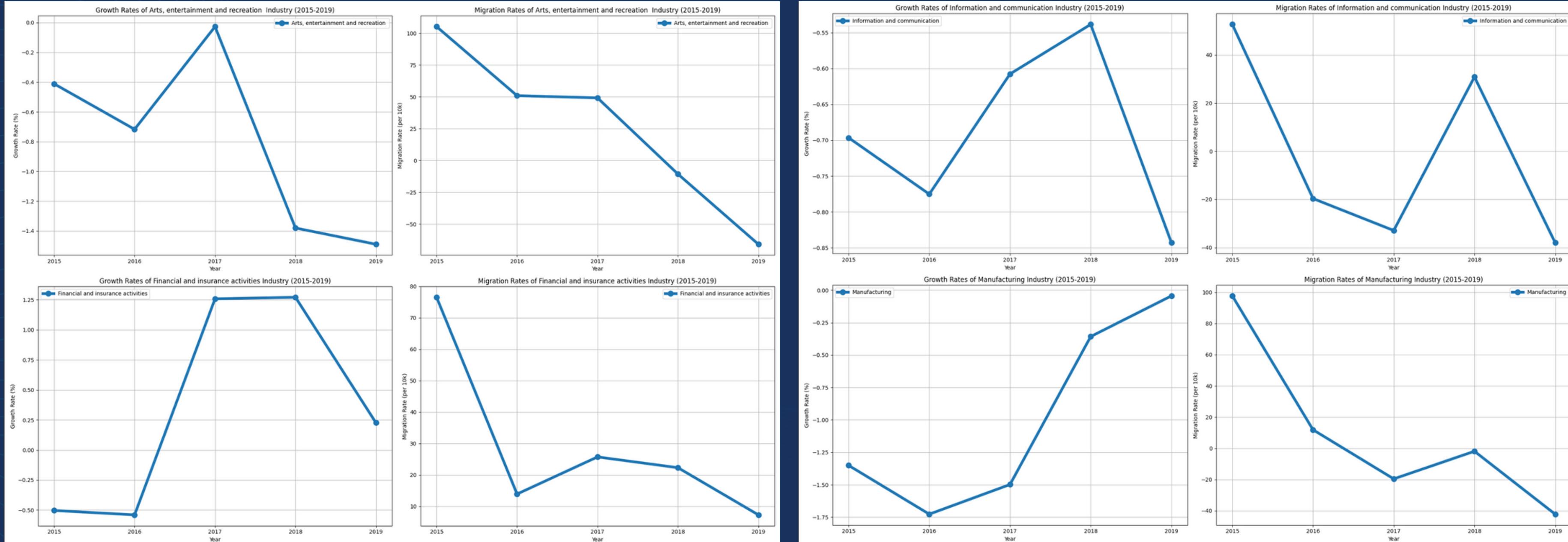
### Industries with Lowest Average Migration Rates:

**Stability in Essential Sectors:** Sectors like 'Public administration and defence; compulsory social security' and 'Education' display the lowest migration rates. This implies a relatively stable workforce, possibly due to the nature of public services or consistent employment patterns within these sectors.

**Service and Extraction Industries:** 'Other service activities', 'Accommodation and food service activities', and 'Mining and quarrying' also show lower migration rates, indicating potential steadiness or fewer workforce transitions in these industries.



## 8. COMPARISON OF MIGRATION RATES AND GROWTH RATES FOR INDUSTRY SECTIONS:



**Partial Correlation Trends:** Some industries initially show synchrony in movement between migration and growth rates. However, these correlations tend to weaken or fluctuate over time, indicating intermittent associations rather than consistent relationships.

**Industry-Specific Dynamics:** Industries like "Manufacturing" showcase diverse trends, suggesting factors other than migration might significantly impact growth rates. This variance highlights unique industry dynamics beyond migration influences.

**Complex Interplay:** While some industries might showcase occasional correlations between migration and growth rates, the erratic nature of these relationships suggests multiple factors influencing industry sectoral growth dynamics.

# CONCLUSION

## TALENT MIGRATION ANALYSIS

The talent migration analysis in Malaysia revealed substantial trends in migration patterns over the years. It showcased a consistent negative net migration, indicating higher outbound migration compared to inbound. Regional disparities highlighted East Asia's dominance in outbound migration and South Asia's significance in inbound migration. Notable shifts in migration from North America and East Asia influenced the overall trend, suggesting changing preferences or dynamics in talent movement.

The analysis of country contributions to migration indicated distinct patterns between inbound and outbound migration. Lower Middle Income countries, such as India, showed prominence in contributing talent into Malaysia, while High Income countries, exemplified by Singapore, stood out in outbound migration from Malaysia. These patterns suggest individuals seek economic or lifestyle improvements across varying income levels, influencing their migration decisions.

## TALENT (COUNTRY & INDUSTRY) MIGRATION'S IMPACT ON INDUSTRY GROWTH

Exploring the impact of talent migration on industry growth revealed intricate relationships. While most industries experienced transitions from negative to positive growth rates, sectors like 'Arts, entertainment and recreation' faced continuous decline, while 'Information and communication' remained relatively stable. The comparison between migration and growth rates showcased some initial synchrony but highlighted diverse trends and weakened correlations over time.

Industries with higher migration rates, such as 'Real estate activities' and 'Financial and insurance activities', indicated dynamic talent movements, potentially influenced by market fluctuations. Conversely, industries with lower migration rates, like 'Public administration and defence; compulsory social security' and 'Education', displayed stability in workforce patterns. The analysis emphasized the complexity of industry dynamics, indicating that while migration serves as a potential economic indicator, multiple factors influence industry growth beyond migration trends.

# THANKS

For Your Attention

**REFERENCES: LINKEDIN & WORLD BANK GROUP COLLABARATION**  
**DATASET: TALENT-MIGRATION & INDUSTRY-EMPLOYMENT-GROWTH**