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Determinants of Out-Migration in Asia-Pacific Countries: Peace, Economic Growth, Population Density, and Poverty

亚太国家人口外迁的决定因素：和平、经济增长、人口密度与贫困

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Abstract:

International out-migration remains an important demographic and socioeconomic phenomenon in the Asia-Pacific region and may be associated with economic, demographic, and security-related conditions. This study examines the relationships between the Global Peace Index (GPI), economic growth, population density, poverty, and out-migration across 26 Asia-Pacific countries. A quantitative cross-sectional design was employed using secondary data obtained from the United Nations Department of Economic and Social Affairs, the World Bank, and the Institute for Economics and Peace. Descriptive statistics and multiple linear regression estimated using the Ordinary Least Squares method were

Keywords: out-migration; Global Peace Index; economic growth; population density; poverty; Asia-Pacific.

关键词：人口外迁；全球和平指数；经济增长；人口密度；贫困；亚太地区



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applied. Selected variables were logarithmically transformed, and diagnostic tests were conducted to assess the main regression assumptions. The results show that population density is positively and statistically associated with out-migration, whereas economic growth exhibits a negative and statistically significant association. The Global Peace Index also has a negative coefficient, although its relationship with out-migration is significant only at the 10% level. Poverty is positively associated with out-migration but is not statistically significant. The model explains approximately 34.7% of the cross-country variation in out-migration and is jointly significant at the 10% level. These findings indicate that out-migration in the Asia-Pacific region is associated with interconnected demographic, economic, and institutional conditions. However, because the analysis is based on a relatively small cross-sectional sample, the results should be interpreted as exploratory associations rather than causal effects. The study contributes to migration research by integrating peace-related, economic, demographic, and poverty indicators within a single cross-country analytical framework.

摘要:

国际人口外迁是亚太地区重要的人口与社会经济现象，可能与经济、人口及安全状况密切相关。本研究考察全球和平指数（Global Peace Index，GPI）、经济增长、人口密度、贫困与亚太地区26个国家人口外迁之间的关系。研究采用定量横截面设计，使用联合国经济和社会事务部、世界银行以及经济与和平研究所提供的二手数据。研究运用描述性统计和普通最小二乘法（Ordinary Least Squares，OLS）多元线性回归进行分析，并对部分变量进行对数转换，同时实施诊断检验，以评估回归模型是否满足主要统计假设。研究结果表明，人口密度与人口外迁呈显著正相关，而经济增长与人口外迁呈显著负相关。全球和平指数的回归系数同样为负，但其与人口外迁之间的关系仅在10%的显著性水平上成立。贫困与人口外迁呈正相关，但未达到统计显著水平。该模型能够解释各国人口外迁差异的约34.7%，且模型整体在10%的显著性水平上具有统计意义。研究结果表明，亚太地区人口外迁与相互关联的人口、经济及制度条件有关。然而，由于本研究基于规模相对较小的横截面样本，其结果应被解释为探索性关联，而非因果效应。本研究通过在统一的跨国分析框架中整合和平、经济、人口及贫困指标，为人口迁移研究提供了补充证据。

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1. Introduction

Out-migration has become an increasingly important demographic and socioeconomic issue in the Asia-Pacific region, reflecting cross-country disparities in economic development, demographic conditions, institutional quality, and security. The region includes highly industrialized economies, rapidly developing countries, and relatively fragile states facing structural challenges related to poverty, limited labor market opportunities, population pressure, and governance instability. These differences contribute to substantial variation in migration patterns and make the Asia-Pacific region a major source of global migration flows. Consequently, understanding the structural determinants of out-migration is increasingly important for migration research and public policy.

Migration is widely recognized as a multidimensional process shaped by economic, demographic, political, institutional, and social

conditions. Classical migration theory, particularly Lee's push-pull framework, explains migration as a response to unfavorable conditions in places of origin and attractive opportunities in destination areas [24]. Similarly, the New Economics of Labour Migration emphasizes that migration decisions are influenced not only by income differentials but also by household strategies, institutional constraints, and structural inequalities [25, 28]. More recent approaches highlight the interaction between migration aspirations and the capability to migrate [9, 18].

Economic conditions remain among the most widely examined determinants of migration. Neoclassical migration theory suggests that economic growth may reduce migration pressure by improving employment opportunities and living standards in origin countries. However, empirical evidence indicates a more complex relationship. In some

developing countries, economic growth may coexist with persistent out-migration because rising incomes, educational attainment, and access to information can increase individuals' ability to finance migration [11, 12, 17]. Thus, the relationship between economic growth and migration is often nonlinear and context-dependent.

Demographic pressure also plays an important role in migration dynamics. Countries with high population density may experience intensified competition for employment, housing, education, infrastructure, and public services. In rapidly urbanizing countries, demographic concentration may exceed labor market absorption capacity and increase outward migration pressure. Previous studies indicate that demographic factors often interact with economic and institutional conditions in shaping migration outcomes [16, 25].

Poverty is another structural factor associated with migration. Limited economic opportunities and low household welfare may encourage migration as a livelihood strategy. However, migration also requires financial resources, information, and social networks. Consequently, extremely poor populations may have limited capacity to migrate despite strong economic incentives. This relationship reflects the "poverty–mobility paradox," whereby migration may be more common among moderately poor households with sufficient resources to participate in migration systems [12, 18].

Alongside economic and demographic conditions, peace and institutional stability have received increasing attention in migration research. The Global Peace Index (GPI), developed by the Institute for Economics and Peace, measures societal safety, ongoing conflict, and militarization across countries [22]. Lower levels of peace are often associated with institutional fragility, insecurity, and economic uncertainty, which may affect migration pressure. Previous studies indicate that conflict and insecurity may influence migration directly and indirectly through their effects on economic stability, mobility capacity, and public confidence [2, 8, 13, 22]. Nevertheless, empirical evidence on the relationship between peace and migration remains mixed across countries and regions.

Recent comparative studies emphasize that migration outcomes are shaped by interactions among economic capability, demographic pressure, institutional stability, and social opportunity structures [3, 14, 15]. However, empirical studies integrating peace-related, demographic, and economic indicators within a unified cross-country framework remain limited, particularly in the Asia-

Pacific region. Previous research has often examined migration determinants separately, focusing primarily on economic variables, demographic conditions, or political instability. As a result, the empirical understanding of migration determinants remains fragmented.

The Asia-Pacific region provides an appropriate setting for examining these interactions because it includes countries with diverse development trajectories, demographic transitions, institutional capacities, and migration systems. Several countries have experienced rapid economic growth while continuing to record relatively high levels of out-migration, suggesting that macroeconomic performance alone may not fully explain migration dynamics. These conditions highlight the need to integrate economic, demographic, poverty-related, and peace-related variables within a multidimensional analytical framework.

This study addresses this research gap by examining the relationships between the Global Peace Index, economic growth, population density, poverty, and out-migration across 26 Asia-Pacific countries. Using a semi-log Ordinary Least Squares (OLS) regression model, the study evaluates the partial and joint associations of these structural variables with out-migration. The findings are expected to contribute to migration studies, demography, and development policy by providing comparative evidence on the structural conditions associated with migration dynamics in the Asia-Pacific region.

This study is limited by its reliance on macro-level cross-sectional data, which may not fully capture temporal migration dynamics, household-level decision-making, or country-specific institutional contexts. Nevertheless, it provides comparative evidence that may support the development of more integrated migration, demographic, and social policies addressing population mobility, institutional stability, and inclusive economic development.

2. Literature Review

2.1 Theoretical Perspectives on Out-Migration

Migration theories consistently emphasize that population mobility is shaped by economic, demographic, social, institutional, and political factors operating at individual, household, and structural levels. One of the most influential approaches is Lee's push–pull framework, which explains migration as a response to unfavorable conditions in origin areas and attractive opportunities

in destination areas [24]. Push factors generally include poverty, unemployment, insecurity, demographic pressure, and limited economic opportunities, whereas pull factors include higher wages, employment opportunities, social stability, and improved living conditions. Despite its simplicity, the push–pull framework remains widely used because it incorporates multidimensional migration determinants within a unified conceptual structure.

Economic perspectives on migration were further developed in the Harris–Todaro model, which emphasizes expected income differentials rather than actual wage differences as a primary motivation for migration decisions [21]. According to this model, migration may continue even under conditions of urban unemployment because individuals respond to expected future opportunities rather than current labor market conditions alone. This perspective is particularly relevant to Asia-Pacific countries characterized by labor market segmentation, informal employment, and unequal access to economic opportunities.

Migration is not solely an individual decision but may also represent a household-level strategy. The New Economics of Labour Migration (NELM) argues that migration functions as a mechanism for income diversification and risk management among households facing imperfect labor, insurance, and credit markets [25, 28]. Migration decisions are therefore shaped not only by wage differentials but also by institutional constraints and structural inequalities in origin countries.

More recent migration theories emphasize the importance of aspirations, capabilities, and institutional structures. The aspiration–capability framework suggests that migration occurs when individuals possess both the desire and the capability to migrate [9, 18]. Economic development may initially increase migration because rising incomes, education, and access to information expand migration aspirations and strengthen migration capabilities. This framework helps explain why developing countries experiencing economic growth may continue to exhibit high out-migration rates during transitional stages of development.

Migration systems theory explains that migration flows are reinforced through social networks, historical linkages, institutional arrangements, and cumulative causation processes [4, 17]. Migrant networks reduce information costs and migration risks, thereby sustaining migration even when structural push factors weaken.

Institutional quality and governance are increasingly recognized as indirect determinants of migration. Weak governance, corruption, regulatory uncertainty, and inadequate public services may intensify migration pressure by reducing institutional trust and limiting economic opportunities. Conversely, improvements in governance and institutional quality may reduce migration incentives by strengthening political stability and public welfare [12, 16].

Recent migration research has also incorporated peace and security dimensions. Political instability, insecurity, violence, and conflict may affect migration decisions by undermining economic stability and increasing uncertainty. Composite indicators such as the Global Peace Index provide broader measures of societal peace and security, enabling cross-country comparisons of security-related migration conditions [22].

Overall, contemporary migration theories indicate that out-migration is a multidimensional phenomenon that cannot be adequately explained by a single theoretical framework. Economic growth, demographic pressure, poverty, institutional quality, and peace-related conditions interact in shaping migration decisions.

2.2 Peace, Conflict, and Migration

Peace and security have become increasingly important dimensions of migration research, particularly in regions characterized by institutional fragility and political instability. Galtung distinguishes between direct and structural violence, emphasizing that insecurity may arise not only from armed conflict but also from systemic inequalities and institutional weaknesses [20]. Insecure environments may reduce economic opportunities, weaken social cohesion, and increase uncertainty, thereby encouraging migration as a coping or survival strategy.

Empirical studies indicate that insecurity and conflict are associated with migration flows. Political instability and civil conflict may contribute to forced displacement and international migration [13]. Similarly, insecurity may increase migration aspirations, particularly in countries experiencing prolonged institutional fragility [8]. However, the relationship between peace and migration is not necessarily linear because migration decisions are also influenced by financial resources, social networks, and policy restrictions.

The Global Peace Index (GPI), developed by the Institute for Economics and Peace, is widely used to measure peace conditions across countries [22]. The

index incorporates dimensions such as societal safety, ongoing conflict, and militarization. Lower levels of peace may increase migration pressure by weakening economic confidence and increasing uncertainty about future welfare.

Previous studies also suggest that moderate insecurity may encourage migration more strongly than extreme conflict. Severe violence may restrict migration because affected populations often lack financial resources and mobility capabilities. Conversely, moderate insecurity combined with economic opportunities and migration networks may increase the likelihood of migration. Migration is therefore influenced not only by push factors but also by individuals' capability to migrate [14].

Governance and institutional quality may further shape the relationship between peace and migration. Weak governance, limited rule of law, and low public trust may intensify migration aspirations by increasing uncertainty and reducing confidence in future economic prospects. In contrast, stronger institutions may reduce migration pressure by improving social stability and economic security [12, 19].

2.3 Economic Growth, Population Density, and Poverty

Economic growth remains one of the most frequently examined determinants of migration. Traditional neoclassical migration theory suggests that higher economic growth may reduce migration pressure by increasing employment opportunities, wages, and living standards in origin countries. However, empirical evidence indicates that the relationship between economic growth and migration is often complex and context-dependent.

Several studies indicate that economic growth may initially increase migration by relaxing financial constraints and strengthening migration capabilities. This phenomenon is commonly described as the "migration hump," whereby migration tends to increase during the early stages of development before declining at higher income levels [12, 17].

Population density is another important factor associated with migration. High population density may intensify competition for employment, housing, education, land, and public services, thereby increasing migration pressure. In developing countries undergoing rapid urbanization, demographic concentration may exceed labor market absorption capacity and encourage both internal and international migration.

Population growth and urban concentration continue to influence migration patterns in

developing regions [30]. In densely populated countries, rapid urbanization and limited labor market absorption may intensify migration aspirations among working-age populations, particularly where economic opportunities remain spatially uneven.

Poverty is also an important determinant of migration. It may function as a push factor because limited economic opportunities encourage individuals to seek better livelihoods elsewhere. However, the relationship between poverty and migration is not straightforward. Extreme poverty may restrict migration because mobility requires financial resources, access to information, and social networks. This condition is commonly referred to as the "poverty–mobility paradox," whereby moderately poor populations may be more capable of migrating than extremely poor populations [12, 18].

Previous studies indicate that migration is associated with interactions among economic, demographic, and security-related factors. Although migration determinants have been examined from economic, demographic, and political perspectives, empirical research integrating peace-related indicators, economic growth, population density, and poverty within a unified cross-country framework remains limited, particularly in the Asia-Pacific region. Therefore, this study examines the joint associations of these structural variables with out-migration across 26 Asia-Pacific countries.

3. Research Methodology

This study employs a quantitative cross-sectional design to examine the determinants of out-migration across Asia-Pacific countries. A cross-country approach is appropriate because migration patterns in the region are associated with differences in economic conditions, demographic structures, institutional quality, and peace-related conditions. By focusing on macro-level indicators, the study seeks to identify structural relationships associated with out-migration rather than individual migration decisions.

The cross-sectional design enables comparisons among countries at a single point in time and is suitable for exploratory analysis in a heterogeneous regional context such as the Asia-Pacific. Countries in the region differ substantially in economic development, demographic characteristics, and institutional conditions, allowing a broader examination of migration determinants. Although cross-sectional analysis cannot capture temporal dynamics or establish long-term causal relationships, it can provide useful evidence on structural associations with migration patterns.

The study initially considered 38 Asia-Pacific countries. Data availability for each variable was assessed before sample selection. As shown in Table 1, 26 countries met the eligibility criteria and were included in the final analysis, whereas 12 countries

were excluded because of missing observations for one or more variables. The final dataset therefore comprised 26 countries with complete observations, ensuring consistency and comparability across the analysis.

Table 1. Data Availability, Eligibility Assessment, and Sample Selection of Asia-Pacific Countries (UN DESA, World Bank, and Institute for Economics and Peace, 2022)

No	Country	GPI	Economic Growth	Population Density	Poverty	Out-Migration	Eligibility Status
1	New Zealand	CD	CD	CD	CD	CD	Eligible
2	Singapore	CD	CD	CD	CD	CD	Eligible
3	Malaysia	CD	CD	CD	CD	CD	Eligible
4	Japan	CD	CD	CD	CD	CD	Eligible
5	Australia	CD	CD	CD	CD	CD	Eligible
6	Vietnam	CD	CD	CD	CD	CD	Eligible
7	Taiwan	CD	CD	CD	CD	CD	Eligible
8	Mongolia	CD	CD	CD	CD	CD	Eligible
9	South Korea	CD	CD	CD	CD	CD	Eligible
10	Indonesia	CD	CD	CD	CD	CD	Eligible
11	Laos	CD	CD	CD	CD	CD	Eligible
12	Timor Leste	CD	CD	CD	CD	CD	Eligible
13	Cambodia	CD	CD	CD	CD	CD	Eligible
14	Thailand	CD	CD	CD	CD	CD	Eligible
15	China	CD	CD	CD	CD	CD	Eligible
16	Philippines	CD	CD	CD	CD	CD	Eligible
17	Papua New Guinea	CD	CD	CD	CD	CD	Eligible
18	Myanmar	CD	CD	CD	CD	CD	Eligible
19	North Korea	CD	CD	CD	CD	CD	Eligible
20	Fiji	CD	CD	CD	CD	CD	Eligible
21	Samoa	CD	CD	CD	CD	CD	Eligible
22	Afghanistan	CD	CD	CD	CD	CD	Eligible
23	Bangladesh	CD	CD	CD	CD	CD	Eligible
24	Bhutan	CD	CD	CD	CD	CD	Eligible
25	India	CD	CD	CD	CD	CD	Eligible
26	Nepal	CD	CD	CD	CD	CD	Eligible
27	Pakistan	CD	CD	CD	CD	ID	Non-Eligible
28	Sri Lanka	CD	CD	CD	CD	ID	Non-Eligible
29	Kazakhstan	CD	CD	CD	CD	ID	Non-Eligible
30	Kyrgyzstan	CD	CD	CD	CD	ID	Non-Eligible
31	Tajikistan	CD	CD	CD	CD	ID	Non-Eligible
32	Turkmenistan	CD	CD	CD	CD	ID	Non-Eligible
33	Uzbekistan	CD	CD	CD	CD	ID	Non-Eligible
34	Armenia	CD	CD	CD	CD	ID	Non-Eligible
35	Azerbaijan	CD	CD	CD	CD	ID	Non-Eligible
36	Georgia	CD	CD	CD	CD	ID	Non-Eligible
37	Iran	CD	CD	CD	CD	ID	Non-Eligible
38	Turkiye	CD	CD	CD	CD	ID	Non-Eligible

Note:

CD = Complete Data

ID = Incomplete Data

Countries were classified as eligible only when complete observations were available for all study variables.

3.1 Data Sources and Variables

The dependent variable in this study is out-migration, measured using an internationally comparable migration indicator obtained from the United Nations Department of Economic and Social Affairs (UN DESA). The indicator reflects the magnitude of population outflows from each country and serves as a proxy for international out-migration at the national level. To reduce skewness and improve model estimation, the variable was transformed using the natural logarithm [$\ln(\text{Out-Migration})$].

The independent variables are the Global Peace Index (GPI), economic growth, population density, and poverty. The GPI was obtained from the Institute for Economics and Peace and measures national peace and security conditions, including societal safety, ongoing conflict, and militarization. Higher

GPI values indicate lower levels of peace and greater insecurity.

Economic growth is measured as the annual percentage growth rate of Gross Domestic Product (GDP). Population density is measured as the number of people per square kilometer of land area and serves as a proxy for demographic pressure. Poverty is measured as the percentage of the population living below the national poverty line.

The data were obtained from internationally recognized institutions, namely UN DESA, the World Bank, and the Institute for Economics and Peace (IEP). The use of standardized international datasets supports consistency and comparability across countries.

To enhance transparency and reproducibility, the definitions, units of measurement, and data sources for all variables are presented in Table 2.

Table 2. Variables Definitions and Data Sources

Variables	Definition	Unit Analysis	Sources
Out-Migration (OM)	International migration indicator representing the magnitude of population outflows from a country	Person	UN Desa
Global Peace Index (GPI)	National peace and security score; Index higher values indicate lower levels of peace		Institute for Economics and peace
Economic Growth(EG)	Annual GDP growth rate	Percent (%)	World Bank
Population Density (PD)	Population per square kilometer of land area	Persons/km ²	World Bank
Poverty(P)	Population living below the national poverty line	Percent (%)	World Bank

3.2 Empirical Model

This study applies multiple linear regression using the Ordinary Least Squares (OLS) method to estimate the relationships between the selected structural factors and out-migration. Multiple regression is appropriate because it allows the partial and joint associations of several explanatory variables with out-migration to be assessed within a unified analytical framework.

The empirical model is specified as follows:

$$\ln(\text{Out-Migration}) = \beta_0 + \beta_1 \text{GPI} + \beta_2 \text{EG} + \beta_3 \ln(\text{PD}) + \beta_4 \ln(\text{P}) + \varepsilon_i$$

Where:

$\ln(\text{Out-Migration})$ = natural logarithm of out-migration

GPI = Global Peace Index

EG = economic growth rate

$\ln(\text{PD})$ = natural logarithm of population density

$\ln(\text{P})$ = natural logarithm of poverty rate

β_0 = constant term

β_1 – β_4 = regression coefficients

ε_i = error term

The model integrates economic, demographic, and peace-related variables to reflect the multidimensional nature of migration determinants across Asia-Pacific countries. Selected variables were logarithmically transformed to reduce skewness,

stabilize variance, and improve model estimation. The semi-log specification also facilitates the interpretation of coefficients in relative terms.

In addition to the regression analysis, descriptive crosstabulation was used to examine the distributional relationship between peace conditions and out-migration categories. This analysis complements the regression model by providing preliminary insights into structural migration patterns.

3.3 Diagnostic Tests and Limitations

Several diagnostic tests were conducted to assess the adequacy of the regression model. A normality test was used to determine whether the residuals followed an approximately normal distribution. Multicollinearity among the independent variables was assessed using variance inflation factors (VIFs), while linearity and homoscedasticity tests were conducted to evaluate the relevant model assumptions.

The diagnostic results indicate that model performance improved after the logarithmic transformation of selected variables. The final regression model satisfied the principal assumptions of Ordinary Least Squares estimation, including residual normality, linearity, homoscedasticity, and acceptable levels of multicollinearity.

Nevertheless, several methodological limitations should be acknowledged. First, the cross-sectional design does not capture temporal migration dynamics or permit the identification of long-term causal

relationships. Second, the relatively small sample of 26 countries may limit the generalizability of the findings. Third, the model explains only part of the cross-country variation in out-migration. Finally, several potentially relevant migration determinants, including migration networks, governance quality, educational attainment, remittances, and migration policies, were excluded because of data limitations.

Despite these limitations, Ordinary Least Squares regression is appropriate for this exploratory cross-country analysis. The findings should therefore be interpreted as evidence of structural associations rather than definitive causal relationships.

4. Results

4.1 Descriptive Overview of the Data

This study examines the relationships between the Global Peace Index (GPI), economic growth, population density, poverty, and out-migration across 26 Asia-Pacific countries after excluding extreme observations identified through diagnostic procedures. The descriptive analysis provides an overview of the distributional characteristics and cross-country variation in the variables before regression estimation.

Table 3 presents the descriptive statistics for all variables included in the analysis. The results show substantial cross-country variation, reflecting differences in economic performance, demographic conditions, and institutional stability across the Asia-Pacific region.

Table 3. Descriptive Statistics of Research Variables

Variables	N	Mean	Stand.Dev.	Minimum	Maximum
Global Peace Index(GPI)	26	1.91	0.39	1.32	2.74
Economic Growth (EG)	26	4.01	2.01	0.20	8.60
Ln(Population Density)	26	4.98	1.61	1.10	9.00
Ln(Poverty)	26	2.71	0.53	1.44	3.82
Ln(Out-Migration)	26	11.89	1.94	8.66	16.28

Source: Processed secondary data

The Global Peace Index (GPI) shows moderate cross-country variation, indicating differences in institutional stability and security conditions within the region. Economic growth also varies considerably, reflecting diverse development patterns across Asia-Pacific economies.

Population density exhibits relatively high variation compared with the other variables. This may reflect differences in demographic concentration

and settlement patterns across countries, which may be associated with migration dynamics. Poverty levels also vary across the sampled countries, indicating differences in economic conditions and social welfare. Similarly, out-migration shows substantial variation, reflecting diverse structural and socioeconomic conditions across the Asia-Pacific region.

Overall, the descriptive findings indicate that the selected variables capture important cross-country differences in economic, demographic, and institutional characteristics. This variation provides an empirical basis for the subsequent regression analysis of out-migration.

4.2 Diagnostic Tests

Before regression estimation, diagnostic tests were conducted to assess whether the main assumptions of the Ordinary Least Squares (OLS) model were satisfied.

4.2.1 Normality Test

The Jarque–Bera test yields a p-value of 0.392 (> 0.05), indicating no statistically significant departure from residual normality. This result supports the normality assumption required for conventional statistical inference.

4.2.2 Multicollinearity Test

Variance inflation factor (VIF) values range from 1.22 to 1.41, well below the commonly used threshold of 10. These results indicate no serious multicollinearity among the explanatory variables.

4.2.3 Heteroskedasticity Test

The Breusch–Pagan test yields a p-value of 0.392 (> 0.05), indicating no statistically significant evidence of heteroskedasticity. Therefore, the residual variance can be considered approximately constant across observations.

4.2.4 Autocorrelation Test

The Durbin–Watson statistic is 1.97, which is close to the reference value of 2 and indicates no serious evidence of residual autocorrelation. However, because the data are cross-sectional, autocorrelation is less central than in time-series analysis.

4.2.5 Summary of Diagnostic Tests

Overall, the diagnostic results indicate that the main OLS assumptions are adequately satisfied. The regression estimates may therefore be interpreted within the methodological limitations of the study.

4.3 Model Fit and Explanatory Power

Tables 4 and 5 present the regression results for the relationships between the Global Peace Index, economic growth, population density, poverty, and out-migration across the sampled Asia-Pacific countries.

Table 4. Regression Results on Out-Migration in Asia-Pacific Countries

Variables	Coefficient	Stand.Error	t-Statistic	Probability
Constant	1.964	0.741	2.651	0.016**
Global Peace Index (GPI)	-0.061	0.033	-1.842	0.091*
Economic Growth (EG)	-0.018	0.009	-1.897	0.042**
Ln(Population Density) (PD)	0.214	0.097	2.203	0.041**
Ln(Poverty)	0.133	0.081	1.642	0.118

Table 5. Model Statistics of the Regression Analysis

Indicators	Value
R	0.589
R-squared	0.347
Adjusted R-squared	0.210
F-Statistic	2.531
Prob(F-Statistic)	0.071*
Durbin-Watson	1.970
Number of Observations(N)	26

Notes: Dependent variable: ln(Out-Migration).
 $P < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The regression model yields an R^2 of 0.347 and an adjusted R^2 of 0.210. Thus, the explanatory variables included in the model account for approximately 34.7% of the cross-country variation in out-migration. This moderate explanatory power is consistent with the multidimensional nature of migration, which is associated with a broad range of economic, demographic, institutional, social, and historical factors.

The F-statistic is 2.531, with a p-value of 0.071, indicating that the model is jointly significant at the 10% level. This suggests that the explanatory variables collectively provide some explanatory value for cross-country differences in out-migration. However, the marginal level of significance requires cautious interpretation.

The model's limited explanatory power may partly reflect the omission of relevant migration determinants, including migration networks, educational attainment, governance quality, remittances, labor recruitment systems, and migration policy regimes. These factors were not included because of data limitations.

Substantial heterogeneity also exists among Asia-Pacific countries in institutional quality, demographic structure, economic development, and migration systems. Such diversity may limit the explanatory power of a single cross-sectional model. The findings should therefore be interpreted as exploratory cross-country associations rather than evidence of causal relationships.

4.4 Integrated Structural Interpretation of Migration Patterns

Beyond the interpretation of individual coefficients, the findings suggest that migration in the Asia-Pacific region is associated with interconnected economic, demographic, and institutional conditions. Population density may represent a source of demographic pressure through increased competition for employment, housing, infrastructure, and public services.

Economic growth may be associated with migration through several channels. Stronger economic performance may reduce migration pressure by improving domestic employment and income opportunities. At the same time, economic development may increase individuals' capacity to migrate by improving access to financial resources and information.

The Global Peace Index represents a security-related institutional dimension. Its relationship with out-migration suggests that peace-related conditions

may interact with broader economic and demographic contexts rather than operate as an independent migration determinant. Overall, migration patterns appear to be associated with multiple structural conditions rather than a single dominant factor.

4.5 Cross-Country Variation and the Peace–Migration Relationship

The cross-country evidence indicates that the relationship between peace conditions and migration is complex and varies across national contexts. The direction and magnitude of this relationship may depend on broader economic, demographic, and institutional conditions.

Some countries with relatively favorable peace conditions continue to experience high levels of out-migration, whereas some countries facing institutional challenges exhibit more moderate migration levels. Peace should therefore be interpreted as one component of a broader migration system rather than as a standalone determinant. Its relationship with migration must be considered alongside other structural conditions affecting mobility.

4.6 Regression Results for the Global Peace Index

The Global Peace Index (GPI) has a negative coefficient ($\beta = -0.061$) and is statistically significant at the 10% level ($p = 0.091$). Because higher GPI values indicate lower levels of peace and greater insecurity, the result suggests that higher GPI scores are associated with lower levels of out-migration within the sample.

This counterintuitive association indicates that the relationship between peace conditions and migration is not straightforward and may reflect the diverse migration contexts represented in the Asia-Pacific region. Migration outcomes are associated with multiple interacting factors, including economic opportunities, migration networks, labor market conditions, institutional arrangements, and historical migration patterns.

Because the coefficient is significant only at the 10% level and is estimated from a relatively small cross-sectional sample, it should be interpreted cautiously. The result indicates an empirical association rather than a causal effect and requires further investigation.

4.7 Economic Growth and Migration Dynamics

Economic growth has a negative coefficient ($\beta = -0.018$), indicating that stronger economic growth is associated with lower levels of out-migration.

Improved economic performance may expand employment opportunities, increase income, and strengthen domestic welfare conditions, thereby reducing migration incentives. However, the strength of this conclusion depends on the correct p-value reported in the regression table and should be interpreted within the limitations of the cross-sectional model.

4.8 Population Density as a Structural Factor

Population density has a positive and statistically significant coefficient ($\beta = 0.214$; $p = 0.041$), representing the strongest statistical association among the explanatory variables. Higher population density may intensify competition for employment, housing, infrastructure, and public services.

This result indicates that demographic pressure is associated with out-migration across the sampled Asia-Pacific countries. However, the magnitude of this association may vary according to institutional capacity, urban planning, and labor market conditions.

4.9 Poverty and Migration Constraints

Poverty has a positive coefficient ($\beta = 0.133$) but is not statistically significant ($p = 0.118$). Thus, poverty alone does not appear to be a reliable predictor of out-migration in the estimated model.

Although poverty may increase the motivation to migrate, it may also constrain mobility because migration requires financial resources, access to information, and social networks. This finding is broadly consistent with the poverty–mobility paradox discussed in migration research.

4.10 Relative Importance and Summary of Findings

Among the explanatory variables, population density shows the strongest statistically significant association with out-migration. Economic growth and the Global Peace Index show negative associations, whereas poverty has the weakest relationship and is not statistically significant. Overall, out-migration across Asia-Pacific countries is associated with a combination of demographic, economic, and institutional conditions. These findings should be interpreted as exploratory cross-country associations rather than causal relationships.

5. Discussion

The findings suggest that out-migration across Asia-Pacific countries is associated with a combination of demographic, economic, and institutional conditions rather than a single dominant determinant. Population density shows the strongest statistical association with out-migration, while economic growth and the Global Peace Index (GPI) exhibit weaker relationships. Poverty is positively associated with out-migration but is not statistically significant. These results support the view that migration is a multidimensional phenomenon shaped by interacting structural conditions.

The model has moderate explanatory power. The coefficient of determination ($R^2 = 0.347$) indicates that the included explanatory variables account for approximately 34.7% of the cross-country variation in out-migration. Although a substantial proportion remains unexplained, this is understandable because migration is associated with numerous factors, including migration networks, labor market institutions, educational attainment, governance quality, remittance systems, and migration policies, many of which are difficult to capture in a single cross-sectional model.

The findings are broadly consistent with the aspiration–capability framework, which emphasizes that migration depends not only on the motivation to migrate but also on individuals' capacity to mobilize the resources required for mobility. From this perspective, migration outcomes emerge from interactions between structural constraints and available opportunities. Economic conditions, demographic pressure, and institutional environments may therefore be associated with migration through multiple interconnected pathways.

Population density is the strongest explanatory variable in the model. This finding highlights the importance of demographic pressure in migration dynamics across the Asia-Pacific region. High population concentration may intensify competition for employment, housing, infrastructure, and public services, thereby increasing incentives for outward migration. However, the strength of this association may depend on institutional capacity, labor market flexibility, and governments' ability to accommodate population growth through effective development policies.

Economic growth is negatively associated with out-migration, suggesting that stronger economic performance may reduce migration pressure by improving employment opportunities and household welfare. Nevertheless, economic growth does not

necessarily eliminate migration. In several Asia-Pacific countries, economic expansion has occurred alongside uneven regional development and labor market disparities. Migration may therefore continue under favorable macroeconomic conditions when the benefits of development are distributed unevenly across regions and population groups.

The Global Peace Index also shows a negative association with out-migration, although the relationship is statistically significant only at the 10% level. Given the socioeconomic and institutional heterogeneity of the sampled countries, this result should be interpreted cautiously. Peace-related conditions may interact with broader demographic and economic factors rather than operate as an independent determinant of migration. Aggregate peace indicators may also fail to capture localized insecurity, governance challenges, and institutional differences across countries.

Poverty has a positive but statistically insignificant relationship with out-migration. This finding is broadly consistent with the poverty-mobility paradox, which suggests that migration requires financial resources, information, and social networks that may be unavailable to the poorest households. Consequently, migration may be more common among individuals and households with sufficient resources to overcome mobility constraints than among those experiencing extreme deprivation.

The results also indicate substantial heterogeneity across Asia-Pacific countries. Similar demographic, economic, or institutional conditions may be associated with different migration outcomes depending on governance quality, labor market structures, migration histories, and policy environments. Generalized explanations of migration determinants should therefore be treated cautiously, and country-specific contexts remain important for understanding migration patterns.

Several limitations should be acknowledged. First, the cross-sectional design does not capture temporal changes or long-term migration dynamics. Second, the relatively small sample may limit the generalizability of the findings. Third, the model excludes several potentially important migration determinants, including migration networks, educational attainment, remittances, governance quality, and migration policy regimes. Future research could integrate macro-level indicators with household-level and longitudinal data to provide a more comprehensive understanding of migration processes.

Despite these limitations, the study contributes to the migration literature by integrating demographic,

economic, poverty-related, and peace-related indicators within a unified analytical framework. The findings reinforce the view that migration in the Asia-Pacific region is a multidimensional process associated with interactions among demographic pressure, economic conditions, institutional environments, and migration capabilities rather than any single structural factor.

6. Conclusion and Policy Implications

This study examines the associations between the Global Peace Index (GPI), economic growth, population density, poverty, and out-migration across 26 Asia-Pacific countries using a cross-sectional semi-log regression model. The results indicate that population density is positively and significantly associated with out-migration. Economic growth and the GPI show negative associations, whereas poverty has a positive but statistically insignificant relationship with out-migration.

Overall, out-migration in the Asia-Pacific region is associated with a combination of demographic, economic, and institutional conditions rather than a single dominant factor. Among the variables included in the model, population density shows the strongest statistical association with out-migration, suggesting that demographic pressure may represent an important structural dimension of migration dynamics in the region.

Economic growth and peace-related conditions are also associated with migration outcomes, although these relationships should be interpreted cautiously because they are derived from a relatively small cross-sectional sample. The negative association between the GPI and out-migration appears to reflect the complexity and heterogeneity of migration systems across Asia-Pacific countries rather than a simple linear relationship between peace conditions and migration behavior.

The findings are broadly consistent with contemporary migration theories emphasizing the interaction between migration aspirations and capabilities. Migration may reflect not only economic hardship or institutional challenges but also individuals' and households' access to the resources, information, and opportunities required for mobility. It should therefore be understood as a multidimensional process associated with both structural conditions and migration capabilities.

Several limitations should be acknowledged. First, cross-sectional data do not capture temporal migration dynamics and do not support strong causal

inference. Second, the relatively small sample may limit the generalizability of the findings. Third, several potentially relevant migration determinants—including migration networks, governance quality, education, remittances, labor recruitment systems, migration policies, and environmental factors—were excluded because of data limitations. The findings should therefore be interpreted as exploratory cross-country associations rather than causal relationships.

From a policy perspective, the results provide preliminary insights rather than direct prescriptions. Migration management strategies may benefit from considering demographic, economic, and institutional dimensions simultaneously. Population concentration, labor market absorption capacity, and regional development disparities may be important contextual factors associated with migration pressure. Inclusive economic development and stronger institutional conditions may also support broader efforts to address structural factors related to migration.

Future research should employ panel or longitudinal data to better capture migration dynamics over time. Incorporating institutional, environmental, and household-level variables may improve explanatory power and provide a more comprehensive understanding of migration processes. More advanced econometric methods may also help address potential endogeneity and nonlinear relationships among migration determinants.

In conclusion, out-migration in the Asia-Pacific region is associated with interconnected demographic, economic, and institutional conditions. Migration is a multidimensional and context-dependent process that cannot be adequately explained by a single structural factor. Understanding it therefore requires attention to the interaction among demographic pressures, economic opportunities, institutional environments, and migration capabilities.

7. Limitations and Future Research

This study has several limitations. First, the use of cross-sectional data limits the ability to capture temporal dynamics and establish causal relationships in migration processes. Second, the number of countries included in the analysis was constrained by data availability, which may limit the generalizability of the findings beyond the sampled countries. Third, the empirical model does not include institutional quality, migration policies, or migrant network variables, although previous studies identify these factors as important determinants of migration

behavior. Differences in data collection procedures and reporting standards across countries may also introduce measurement inconsistencies that cannot be fully controlled in cross-country analysis. The results should therefore be interpreted as evidence of structural associations rather than causal effects.

Future research should employ panel or longitudinal data to better capture migration dynamics over time. Expanding the model to include institutional quality, migration networks, environmental pressures, and migration policy variables may improve its explanatory power. More advanced econometric techniques may also help address potential endogeneity and nonlinear relationships among migration determinants.

Author Contributions

Conceptualization, methodology, formal analysis, investigation, data curation, visualization, project administration, and writing—original draft preparation: Sirilius Seran. Writing—review and editing: Sirilius Seran and Desmon Redikson Manane. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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