The Influence of Domestic Socio-Economic Development on Migration Decisions in Low and Middle-Income Countries: A Migration Capabilities Perspective

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Abstract

People, their families, and communities weigh the costs and benefits of migration to decide whether to move or stay; however, these decisions are complex and influenced by multiple factors. Within the Aspirations-Capabilities (A-C) migration framework, individuals' capabilities are fundamental in shaping migration decisions, including the capability to choose to stay in their home country. Using the two-step System GMM model for net migration data, this paper examines the influence of domestic socioeconomic development on individuals' migration decisions and capability to stay. The positive and statistically significant coefficients for HDI (9.144–13.79) and the logarithm of GDP per capita (0.994–1.785) on net migration suggest that improved socioeconomic conditions in origin countries influence migration decisions and encourage individuals to stay, contributing to balance migration flows. Furthermore, the study demonstrates that individuals' capability to stay can be effectively assessed using the net migration rate, with positive coefficients indicating an improvement in their ability and willingness to remain in their home country. In this context, the countries of migrant origin should foster a conducive domestic environment to shift individuals' 'aspirations and capabilities to migrate' toward 'aspirations and capabilities to stay at home' as a sustainable approach to migration management. This shift can transform migration from a forced necessity into a voluntary choice, in alignment with the objectives of the 2030 Agenda for Sustainable Development Goals and the 2018 Global Compact for Safe, Orderly, and Regular Migration (GCM).

Keywords: net migration, socio-economic development, GDP per capita, human development index, migration capabilities, low and middle-income countries.

1. Introduction and Background

International migration has steadily increased over the decades, from 93 million in 1960 to 281 million in 2020, representing 3.6% of the global population (IOM, 2022). Among them, nearly 75% of international migrants and 70% of migrant workers originate from Low- and Middle-Income Countries (LMICs), making these nations key sources of migrants and remittance destinations. Furthermore, international migration aspirations are widespread among individuals in LMICs. The Gallup World Poll (2017) revealed that about 750 million people, or 15 percent of

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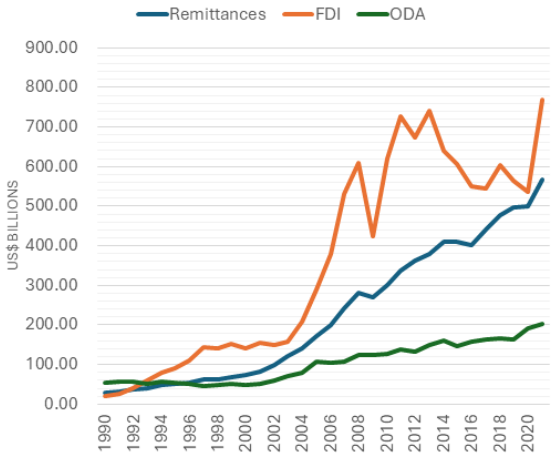
the world's population, would move permanently to another country if given the opportunity. Figures 1 and 2 below illustrate the trends in international migration and remittance flows.

Figure 1 (left): International Migrants (1970-2020); Figure 2 (right): Remittance, FDI & ODA in LMICs



Source: Author's creation based on data from the World Bank, WDI (2022)

Departures of migrants have considerable consequences for the communities of origin. As shown in Figure 2 above, the total global remittances flow was USD 702 billion in 2020, of which LMICs received USD 540 billion, which far exceeded Official Development Assistance (ODA) by nearly three times and has approached the value of Foreign Direct Investment (FDI). In some countries, remittances exceeded 50% of GDP. These remittances are widely considered to be the most direct and measurable link between migration and development (IOM Report, 2024). They can provide funding for economic development in the form of increased investment in human capital or relaxed credit constraints for further physical capital accumulation (Benhamou & Cassin, 2021). They have also been an essential source for improving the quality of life in origin societies.

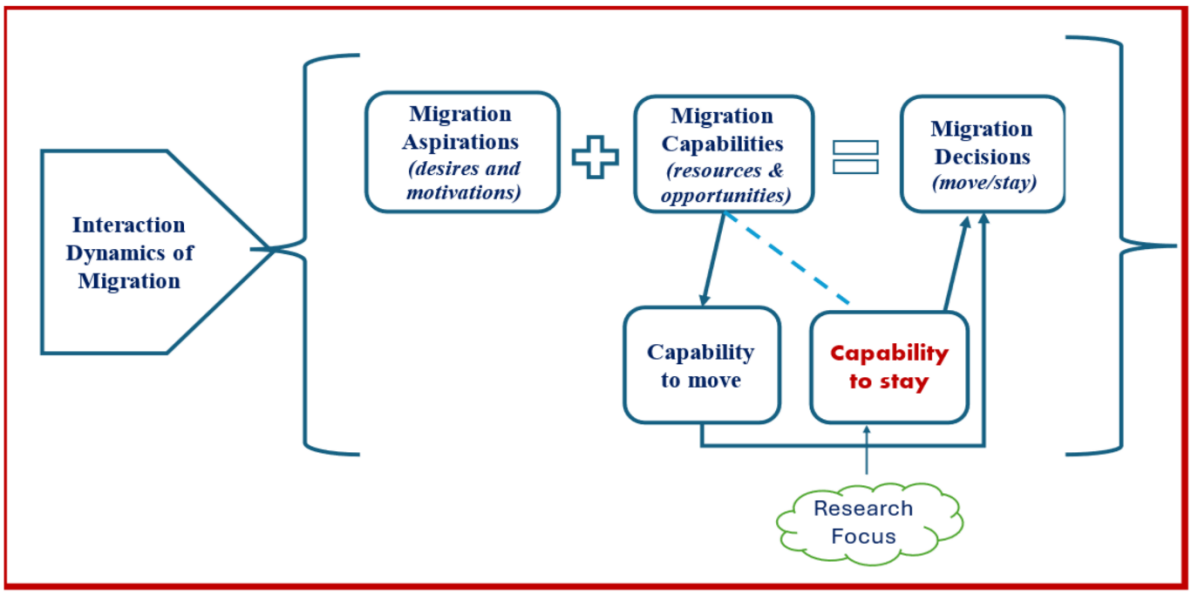
One might argue that migration and remittances have become double-edged swords, particularly for LMICs. On the one hand, they offer individuals opportunities for better employment, education, and improved living standards at home and abroad. Conversely, under unfavorable circumstances, however, the departure of people can also further undermine prospects for growth and change in the remittance-dependent and migrant-obsessed communities' (Haas et al., 2019, p. 5). Once migration becomes strongly associated with success, migrating can give rise to a culture of migration in which migration becomes the norm, and staying home is associated with failure (De Haas, 1998; Massey et al., 1993). The IOM Report (2024) alerts that heavy reliance on remittances may foster a culture of dependency, reduce labor force participation, and slow economic growth. Such trends, pervasive in many LMICs, demand careful analysis and measures to address their underlying causes and implications.

People, their families, and communities weigh the costs and benefits of migration, and based on the results, they decide whether or not to move (Hanlon & Vicino, 2014, p. 153). The Human Development Report(2009) defines human mobility as "the ability of individuals, families or groups to choose their residence." However, migration decisions are complex and often influenced by myriad factors at the origin. In general, it is expected that the decision to migrate or not should be an individual's voluntary choice rather than a forced necessity. However, the reality is quite the

opposite. Migration from developed and affluent countries is primarily voluntary, a willful choice, whereas migration from less developed countries is often driven by forced necessity. In the meantime, migration is often negatively connotated and deeply affected by misinformation and politicization (IOM Report, 2024). Amidst this milieu, will the socioeconomic development as the migrants' capability in LMICs contribute to a positive net migration? How can we measure the individual's capability to stay at home? How can we transform migration from a forced necessity into a voluntary choice? Amidst the ongoing migration-development debate, these questions are crucial for shaping future migration policies in migrant-origin countries. Understanding these dynamics and addressing the associated challenges require a fresh perspective on migration. Employing the analytical lenses of migration capabilities (Carling, 2002; De Haas, 2010b, 2021) can help understand migration as an integral part of a broader development and social transformation process.

The concept of migration capability is a migrant-centered perspective on international migration. The economist and philosopher Amartya Sen first defined human capability as the ability of human beings to lead lives they have reason to value and to enhance their substantive choices (or freedoms) they have (Sen, 1999). Although Sen did not analyze migration, later on De Haas (2010b); de Haas (2014); De Haas (2021) applied capabilities as a conceptual refinement to the development side of migration-development interactions. This approach recognizes migrants' motivations beyond mere economics, considering their desires and perceived opportunities. According to De Haas (2021), the Aspirations-Capabilities framework explains migration decisions by considering individuals' desires and motivations (aspirations) alongside their resources and opportunities (capabilities). As long as aspirations grow faster than local opportunities can offer, it is likely that people's aspirations to migrate will increase. The framework indicates that migration is the combined result of two factors: (1) the aspiration to migrate and (2) the ability to migrate.

Figure 3: Conceptual Framework of the Research



Source: Author's creation. Adopted from (De Haas, 2021).

Beyond the concept of individuals' 'capabilities to migrate' (which primarily emphasizes their ability to move internationally), this study extends the framework to focus on the notion of 'capabilities to stay' in their home country. This extended concept emphasizes empowering individuals with socioeconomic resources and opportunities in their place of origin as a sustainable approach to managing migration. We further argue that enhancing individuals' capability to stay can also increase their aspirations to stay at home, thus contributing to balancing migration flows in origin countries. It is suggested that the origin countries should foster a conducive domestic environment to shift individuals' 'aspirations and capabilities to migrate' toward 'aspirations and capabilities to stay at home' as a sustainable approach to migration management.

While there is growing interest in the relationship between migration and development, very few studies have focused on the influence of domestic socioeconomic development on individuals' migration decisions and capability to stay. Under the migration capability framework, the existing body of literature has primarily focused on the individuals' ability to move internationally rather than their ability to stay at home. Most prior studies are qualitative (interpretive), while the few available empirical studies yield mixed and sometimes contradictory findings. Previous studies have relied on emigration rates and migration stock as dependent variables; however, we argue that Net Migration Rates (NMR) may provide a more accurate measure for analyzing individuals' migration decisions and capabilities. To address these limitations, this study examines how the level of domestic socioeconomic development, as a determinant of individuals' migration capability, influences migration decisions. Panel data from 109 low- and middle-income countries will be examined to answer these research questions:

1. How does domestic socioeconomic development in low- and middle-income countries influence individuals' migration decisions and the capability to stay?
2. How can we measure the individuals' migration decisions and capabilities in migrant-origin countries?
3. How does the impact of domestic socioeconomic development on migration decisions and capabilities vary across different socioeconomic levels?
4. What migration policies should migrant-origin countries adopt to shift migration from a forced necessity to a voluntary choice?

The dynamic panel regression shows that domestic socioeconomic development influences individuals' migration decisions and capabilities to stay in their countries of origin. The positive and statistically significant coefficients of HDI (9.144–13.79) and the logarithm of GDP per capita (0.994–1.785) suggest that improved socioeconomic conditions in origin countries influence migration decisions and enhance individuals' capability to stay, thus contributing to the balance in migration flows. We argue that individuals' migration decisions and capability to stay can be more effectively assessed using the net migration rate, where positive coefficients reflect an improvement in their ability and willingness to remain in their home country. As aspirations outpace livelihood opportunities in origin societies, it is reasonable to anticipate that out-migration will likely persist or even increase in the coming years in countries with low socioeconomic status. Therefore, the origin countries should foster a conducive domestic environment to shift individuals' 'aspirations and capabilities to migrate' toward 'aspirations and capabilities to stay at home' as a sustainable approach to migration management. Policymakers in migrant-origin countries are encouraged to move away from restrictive migration policies and border control measures, focusing instead on strategies that promote growth and sustainable development.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature and highlights the significance of the study; Section 3 outlines the data sources, variable selection,

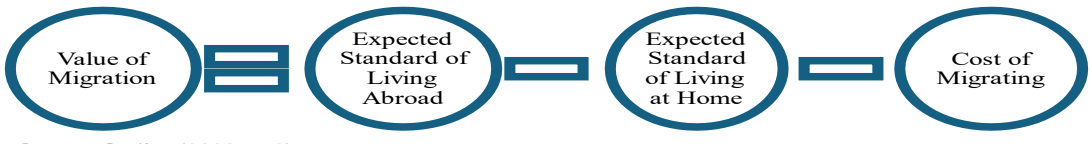
methodology, and estimation strategy; Section 4 presents the estimation results and provides an in-depth discussion; and, finally, Section 5 concludes the paper and offers policy recommendations.

2. Literature Review

2.1 Theoretical Perspective and Evolution

Conventional wisdom holds that income and development differentials mainly drive international migration (De Haas, 2010a). Ravenstein (1885) argued that development and migration are substitutes and that an inversely proportional relationship exists between income and other opportunity differentials and migration rates. This perspective, in which people are expected to move from low-income to high-income areas, has remained dominant in migration studies. Later on, the push-pull framework of migration (Lee, 1966) viewed income differences between countries as a prime emigration driver. Originally developed to explain labor migration in economic development, the Neo-classical Migration theory (Harris & Todaro, 1970; Todaro, 1969) explained migration as a function of geographical differences in the relative scarcity of labor and capital. Within this perspective, individual migration decisions are made by rational actors guided by comparing the present discounted value of lifetime earnings in alternative geographic locations, with migration occurring when there is a good chance of recouping human capital investments. The fundamental assumption of the neoclassical model predicts that migration will occur when the value of migration is positive, as illustrated in Figure 4 below.

Figure 4: The Value of Migration

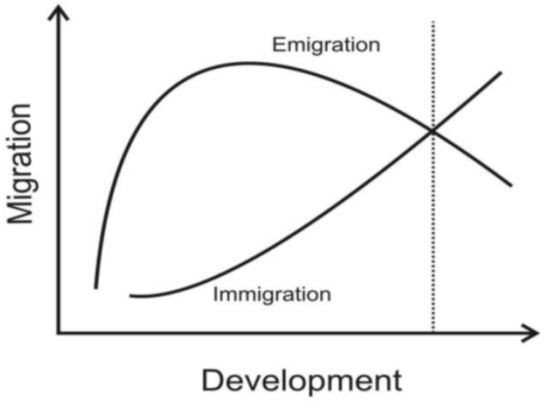


Source: The graph was created based on the description provided by Carling(2002, p.6)

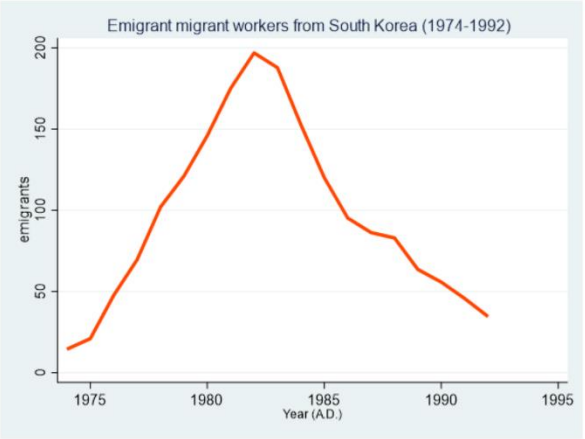
However, push-pull and neo-classical models are criticized for being too simplistic and unable to describe empirical patterns related to migration (e.g., de Haas, 2021; Clemens, 2022). The New Economics of Labor Migration (NELM) theory argues instead that the household or family unit is the more appropriate level of analysis. People decide collectively not just to maximize total income but to minimize the risk to family income due to market failure, unemployment, or a shortfall in productivity, such as a failed harvest (Kolbe, 2021, p. 26). The Dual Labor Market Theory links migration to the structural demand for foreign labor in industrial economies. The Dependency and World System theory suggests that capitalist expansion drives migration from the periphery to the core regions. In contrast, the Cumulative Causation Theory and Network Theory of migration emphasize the self-reinforcing nature of migration through social networks and feedback loops. Over time, several other theories have been developed to explain international migration.

Migration Transition Theory: Zelinsky (1971) hypothesized an inverted U-shaped relationship between emigration and development (Figure 5, below), which he termed the mobility transition. De Haas (2010b) further elaborated this concept, arguing that migration is integral to broader development and social transformation linked to modernization and industrialization. Migration transition theory posits that emigration levels initially increase as development progresses but later stabilize. The following figures illustrate the dynamics of migration transition.

Figure 5: Migration Transition Framework (left)-Migration Transition in South Korea (right)



Source: de Haas, Hein. (2010). Permission granted by the author.



Source: Author's creation based on World Bank (2022) data

South Korea's experience (Figure 5 above) is a model for understanding migration transitions in other developing nations. It illustrates how emigration tends to peak during a critical stage of development before gradually declining as prosperity increases.

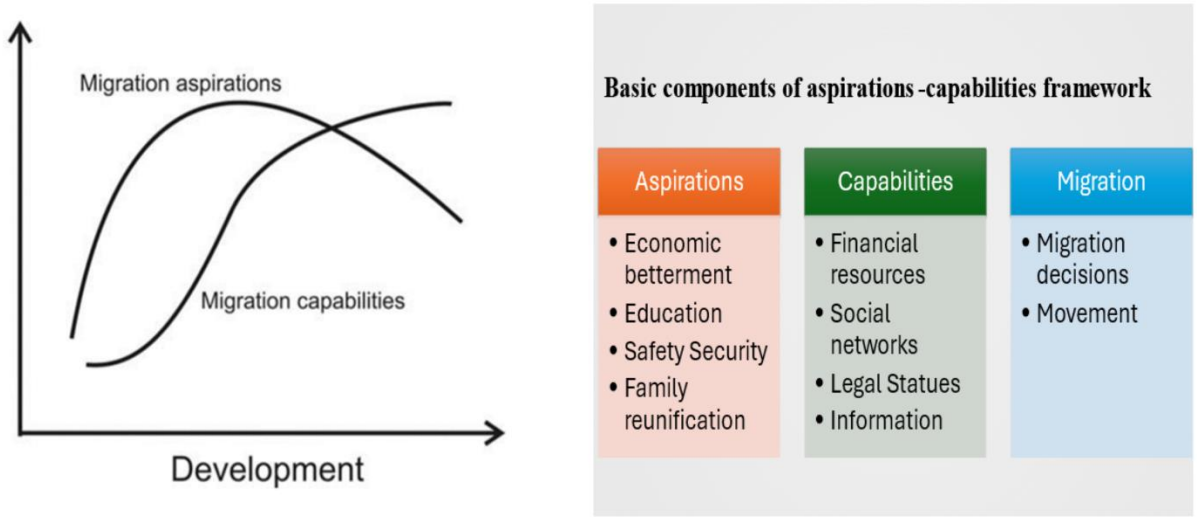
2.2 Migration Aspirations and Capabilities (A-C) Framework

Conventional migration theories, such as push-pull models (Lee, 1966) and Neo-Classical Theories (Harris & Todaro, 1970), argue that migration is primarily motivated by income, employment, and regional opportunity disparities. Similarly, the migration transition theory (as explained above) views migration as integral to broader development and social transformation processes linked to modernization and industrialization. However, a paradox exists: Socioeconomic development in impoverished societies often initially spurs migration. Those theories can only partially explain why only 3.6% of the global population migrates, while 96.4% remain in their home countries despite the growing inequalities in wealth and opportunities. Alongside why people migrate, why people choose not to migrate has also received growing attention in migration studies. Amidst this paradox, Carling (2002) introduced the concept of 'Involuntary Immobility'- the desire to migrate without means- especially in poor countries. He argued that insights into migration and development can be gained by analyzing aspirations (the desire to migrate) and migration capabilities (the actual ability to do so). This framework helps explain why not all people who aspire to migrate can do so.

Borrowing the concept of Sen's (1999) capability approach, which emphasizes individuals' freedom to achieve their valued goals, De Haas (2021) integrated this concept into the Aspirations-Capabilities (A-C) framework. He argued that migration decisions are shaped by people's aspirations to improve their lives and their migration capabilities, which are influenced by broader social, economic, and political factors. For him, migration is not simply driven by poverty but rather by relative deprivation, where individuals with rising aspirations may seek migration to fulfill their potential, provided they have the resources and opportunities to do so. Thus, the Aspirations-Capabilities framework explains migration decisions by considering individuals' desires and motivations (aspirations) alongside their resources and opportunities (capabilities). As long as aspirations grow faster than local opportunities can offer, it is likely that people's

aspirations to migrate will increase. The framework indicates that migration is the combined result of two factors: (1) the aspiration to migrate and (2) the ability to migrate, which can be shown in the following two figures:

Figure 6: Migration as an Outcome of Aspirations and Capabilities



Source: De Haas (2021). Author's permission granted

2.3 Literature on Factors Influencing Migration Decisions

Miller (1973) argued that out-migration decreases in regions with high wages, rapid employment growth, and mild winters but increases in areas with high unemployment rates. He highlighted the economic factors, particularly employment growth, as the main determinants of migration, demonstrating an inverse relationship between wages and out-migration rates. However, his study is context-specific, focusing solely on out-migration from the continental United States and the District of Columbia, and lacks a comparative analysis across different settings. Simpson (2022) studied migration's demographic and economic determinants, including push and pull factors influencing the decision to stay or move, and identified income differentials, migrant networks, and demographic factors as robust predictors of migrant flows.

Schlottmann & Herzog (1982) challenged the notion that out-migration is unaffected by local economic conditions, revealing a significant impact of economic factors on interstate migration. However, this analysis was limited to the U.S. labor force. Similarly, Jennissen (2003) investigated the economic determinants of net international migration in Western Europe from 1960 to 1998 and found a positive correlation between GDPpc and international migration, while employment levels were negatively associated with migration. Jennissen's research primarily focuses on destination countries within a European context. Likewise, Lucas (2006) concluded that gaps in earnings opportunities and employment probabilities significantly shape the migration streams.

Migration scholars, such as Borjas (1989) acknowledged that individuals migrate across borders in response to labor demand and supply differences, moving from regions with lower wages and abundant labor to those with scarce labor and higher wages. The Scholars including De Haas (2011); Feld (2021); Hagen-Zanker (2008); Harris (2005); Maimbo & Ratha (2005); Douglas S. Massey (1999); Postel-Vinay & Domingues Dos Santos (2003) have primarily focused on the impacts of migration on destination countries, commonly referred to as the 'receiving-country bias

(De Haas, 2021).' Similarly, studies focusing on origin countries primarily emphasize the impact of migration and remittances on different aspects of socioeconomic development. Scholars such as Maimbo & Ratha (2005), Özden & Schiff (2006); Pan & Sun (2024); Postel-Vinay & Domingues Dos Santos (2003); Harris & Todaro (1970); and Wahba (2021) have assessed the impacts of migration and remittances on various aspects of socioeconomic life in migrant-origin countries. However, these studies primarily focus on the impact of migration on development, while the influence of development on migration trends receives less attention.

In a study of the migration-development nexus in LMICs, de Haas & Rodríguez (2010) argued that migration has always been an intrinsic part of a broader development process, social transformation, and globalization rather than a 'problem to be solved.' Similarly, analyzing Morocco's experience using a 'transitional' perspective on migration, De Haas (2007) claimed that migration results from development rather than a lack of it. He further predicted that in the long term, out-migration might decrease, and Morocco could become a destination for migrants from sub-Saharan Africa. Similarly, Haas et al. (2019) argued that migration positively impacts overall growth, innovation, and the vitality of economies and societies. A study by Nikolova (2023) sheds light on how countries' economic development levels influence the relationship between inequality and potential emigration. The study found that rising inequality is negatively associated with emigration intentions in low—and middle-income countries. Conversely, in affluent nations, heightened inequality stimulates greater desires to emigrate, particularly among high-income and highly educated individuals. In another study, Giang et al. (2020) found that people tend to move from low-income provinces to high-income ones. However, this study was limited to inter-province migration in Vietnam.

2.4 Literature on Migration Transitions

Despite the extensive theoretical discussion across migration literature, there are few empirical studies on migration transition and equilibrium. It can be observed that different studies have reported varying findings. In a pioneering study, De Haas (2010a) estimated the impact of development indicators on long-term migration patterns globally. He analyzed the relationship between development variables such as GDP per capita, Literacy, and the HDI with immigration and emigration levels. He showed that higher economic and HDI levels are linked to increased overall migration, with an inverted U-curve effect on emigration. He estimated that emigrant stocks tend to peak at GDPpc levels of approximately $12,000 (2005 levels) and HDI levels of approximately 0.8, after which they decline slowly. Similarly, Clemens (2020) examined the relationship between GDPpc and Net Emigration rates in developing countries. The results show an inverted U-curve effect on emigration across and within typical developing countries. He finds that emigration rises on average as GDPpc initially rises in poor countries, slowing after roughly US $5,000 at PPP value and reversing after roughly $10,000. However, this study also focuses on emigration rates, which may not fully capture the broader spectrum of migration trends and patterns needed to infer migration decisions and capabilities.

Dao et al. (2018) shed light on the role of both microeconomic drivers (i.e., financial incentives and constraints) and macroeconomic drivers, as well as the skill composition of the population. Using the double decomposition model, they further distinguished between migration aspirations and realization rates by education level. Overall, they provide consistent evidence that the role of financial constraints, while relevant for the poorest countries, is limited. Instead, a significant fraction of the increasing segment is explained by the skill composition and macroeconomic drivers (i.e., by factors that do not change in the short run). The latter effect is

significant in countries where GDPpc in PPP value is between $1500 and$6000. They argue that migration increases with development because the proportion of college graduates increases, and this group has the highest propensity to emigrate abroad. Their concluding results suggest that a rise in income may increase college graduates' and average emigration rates in the long run. This paves the way for testing further the influence of human development factors like GDP per capita and the HDI on migration equilibrium and transition. Likewise, Bencek & Schneiderheinze (2020) found a negative association between economic growth and emigration flows. They claimed that the highest average emigration rates are observed in countries with incomes between 7000 and 14,000 USD. However, this study focuses solely on emigration to OECD countries, overlooking broader trends as low-income migrants face barriers to OECD migration.

2.5 Literature on Aspirations-Capabilities Framework

Few empirical studies examine how domestic socioeconomic factors influence migration aspirations and capabilities. In a seminal article, "Does Development Reduce Migration? Michael A. Clemens (2014) argues that economic development does not necessarily lead to reduced migration; it can generate more migration under certain conditions. Clemens challenges the conventional notion that poverty is the primary driver of migration and explores how economic opportunities, infrastructure development, education, and income inequality shape migration decisions. He further demonstrates that development can create pathways for people to migrate by improving mobility, expanding networks, and increasing individuals' aspirations and capabilities to move. He emphasizes that migration is not a mere response to poverty but rather a complex outcome influenced by individual choice, structural opportunities, and global inequalities.

Similarly, De Haas (2010b) proposes to incorporate the notions of agency and individual aspirations into transition theory by conceptualizing migration at the microeconomic level as a function of aspirations (as characterized by an inverted U-shaped relationship) and capabilities (that increase monotonically with development). Countering the notion of 'Development instead of migration policies' of developed countries as a misguided idea, De Haas (2007) forecasted that in the poorest countries, especially the sub-Saharan African countries, which are the target of much international aid, any take-off development is likely to lead to accelerating take-off emigration for the coming decades, which is the opposite of what 'development instead of migration' policies implicitly or explicitly aim to achieve. This idea can also apply to other low-income countries.

De Haas (2021) presents a comprehensive theoretical framework for understanding migration by integrating individual aspirations and structural capabilities. The article proposes the Aspirations-Capabilities (A-C) framework, emphasizing the interplay between individuals' migration aspirations (desires to move) and their abilities (resources and structural conditions enabling movement). Using a comparative analysis, he argues that migration is not merely a response to economic disparities but is shaped by broader factors, including social, political, and cultural contexts. He emphasizes the importance of agency in migration, defining human mobility as the capability to choose where to live, including the option to stay. He concludes that restrictive migration policies and border controls often fail to reduce migration; instead, they reshape it by pushing migrants toward riskier and irregular routes. This framework provides a nuanced perspective, challenging simplistic push-pull models and highlighting the need for policies that consider the complex dynamics of migration aspirations and capabilities. However, this is a theoretical elaboration rather than an empirical study to test migration aspirations and capabilities.

Bonfanti (2014) proposed a capability-based framework for international migration. It conceptualizes human mobility as a fundamental capability and migration as a related function. Its

impact on migrants' well-being depends on the interaction between migrants' agency and a range of multi-layered structural factors. However, this is a conceptual study. Likewise, Eichsteller (2021) explores how Amartya Sen's capability approach provides a valuable framework for understanding migration as an exercise of individual freedom and agency. The author emphasizes the importance of expanding people's real opportunities to achieve the life they value, including the voluntary choice to stay or migrate. However, this is limited to a theoretical study with normative and conceptual analysis. Preibisch et al. (2016) emphasized the importance of expanding individuals' real opportunities and addressing structural inequalities. They critique migration policies prioritizing economic remittances over human development. They advocate for policies that empower individuals, ensure migration is a voluntary choice rather than a forced necessity, and contribute meaningfully to personal and societal development.

2.6 Research Gap

No previous studies have attempted to measure individuals' capabilities to migrate or stay. Studies such as Carling (2002); De Haas (2010b), 2021) have extensively discussed the Aspirations-Capabilities (A-C) migration framework, primarily focusing on aspirations and capabilities to migrate rather than stay. Most previous studies in this area are primarily descriptive and interpretative. In contrast, this study shifts the focus from aspirations and capabilities to migrate toward capabilities to stay, particularly emphasizing the latter. Meanwhile, this study seeks to demonstrate that individuals' capability to stay can be more effectively assessed using the net migration rate.

Most previous studies have focused on the effect of migration on development, often adopting a 'receiving-country bias,' as noted by De Haas (2021). Conversely, this study focuses on the impact of domestic socioeconomic development on migration dynamics. This shift in focus offers nuanced insights into the development-migration nexus by investigating how domestic development factors influence individuals' migration decisions and capabilities in origin societies. We argue that improved socioeconomic development in origin countries strengthens individuals' ability to stay, thereby helping to balance migration flows.

Previous studies have used emigration flows and stocks as dependent variables to measure migration patterns and trends. However, they alone may not accurately capture the migration dynamics, as high emigration can coincide with high immigration. This study utilized annual net migration data rather than traditional metrics such as emigration flows or stocks. Ravenstein (1885) argued that migration includes both the inflow and outflow of people, so understanding the impact requires considering the net migration. Castles & Miller (2009) emphasized the importance of recognizing the stock and the flow of migrants when examining migration processes. Similarly, Hsing (1996) also chose the net migration rate as the dependent variable, believing bilateral migration can be analyzed simultaneously. As mentioned, we aim to demonstrate that individuals' capability to stay can be more effectively assessed using net migration rates, where positive coefficients reflect an improvement in their ability and willingness to remain in their home countries.

Another novel aspect of this study is using the two-step System GMM, a dynamic panel estimator, to assess the influence of domestic socioeconomic development on migration decisions and capabilities. Arellano & Bover (1995); Blundell & Bond (2000) and; Roodman (2009), recommend using the GMM approach to address the potential biases in the dynamic panel model, such as endogeneity, reverse causality, heteroscedasticity, and omitted variable bias. While many

prior studies focus on specific countries or regions, this study encompasses 109 low- and middle-income countries, enhancing the potential generalizability of the results.

3. Methodology and Estimation Strategy

3.1 Data Sources

This study primarily utilizes panel data from a cohort of 109 low- and middle-income countries, covering 2002 to 2018. The list of the countries is provided in Appendix-D. They were selected based on the World Bank's income-level classification (2022) and data availability. Some countries with extreme net migration values were excluded to avoid skewed results without prejudice. A dataset covering 33 upper-middle-income countries from 1991 to 2018 (28 years) has also been prepared to examine the migration transition threshold through the QDA method. According to the IOM (2022), LMICs are the primary sources of international migrants. Almost 75% of international migrants and 70% of total migrant workers originate from LMICs, making these regions both the primary source of migrants and the leading destination of remittance flows. Of the total global remittance flow of USD 702 billion in 2020, LMICs received USD 540 billion. This amount exceeded Official Development Assistance (ODA). It nearly matched these countries' Foreign Direct Investment (FDI), proving them the largest and most reliable family income sources and foreign capital reserves for those economies. The World Bank (2022) statistics show that they are also the homes to 75% of the world's population and 62% of the world's poor.

3.2 Variables and Selection Criteria

The variables are chosen based on their relevance to understanding migration dynamics and their availability in the dataset. The Net Migration Rate (NMR) constitutes the primary dependent variable of interest. NMR represents the net migration balance in LMICs of migrant origin. It is calculated as the difference between the number of immigrants and emigants per 1,000 people. Positive values indicate net immigration, while negative values reflect net emigration. The latter scenario is predominant in most LMICs, requiring the implementation of appropriate measures to address these issues.

GDP per capita and the Human Development Index (HDI) are the primary explanatory variables proxied to a country's socioeconomic development as the principal determinants of migration capability. De Haas (2010b) and Jennissen (2003) also used GDPpc as an independent variable in studying migration transition and the economic determinants of net migration. The HDI measures average achievements in health, education, and standard of living, providing a broader measure of well-being and development than income alone. The HDI rankings are defined by the United Nations Development Programme (UNDP) and are categorized into four levels based on the HDI score. The HDI scores are categorized into four distinct ranges based on levels of development. A "Very High" HDI corresponds to scores of 0.800 or above, while a "High" HDI ranges from 0.700 to 0.799. "Medium" HDI scores fall between 0.550 and 0.699, and "Low" HDI includes scores of 0.549 or below (UNDP (2023–24), 2024).

Several control variables are included in estimation equations to account for factors that could influence the dependent variable, thereby isolating the effect of the primary independent variables of interest. In this context, variables such as Unemployment Rate and Inflation are essential as they capture different dimensions of a country's economic performance and development. These variables help mitigate biases arising from unobserved heterogeneity by controlling for underlying economic conditions that may confound the results. Additionally, governance and socio-political indicators like Corruption Control, Rule of Law, Political Stability and Absence of Violence,

Government Integrity, Government Effectiveness, Civil Liberties, Civic Participation, and Economic Freedom reflect the institutional quality and democratic processes that could impact the dependent variable. Other critical controls include technological and infrastructural variables like Internet Use and demographic and health-related factors like Life Expectancy, Maternal Mortality Ratio, Fertility Rate, and Population Growth. By incorporating these controls, the model ensures a more precise estimation of the relationship between the independent and dependent variables, capturing the influence of these broader contextual factors.

The datasets are drawn from various sources, including the World Development Indicators (WDI) published by the World Bank (2022), the Worldwide Governance Indicators (WGI) published by the World Bank (2022/2023), and the Migration Data Portal maintained by the International Organization for Migration (IOM). Additional sources include the Index of Economic Freedom (Heritage Foundation) and the Varieties of Democracy (V-Dem) Dataset, produced by the V-Dem Institute at the University of Gothenburg. The table of variable descriptions is provided in Appendix A.

3.3 Methodology and Estimation Strategy

The study adopts the two-step System GMM (Generalized Method of Moments) regression model and some Quantitative Descriptive Analysis (QDA). This dynamic panel data estimator incorporates the lagged dependent variable as one of the independent variables. As suggested by Arellano & Bover (1995); Blundell & Bond (2000) and; Roodman (2009), the GMM approach is well-suited for addressing potential issues in dynamic panel data models, such as endogeneity, heteroscedasticity, omitted variable bias, and measurement errors. GMM model is specifically designed for situations involving a lagged dependent variable, a small period (T), and a larger number of cross-sections, groups, or individuals (I), where T< I. It is suitable for instrumental variable (IV) estimation when the number of instruments (Z) is equal to or less than the number of individuals (I) and when the independent variables are not strictly exogenous. In GMM estimation, Hansen's testing of overidentifying restrictions is used to test the null hypotheses of the overall validity of the instruments used. The p-value of Hansen's testing should not be too high or too low (Roodman, 2009). The Arellano–Bond test for autocorrelation is employed to test the null hypothesis that there is no serial correlation in the differenced error term. The test examines first-order (AR(1)) and second-order (AR(2)) autocorrelation. While AR(1) may be significant (indicating expected first-order serial correlation in differences), AR(2) should be insignificant (p-value > 0.05), implying that no second-order serial correlation exists.

The basic model for the analysis is constructed as follows

$$NMR_{it} = f(Domestic\_Socioeconomic\_Level_{it}, X_{it}) + \epsilon_{it} \quad (1)$$

Where, NMR_{it} is the dependent variable, representing the Net Migration Rate (a representation of individuals' migration decisions) at time t for country$_i$. Domestic_Socioeconomic_Level$_{it}$ is a key explanatory variable capturing the socioeconomic indicators (representing individuals' capabilities to stay) at time $_t$ for entity $_i$. X_{it} is a vector of additional control variables that may influence migration trends. ϵ_{it}: is the error term, accounting for unobserved factors at time $_t$ for entity $_i$.

In the above context, the basic estimation equation is specified as follows

(For dynamic panel GMM regression): $$Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 X'_{it} + \beta_3 Z'_{it} + d_t + \varepsilon_{it} \quad (2)$$

Where, Y_{it} represents the dependent variables, i.e., NMR of the country$_i$ at year$_t$, Y_{it-1} is one period lag of the dependent variable, X_{it} represents the explanatory variables such as GDPpc, and the HDI (used as a proxy for individuals' capabilities to stay) Z_{it} represents the vector of control variables, d_t denotes the year dummy, and ε_{it} indicates the error term. β_1, β_2, and β_3 are the coefficients of

each explanatory variable, which are the parameters of interest. The detailed model specifications are provided in Appendix C.

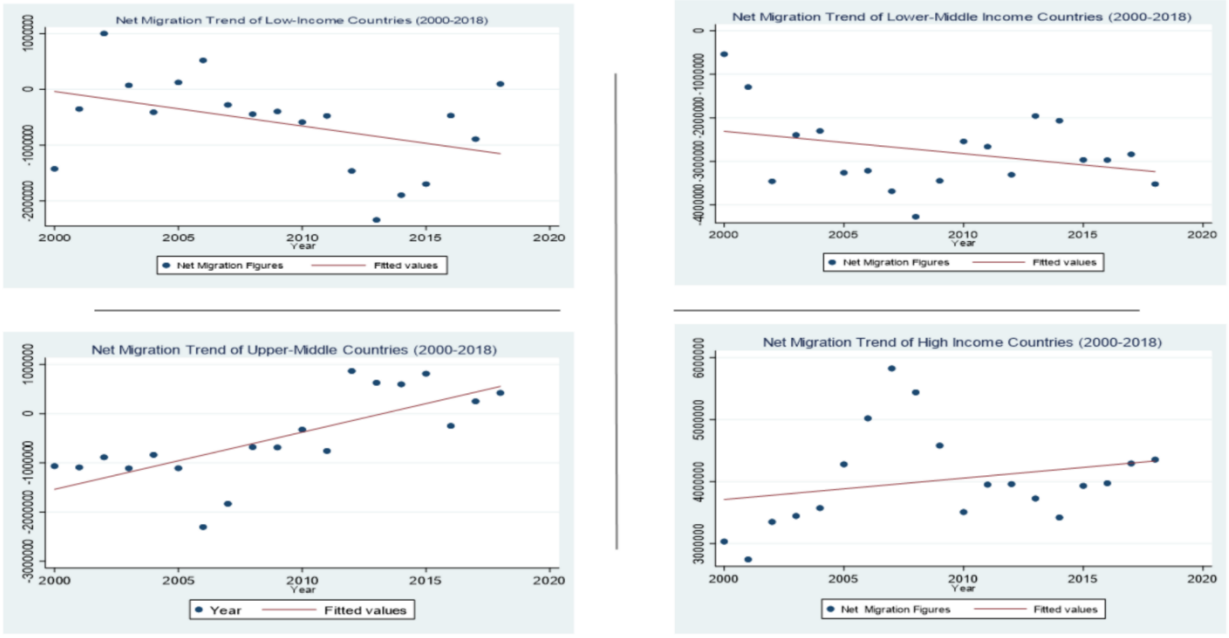
The Variance Inflation Factor (VIF) measures how much the variance of a regression coefficient is inflated due to multicollinearity with other predictors in the model. A VIF of 1 means no correlation exists between the model's predictor variable and the other predictor variables. VIF values between 1 and 5 suggest moderate correlation but generally not enough to warrant corrective measures. VIF values above 5 indicate high correlation and are a cause for concern, suggesting the presence of multicollinearity. In our model, the correlation metrics among the variables indicate no high correlation coefficients, suggesting a low risk of multicollinearity issues. In the tests, the VIF 1.57 and 1.2 are much closer to 1 than to 5, which suggests that multicollinearity is not a significant issue in these models.

4. Results and Discussion

The study investigates how domestic socioeconomic development influences individuals' migration decisions and the capability to stay. Panel data from 109 low—and middle-income countries (LMICs) spanning 2000 to 2018 were analyzed, with the Human Development Index (HDI) and GDP per capita (GDPpc) serving as key explanatory variables determining individuals' decisions and capabilities to stay at home. A total of 15 dynamic panel regressions were conducted using a two-step System GMM approach under varying conditions to evaluate the impact of GDPpc and HDI on net migration.

4.1 Insights from Quantitative Descriptive Analysis (QDA)

Figure 7: Net Migration Trends by Income Groups (2000–2018)

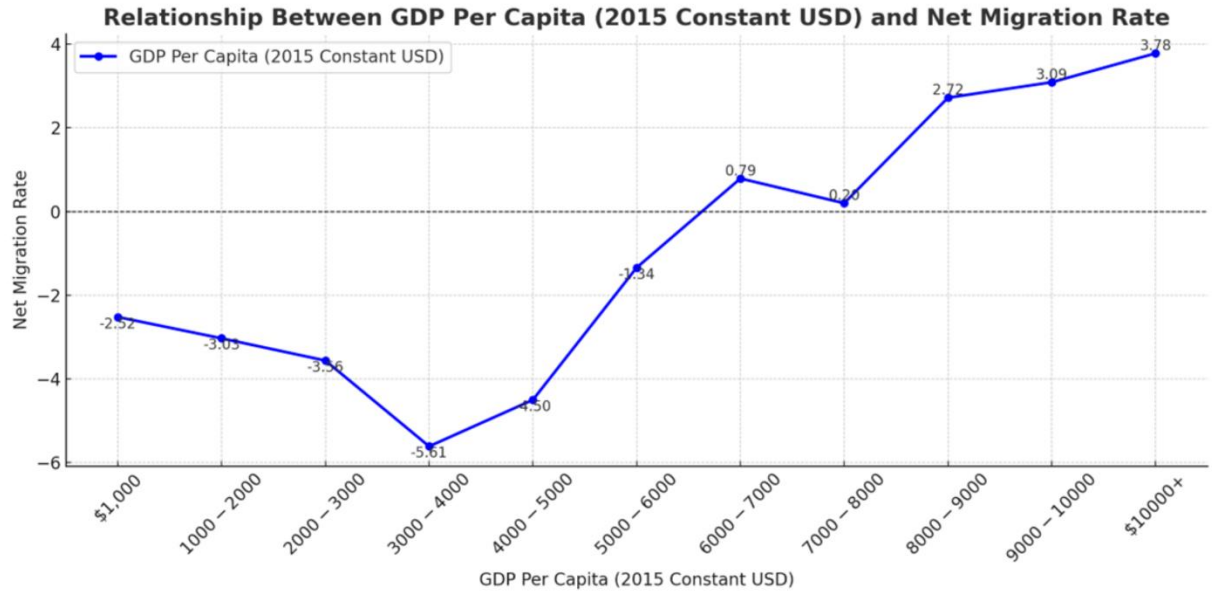


Source: Created by the author using data from the World Bank (2022).

Figure 7 above illustrates net migration trends from 2000 to 2018 across four income groups: low-income, lower-middle-income, upper-middle-income, and high-income countries. From the

migration capabilities perspective, the observed patterns reflect the influence of socioeconomic development on individuals' migration behavior. Persistent out-migration was observed in low- and lower-middle-income countries over the study period, never reaching migration equilibrium. These trends support the common belief that disparities in global wealth and human development are the main factors driving international migration (Harris, J. R. & Todaro, 1970; Lee, 1966; Ravenstein, 1885). However, they question the assumption of capability constraints (Carling, 2020; De Haas, 2010b), posing that limited resources in less developed countries hinder emigration. Furthermore, starting from the lower bound of the upper-middle-income category, net migration has consistently increased, eventually reaching equilibrium and transition at the upper bound. High-income countries have shown positive and steadily increasing net migration trends throughout the study period. Clemens (2014) and De Haas (2010b) also emphasized a similar pattern.

Figure 8: Influence of Income Level on Migration Decisions



Source: Author's calculation using net migration data from 107 LMICs (1990–2020)

This graph (Fig 8) examines the relationship between GDPpc and the net migration rate (NMR) through the lens of migration transition and capabilities perspective. Countries with GDPpc below $2,000 exhibit negative but nearly flat net migration trends. This pattern reflects the early stages of migration, where economic disparities between poor and wealthy countries may drive high migration aspirations. However, insufficient resources likely constrain migration capabilities despite a strong desire to migrate (Carling, 2002; De Haas, 2021). In contrast, countries with a GDP per capita between $2,000 and $4,000 experience a sharp decline in net migration, suggesting that populations within this income range exhibit high mobility. Beyond a GDPpc of $4000, the decline in net migration becomes less pronounced, eventually turning positive and reaching an equilibrium at approximately $7000. In this context, a GDPpc of around $4000 may represent a threshold or 'take-off' point for the "take-off" in migration transition (De Haas, 2010b; Zelinsky, 1971). Similarly, net migration rates rise significantly in high-income countries with a GDPpc

exceeding $8,000, indicating that achieving a GDPpc of at least $4000 is critical for initiating the migration transition. The overall trends suggest that improvements in socioeconomic development in the form of income growth in migrant-origin countries are associated with an increase in net migration and, consequently, with individuals' decision and capability to stay.

4.2 Insights from the Dynamic Panel Regression Analysis

Models (1-5) in Table 1 present several econometric models to analyze how socioeconomic development, measured by the Human Development Index (HDI) as an explanatory variable, affects migration trends and capabilities in LMICs. The HDI serves as a proxy for socioeconomic development in countries of migrant origin. Five models are constructed and estimated using a Two-step System GMM approach, with the Net Migration Rate (NMR) as the dependent variable. We aggregate the data by different HDI levels to capture the influence of domestic socioeconomic development on net migration and, consequently, on migration decisions to stay. Model 1 (Full Sample) includes all countries in the dataset regardless of HDI level, providing a general overview of the relationship between HDI and NMR. Model 2 (HDI < 0.5) focuses on countries with very low levels of human development, examining migration dynamics in this subset. Model 3 (HDI > 0.5 & < 0.7) analyzes migration trends in countries with low to medium levels of development. Model 4 (HDI > 0.5 & < 0.8) investigates the relationship in countries with moderately higher HDI levels. Finally, Model 5 (HDI > 0.5 & < 0.9) explores migration patterns in countries nearing high development but still classified as middle-income. Each GMM model incorporates the lagged NMR (NMRt−1) value as an explanatory variable to account for persistence in migration trends. Details of the models are provided in Appendix C.

Table 1: Dynamic Panel Regression Results [The Influence of Domestic Socioeconomic Development on Migration Decisions in LMICs: Using HDI as a Proxy for Socioeconomic Development (1)]

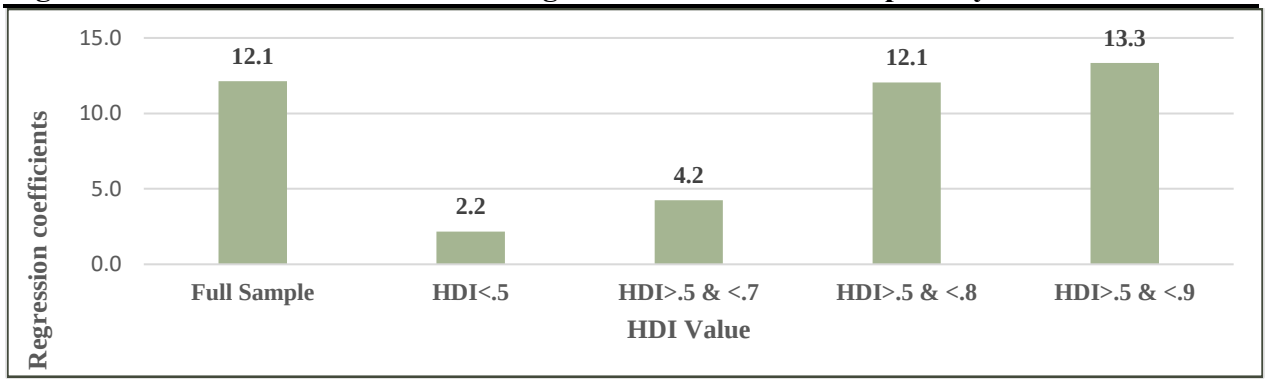
Dependent Variable: Net Migration Rate (NMR) of the countries **Explanatory Variable:** Human Development Index (HDI) – a proxy for socioeconomic development **Data**: A dataset comprising 109 LMICs for the period 2000–2018					
Econometric Model	Two-step System GMM				
	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
VARIABLES	NMR	NMR	NMR	NMR	NMR
	Full Sample	HDI<.5	HDI>.5 & <.7	HDI>.5 & <.8	HDI>.5 & <.9
NMR_lag	0.556***	0.510***	0.858***	0.764***	0.726***
	(0.177)	(0.179)	(0.0694)	(0.105)	(0.130)
HDI	**12.13***	**2.177**	**4.239***	**12.05***	**13.34***
	(6.908)	(7.768)	(2.460)	(6.540)	(7.874)
UNEMP	0.216*	0.000758	0.0498	0.120**	0.160**
	(0.117)	(0.140)	(0.0443)	(0.0491)	(0.0745)
ECO_FREEDOM	0.190	0.0639	-0.000394	-0.0436	0.0273
	(0.162)	(0.0778)	(0.0371)	(0.0530)	(0.0591)
POPGRO	**2.724****	**2.130***	**0.760***	**1.512***	**1.805***
	(1.282)	(1.291)	(0.454)	(0.799)	(0.968)
lnPOPTOTAL	**1.431****	**0.637**	**0.333**	**0.382***	**0.661***
	(0.621)	(0.599)	(0.301)	(0.202)	(0.355)
INTERNET	-0.0138	0.0479	-0.00337	-0.00817	-0.0131
	(0.0123)	(0.0456)	(0.00765)	(0.00932)	(0.0119)
Constant	-47.91***	-20.79	-9.848	-14.97**	-25.04**
	(16.27)	(13.06)	(8.284)	(6.455)	(12.04)
Observations	1,611	391	704	1,149	1,216
Number of Group (N)	101	37	74	88	88

Number of Instruments	71	71	71	71	71
AR(1)	0.024	0.000	0.029	0.092	0.081
AR(2)	**0.135**	**0.138**	**0.839**	**0.459**	**0.354**
Hansen Statistic	**0.648**	**0.029**	**0.198**	**0.028**	**0.127**

*Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Source: Author's computation using two-step system GMM*

The insignificant AR(2) p-value confirms no second-order autocorrelation, validating the instruments in the results above. Likewise, the Hansen test evaluates the validity of the instruments used in our GMM estimation. It tests the null hypothesis that the instruments are valid and uncorrelated with the error term. A p-value greater than 0.05 suggests that the instruments are valid. Most of the Hansen statistics satisfy this criterion. However, two p-values fall below the threshold, possibly due to the smaller number of groups resulting from the HDI cap applied in the regression model. The key highlights of the regression results are presented in Figure 9 below.

Figure 9: Influence of HDI Level on Migration Decisions and Capability



Source: Created by the author based on Table 1.

The dynamic panel GMM estimation results in Table 1 demonstrate that increasing HDI levels significantly contributes to positive net migration, enhancing individuals' capabilities to stay in LMICs from the early stages of socioeconomic development. The coefficients for the lagged NMR look positive and highly significant ($p < 0.01$) across all models, indicating that past migration trends strongly influence current migration rates. For the HDI< 0.5 and HDI > 0.5 & < 0.7 group (Models 2 & 3), HDI coefficients 2.2 and 4.2, respectively, are relatively weak but positive, suggesting a moderate association between HDI and NMR within these subgroups. These findings align with the Aspirations-Capababilites (A-C) framework (Carling, 2002; De Haas, 2010b, 2021), which posits that not all individuals with migration aspirations have the capability to migrate, particularly in impoverished communities. However, for the HDI > 0.5 & < 0.8 and HDI > 0.5 & < 0.9 groups (Models 4 and 5), the coefficients (12.05 and 13.34, respectively) are significantly higher, indicating that socioeconomic development fosters positive net migration in origin countries. This substantial increase underscores the role of HDI levels in enhancing individuals' capability to stay in their home countries, thus contributing to migration balance.

Regarding other control variables, the coefficients for population growth and total population are positive and statistically significant across all models; this outcome likely reflects the positive influence of demographic factors, such as population growth and total population, on net migration. However, migration constraints prevent individuals from migrating proportionately to

population growth and size, leading to positive net migration for sending countries. However, unemployment (UNEMP) rates show weak significance in specific subsamples, indicating a potential localized effect. Other control variables, such as economic freedom (ECO_FREEDOM) and internet usage (INTERNET), do not show statistically significant results across most models, suggesting their limited influence on net migration rates compared to HDI.

Models (1-5) in Table 2 below present an analysis of the influence of HDI, employing different sets of control variables to assess the robustness of the results. In Model 1, the control variables include the unemployment rate (UNEMP), economic freedom (ECO_FREEDOM), population growth (POPGRO), total population (LnPOPTOTAL), and maternal mortality rate (logMMR). Model 2 introduces Internet access (INTERNET) as an additional control variable. Models 3 and 4 exclude logMMR but incorporate civil participation (Civic_Part) as a control variable. Model 4 further includes both logMMR and INTERNET simultaneously. Finally, Model 5 includes all the aforementioned control variables in the regression analysis. The AR(1), AR(2), and Hansen tests confirm the model's validity and its instruments.

Table 2: Influence of Domestic Socioeconomic Development on Migration Decisions in LMICs: Using Human Development Index (HDI) as a Proxy for Socioeconomic Development (2):

Dependent Variable: Net Migration Rate (NMR) of the countries **Explanatory Variable:** Human Development Index (HDI) – a proxy for socioeconomic development			**Data:** 109 LMICs (2000–2018) **Robustness Check**: By employing various control variables in the estimation equations		
Econometric Model	Two-step System GMM				
	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
VARIABLES	NMR	NMR	NMR	NMR	NMR
NMR_lag	0.546***	0.556***	0.528***	0.531***	0.515***
	(0.167)	(0.177)	(0.180)	(0.175)	(0.177)
HDI	**9.144***	**12.13***	**12.91***	**11.89***	**13.79***
	(4.965)	(6.908)	(7.358)	(6.634)	(7.751)
UNEMP	0.232**	0.216*	0.211*	0.217*	0.214**
	(0.110)	(0.117)	(0.110)	(0.114)	(0.106)
ECO_FREEDOM	0.129	0.190	0.171	0.166	0.153
	(0.116)	(0.162)	(0.136)	(0.141)	(0.117)
POPGRO	**2.768****	**2.724****	**2.949****	**3.005****	**3.101****
	(1.325)	(1.282)	(1.267)	(1.414)	(1.402)
lnPOPTOTAL	1.317**	1.431**	1.294**	1.360**	1.230**
	(0.577)	(0.621)	(0.597)	(0.589)	(0.599)
logMMR	-0.249			-0.216	-0.0474
	(0.826)			(0.917)	(1.008)
INTERNET		-0.0138	-0.0125	-0.0131	-0.0133
		(0.0123)	(0.0131)	(0.0136)	(0.0130)
Civic_Part			-1.330		-1.307
			(3.968)		(3.899)
Constant	-40.06***	-47.91***	-44.62***	-44.73**	-43.14**
	(14.51)	(16.27)	(14.42)	(17.59)	(17.10)
Observations	1,641	1,611	1,552	1,611	1,552
Number of Group (N)	101	101	97	101	97
Number of Instruments	71	71	71	71	71
AR(1)	0.024	0.024	0.026	0.024	0.026
AR(2)	**0.135**	**0.135**	**0.133**	**0.131**	**0.130**
Hansen Statistic	**0.648**	**0.648**	**0.393**	**0.655**	**0.394**

*Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1; Source: Author's computation using two-step system GMM*

The research results indicate a strong and statistically significant relationship between the Human Development Index (HDI) and the Net Migration Rate (NMR) in 109 low- and middle-income countries (LMICs) over the period 2000–2018. The coefficients for HDI across all models (1 to 5) are positive and significant at the 10% level, ranging from 9.144 to 13.79, indicating that improvements in socioeconomic development, as proxied by HDI, are associated with higher net migration rates. These trends suggest that improved socioeconomic conditions in origin countries enhance individuals' ability to stay and contribute to a migration balance. Based on this analysis, it can be argued that individuals' capability to stay can be more effectively assessed using the net migration rate, where positive coefficients reflect an improvement in their ability and willingness to remain in their home country. The lagged dependent variable (NMR_lag) also shows significant persistence, with coefficients between 0.515 and 0.556, suggesting that past migration trends strongly influence current rates. Robustness checks, incorporating various control variables, reinforce the consistency of these findings. The control variables show consistent results similar to those in Tables 1 and 2.

Table 3: Dynamic Panel Regression Results (Influence of Domestic Socioeconomic Development on Migration Decisions in LMICs: Using GDP per capita as a Proxy for Socio-economic Development)

The Influence of Domestic Socioeconomic Development on Migration Decisions in LMICs					
Dependent Variable: Net Migration Rate (NMR) of the countries **Explanatory Variable:** GDPpc(log-transformed, constant 2015 US$) – used as a proxy for socioeconomic development.			**Robustness Check:** Conducted by employing various control variables in the estimation equations **Data:** Analysis based on a dataset comprising 109 LMICs from 2000–2018.		
Econometric Model	Two-step System GMM				
	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
VARIABLES	NMR	NMR	NMR	NMR	NMR
NMR_lag	0.621***	0.592***	0.576***	0.567***	0.642***
	(0.138)	(0.151)	(0.150)	(0.150)	(0.145)
logPerCap	**0.994***	**1.171***	**1.244***	**1.352***	**1.785****
	(0.534)	(0.629)	(0.682)	(0.765)	(0.850)
logUNEMP	0.544	0.558	0.523	0.485	0.737*
	(0.363)	(0.403)	(0.436)	(0.643)	(0.416)
ECO_FREEDOM	0.127	0.180	0.170	0.156	-0.00914
	(0.106)	(0.127)	(0.121)	(0.127)	(0.104)
POPGRO	**1.746****	**1.901****	**2.083***	**2.221****	**0.893**
	(0.695)	(0.791)	(1.095)	(1.008)	(0.845)
lnPOPTOTAL	**1.286****	**1.565****	**1.513****	**1.495***	**1.542****
	(0.579)	(0.717)	(0.744)	(0.891)	(0.701)
INTERNET		-0.00988	-0.0107	-0.0120	0.00523
		(0.0103)	(0.0106)	(0.0120)	(0.0104)
Civic_Part				-1.305	-3.005
				(3.302)	(3.268)
logMMR			-0.0899	-0.00801	1.217
			(0.714)	(0.806)	(0.830)
INFLATION					-0.0262
					(0.0213)
Constant	-40.03**	-48.93**	-47.95**	-47.54**	-45.52**
	(16.21)	(19.60)	(20.35)	(21.55)	(18.96)

Observations	1,666	1,634	1,634	1,555	1,453
Number of Group (N)	103	103	103	97	93
Number of Instruments	72	72	72	72	71
AR(1)	0.021	0.024	0.024	0.027	0.034
AR(2)	**0.126**	**0.145**	**0.143**	**0.137**	**0.092**
Hansen Statistic	**0.319**	**0.253**	**0.209**	**0.325**	**0.450**

*Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1; Source: Author's computation using two-step system GMM*

As shown in Table 3 above, the influence of GDP per capita on net migration is analyzed using different sets of control variables to evaluate the robustness of the results. Model 1 includes the unemployment rate (UNEMP), economic freedom (ECO_FREEDOM), population growth (POPGRO), and total population (lnPOPTOTAL) as controls. Model 2 introduces Internet access (INTERNET) as an additional control variable. Model 3 builds on Model 2 by incorporating maternal mortality rate (logMMR) while excluding civil participation (Civic_Part). Model 4 includes all the control variables from the previous models, and Model 5 further adds inflation (INFLATION) alongside all other control variables. The AR(1), AR(2), and Hansen tests confirm the model's validity and its instruments.

Specifically, the lagged NMR (NMR_lag) is consistently positive and highly significant across all models, ranging from 0.567 to 0.642. This highlights the persistence of migration trends, indicating that past migration patterns strongly influence current migration flows. The coefficient of logPerCap is positive and statistically significant across all the models from 1 to 5. A 1% increase in GDPpc is estimated to increase the net migration rate, i.e., capability to stay by approximately 0.99 to 1.79 units, depending on the model specification. These trends suggest that improved socioeconomic conditions in origin countries enhance individuals' ability to stay and contribute to a positive net migration balance. Based on this analysis, it can be claimed that individuals' capability to stay can be assessed using the net migration rate, where positive coefficients reflect an improvement in their ability and willingness to remain in their home country.

5. Key Findings, Contributions, Conclusions, and Limitations

5.1 Key Findings: Within the Aspirations-Capabilities (A-C) migration framework (Carling, 2002; De Haas, 2010b, 2021), individuals' capabilities are fundamental in shaping migration decisions, including the voluntary choice to stay in their home country. Using the two-step system GMM model, this study examined the influence of domestic socioeconomic development on migration decisions and individuals' capability to stay. A total of 15 dynamic panel regressions were conducted under varying conditions to evaluate the influence of GDPpc and the HDI on net migration rates. Additionally, some Quantitative Descriptive Analyses (QDA) were performed to review the migration trends and provide a foundation for the subsequent analysis and inference.

The dynamic panel regression results (table 1-3) suggested that improved socioeconomic conditions in origin countries enhance individuals' capability to stay and contribute to a positive net migration balance. The results in Table 1 reveal that increasing HDI levels significantly contributes to positive net migration, enhancing individuals' capabilities to stay in origin countries from the early stages of socioeconomic development. For the HDI< 0.5 and HDI > 0.5 & < 0.7 group (Models 2 & 3), HDI coefficients 2.2 and 4.2, respectively, are relatively weak but positive, suggesting a moderate association between HDI and NMR within these subgroups. This aligns with the Aspirations-Capabilities (A-C) framework (Carling, 2002; De Haas, 2010b, 2021), which posits that not all individuals with migration aspirations have the capability to migrate, particularly

in impoverished communities. However, the positive coefficients challenge the earlier assumption that initial stages of development invariably lead to increased migration flows and negative net migration balance. However, for the HDI > 0.5 & < 0.8 and HDI > 0.5 & < 0.9 groups (Models 4 and 5), the coefficients (12.05 and 13.34, respectively) are significantly higher, indicating that socioeconomic development fosters positive net migration in origin countries. This substantial increase underscores the role of HDI levels in enhancing individuals' capability to stay in their home countries. The positive and consistent coefficients in Tables 2 and 3 reinforce the claim that improved socioeconomic conditions in origin countries enhance individuals' capability to stay, thereby contributing to balancing migration flows. It can be inferred that an increase in income and HDI, even in low-income countries, leads to sedentary behavior in some individuals, meaning some decide not to move internationally despite having the desire to do so.

Our results presented a slightly different perspective compared to migration transition theories (Zelinsky (1971) and De Haas (2010b), which asserts that all forms of initial development progress lead to increased emigration flow sand negative net migration. The results (Tables 1-3) suggest that progress in socioeconomic development, measured by indicators such as the Human Development Index (HDI) and GDP per capita, contributes to positive net migration. These may imply that initial development enhances individuals' capabilities, enabling them to stay. Similarly, enhancing the capacity to stay may further strengthen individuals' aspirations to stay. Nevertheless, not all individuals who can stay necessarily make that choice. Therefore, we strongly recommend that the countries of migrant origin foster a conducive domestic socioeconomic environment to shift individuals' 'aspirations and capabilities to migrate' toward 'aspirations and capabilities to stay at home' as a sustainable approach to migration management.

5.2 Contributions

This study utilized annual net migration data, as suggested by (Hsing, 1996), as a more comprehensive measure of migration dynamics, accounting for inflows and outflows, rather than traditional metrics such as emigration flows or stocks. The limited availability of annual data on emigration and migration stocks presents challenges for conducting dynamic panel analysis. In this context, we demonstrated that individuals' capability to stay can be assessed using the net migration rate, where positive coefficients reflect an improvement in their ability and willingness to stay in their home country. Based on the results, it can be argued that the progress in socioeconomic development contributes to positive net migration by enhancing the individuals' capabilities to stay.

While much of the existing research has focused on the influence of migration on development, often adopting a "receiving country bias," as noted by De Haas (2021). Conversely, this study focuses on the impact of domestic socioeconomic development on migration dynamics. It offers nuanced insights into the development-migration nexus by investigating how domestic development factors influence individuals' migration decisions and capabilities in origin societies. Another novel aspect of this study is using the two-step system GMM, a dynamic panel estimator, to demonstrate the influence of domestic socioeconomic development on migration decisions and capabilities and the methods used to measure individuals' migration capabilities. This GMM approach addresses potential biases in the dynamic panel model, such as endogeneity, reverse causality, heteroscedasticity, and omitted variable bias. While prior studies often focus on specific countries or regions, this study encompasses 109 LMICs. Such a broad geographical scope allows for a more comprehensive understanding of migration decisions and capabilities.

5.3 Conclusion

As aspirations outpace livelihood opportunities in origin societies, it is reasonable to anticipate that out-migration will likely persist or even increase in the coming years in countries with low socioeconomic status. As suggested by Haas et al. (2019, p. 362), the world community will have to learn to live with large-scale migration for the foreseeable future. Therefore, governments should internalize migration as a natural and integral development component and work to create a socioeconomic environment that supports livelihoods and economic activities. Addressing structural inequalities and providing equitable access to opportunities is fundamental to reducing migration driven by hardship while acknowledging that migration, when well-managed, can significantly contribute to national development. We further emphasize the argument of de Haas & Rodríguez (2010) to conceptualize migration as an intrinsic part of broader development, social transformation, and globalization rather than a 'problem to be solved.'

Finally, migration offers immense opportunities and benefits for migrants, host**,** and origin communities. When well-managed, it can serve as both a powerful driver and an outcome of development, fostering growth and progress for individuals and their households. Thus, it is strongly recommended that migrant-origin countries shift their focus from restrictive migration policies and border controls to strategies that foster growth and sustainable development. This shift can transform international migration from an individual' forced necessity into a voluntary choice, aligning with the objectives of the 2030 Agenda for Sustainable Development Goals and the 2018 Global Compact for Safe, Orderly, and Regular Migration (GCM).

Limitations and Suggestions for Future Research

The primary challenge in migration research is the lack of reliable, comprehensive data, especially in underdeveloped countries. This study encountered similar limitations in applying the System GMM approach due to a limited number of income groups and excess instruments. Additionally, the dataset could not be extended beyond 2018 due to the impact of COVID-19 on subsequent data. While the study initially aimed to examine the influence of domestic socioeconomic development on return migration trends, it was limited by the unavailability of return migration data and insufficient annual emigration and immigration data. Future research should utilize comprehensive migration datasets, including annual, country-specific data on emigration and immigration, to deepen the understanding of post-COVID-19 migration behaviors and to inform better migration policies

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Appendix A

Descriptive Statistics: [Yearly Panel Data from 109 Low- and Middle-Income Countries (2000–2018; N=109, T=19)]

Table 4: Descriptive statistics

Variable	Variable description	Obs	Mean	Std. Dev.	Min	Max
NMR	Net Migration Rate (NMR) of the countries	2052	-2.468	6.224	-35.722	31.405
PerCap	GDP per capita (constant 2015 US$)	2058	3281.865	2719.394	255	14223
UNEMP	Unemployment rates, total (% of total labor force/modeled ILO estimate)	2014	8.059	6.604	.14	37.32
INFLATION	Inflation, consumer prices (annual %)	1919	7.182	12.047	-16.86	325
HDI	Human Development Index	2003	.602	.128	.262	.851
Govt effect	Government Effectiveness Index (reflects perceptions of the quality of public services)	1934	-.497	.561	-2.26	1.25
Civ Liberty	Civil Liberty Index (a proxy for Human Rights)	1919	.648	.222	.064	.966
Civic Part	Civic Participation Index (a proxy for the level of democracy/ (VDEM))	1900	.626	.227	.038	.962
INTERNET	Internet use (% of population)	2018	17.709	19.301	0	81.2
MOBILE	Cellular Mobile Subscription (per 100 people)	2051	56.864	46.725	0	205.04
ELECTRICITY	Access to electricity (% of population)	2062	68.563	31.825	1.28	100
LIFEEXP	Life expectancy at birth, total (years)	2071	65.787	8.134	41.957	80.013
REMITpGDP	Personal remittances received (% of	1878	5.928	7.443	.01	53.83

	GDP)					
ECO FREEDOM	Economic Freedom Index (Heritage Foundation)	1923	55.433	7.777	21.4	76.3
SecEduEnrol	School enrollment, secondary (% gross)	1426	65.997	27.316	6.114	134.442
MMR	Maternal mortality ratio (modeled estimate per 100,000 live births)	2052	248.324	270.426	1	1366
TFR	Fertility rate, total (births per woman)	2071	3.465	1.51	1.078	7.732
POPGRO	Annual Population Growth of countries (%)	2071	1.56	1.179	-2.17	5.63
URBANPOP	Urban population (% of total population)	2071	46.856	19.05	12.978	91.87
lnPOPTOTAL	Natural Logarithms of total Population of countries	2071	15.813	2.059	9.17	21.062

Source: Author's compilation based on various data sources.

Appendix B: Matrix of Correlations

Appendix B1: [Corresponding to tables 1 and 2: Correlation Matrix (Explanatory variable: HDI, Annual Data, 2000–2018)]

Table 5: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) NMR_lag	1.000									
(2) HDI	0.058	1.000								
(3) UNEMP	-0.062	0.145	1.000							
(4) ECO_FREEDOM	-0.059	0.245	0.158	1.000						
(5) POPGRO	0.509	-0.527	-0.240	-0.178	1.000					
(6) lnPOPTOTAL	0.133	0.066	-0.267	-0.015	-0.031	1.000				
(7) INTERNET	0.090	0.660	0.128	0.291	-0.366	0.037	1.000			
(8) logMMR	0.084	-0.809	-0.182	-0.221	0.639	-0.005	-0.601	1.000		
(9) Civic_Part	-0.096	-0.131	-0.024	0.397	0.048	-0.010	0.017	0.262	1.000	
(10) Govt_effect	0.071	0.457	0.126	0.532	-0.302	0.149	0.416	-0.381	0.246	1.000

Appendix B2: [Corresponding to Table 3: Correlation Matrix (Dependent Variable: GDP Per Capita, Annual Data, 2000–2018)]

Table 6: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
NMR_lag	1.000									
logPerCap	0.243	1.000								
logUNEMP	-0.082	0.321	1.000							
ECO_FREEDOM	-0.116	0.372	0.174	1.000						
POPGRO	0.508	-0.338	-0.259	-0.277	1.000					
lnPOPTOTAL	0.146	-0.015	-0.218	-0.013	-0.026	1.000				
INTERNET	0.087	0.609	0.177	0.321	-0.354	0.019	1.000			
Civic_Part	-0.116	-0.049	-0.053	0.349	0.016	-0.031	-0.007	1.000		
logMMR	0.093	-0.675	-0.258	-0.333	0.644	-0.007	-0.623	0.204	1.000	
INFLATION	0.056	-0.045	0.033	-0.216	0.078	0.086	-0.134	-0.175	0.031	1.000

Appendix C: Dynamic Panel Estimation Equations (Two-Step System GMM)

Appendix C-1: [Corresponding to Table 1 (Aggregated by Different HDI Levels)]

Table 7: Dynamic panel estimation equation

xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET if HDI<.5 , gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET if HDI>.5 & HDI<.7, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET if HDI>.5 & HDI<.8, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET if HDI>.5 & HDI<.9, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust

Appendix C-2: (Corresponding to Table 2)

Table 8: Dynamic panel estimation equation

xtabond2 NMR NMR_lag HDI log UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL logMMR , gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET Civic_Part , gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET logMMR , gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust.
xtabond2 NMR NMR_lag HDI UNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET logMMR Civic_Part, gmm(NMR_lag HDI, lag(1 1)) iv(NMR_lag2 HDI_lag2 ELECTRICITY LIFEEXP) twostep robust

Appendix C-3: [Corresponding to Table 3 (Employing Different Sets of Control Variables for GDP per capita)]

Table 9: Dynamic panel estimation equation

xtabond2 NMR NMR_lag logPerCap logUNEMP ECO_FREEDOM POPGRO lnPOPTOTAL, gmm(NMR_lag logPerCap, lag(1 1)) iv(NMR_lag2 logPerCapL2 logUNEMPL1 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag logPerCap logUNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET, gmm(NMR_lag logPerCap, lag(1 1)) iv(NMR_lag2 logPerCapL2 logUNEMPL1 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag logPerCap logUNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET logMMR , gmm(NMR_lag logPerCap, lag(1 1)) iv(NMR_lag2 logPerCapL2 logUNEMPL1 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag logPerCap logUNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET logMMR Civic_Part , gmm(NMR_lag logPerCap, lag(1 1)) iv(NMR_lag2 logPerCapL2 logUNEMPL1 ELECTRICITY LIFEEXP) twostep robust
xtabond2 NMR NMR_lag logPerCap logUNEMP ECO_FREEDOM POPGRO lnPOPTOTAL INTERNET Civic_Part logMMR INFLATION, gmm(NMR_lag logPerCap, lag(1 1)) iv(NMR_lag2 logPerCapL2 logUNEMPL1 ELECTRICITY) twostep robust

Appendix D: [List of Selected Low- and Middle-Income Countries (109 Countries) as of 2022]
Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Belarus, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, China, Colombia, Comoros, Costa Rica, Côte d'Ivoire, Cuba, Djibouti, Dominican Republic, Egypt, El Salvador, Ecuador, Equatorial Guinea, Eswatini, Ethiopia, Fiji, Gabon, Gambia, The, Georgia, Ghana, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Iran, Jamaica, Kazakhstan, Kenya, Kiribati, Kyrgyz Republic, Lao PDR, Lesotho, Liberia, Malawi, Malaysia, Maldives, Mali, Mauritania, Mexico, Micronesia, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, North Macedonia, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Russian Federation, Rwanda, Samoa, Sao Tome and Principe, Senegal, Solomon Islands, South Africa, Sri Lanka, St. Vincent and the Grenadines, Sudan, Suriname, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Tonga, Tunisia, Turkiye, Turkmenistan, Tuvalu, Uganda, Ukraine, Uzbekistan, Vanuatu, Vietnam, Yemen, Rep., Zambia, Zimbabwe.