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Understanding National-Level Factors Behind Skilled Migration: A Comprehensive Literature Review

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Abstract: This systematic review examines macro-level factors shaping skilled professionals' migration intentions between the years 2010 and 2025. Using PRISMA-2020 guidelines, searches across six databases generated 557 records, of which 33 high-quality studies met the inclusion criteria. Findings synthesized through the TCCM framework reveal six clusters of macro-level drivers: political, economic, sociocultural, technological and infrastructural, legal and policy, and environmental. Wage differentials are the most consistently reported driver, followed by limited domestic employment, poor economic conditions, corruption, insecurity and weak health-system infrastructure. National corruption, fiscal austerity, regional housing prices, city type and pandemic shocks condition these effects, and institutional trust is the only macro-level mediator identified; no study tested interaction or mediation formally. The review contributes an operational definition of macro-level factors and an evidence-derived framework separating direct, conditioning and transmitting pathways. Since the evidence is cross-sectional, perception-based and health sector-dominated, the framework is offered as testable propositions rather than a general model. In general, pay reform alone is unlikely to retain skilled professionals unless it improves the governance, security and public infrastructure.

Keywords: *Brain-Drain, Macro-Level Factors, Migration Intention, Skilled Migration, Systematic Review*

1. Introduction

International mobility of skilled professionals has become an important feature of current socio-economic transformation, influencing labor markets, national competitiveness, and long-term developments. By 2024, global migrants reached 304 million (3.7% of the world's population), up from 275 million in 2020, a 10.4% increase that outpaced the world's 3.5% population growth over the same period (Paez-deggeller, 2025). Among them, 167.7 million were educated and working-age workers, accounting for 4.7% of the global labor force in 2022 (ILO, 2024). These trends reflect how human capital mobility influences economic structures, innovation, and demographic patterns in both origin and destination countries.

Macroeconomic theories such as neoclassical migration theory, frame migration as a rational response to wage differentials, labor-demand disparities, and economic opportunity structures (de Haas, 2021). Similarly, structuralist and world-systems perspectives emphasize the role of global economic hierarchies, uneven development, and market integration pushing skilled workers toward advanced economies (Castles et al., 2005; Sassen, 2014). Empirical studies further show that governance quality, economic stability, public sector efficiency, corruption, political climate, and institutional trust strongly affect individuals' expectations about their future in their home country (Anvarovich & Mekhmonkulovich, 2020; Sassen, 2014). Likewise, global economic integration, technological infrastructure, immigration regulations, and talent-attraction initiatives significantly affect the attractiveness of destination countries (Chaloff & Lemaître, 2009; OECD, 2022). This theoretical and empirical evidence highlights the importance of macro-level forces in shaping skilled migration intention.

Despite these insights, the literature shows several gaps. Foremost, evidence remains limited on which national-level factors matter most across different regions and professions (Czaika & Parsons, 2017). Second, many studies examine macro determinants in isolation rather than considering how structural push-pull forces interact (De Haas, 2010). Third, there is a lack of studies on which moderators condition the impact of macro-determinants on migration intention. Finally, the mediating mechanisms linking macro forces to migration intention remain underexplored (Drazanova, Gonnot, Heidland, & Kruger, 2023). These gaps indicate the need for a systematic synthesis of macro-level drivers influencing the migration intention of skilled professionals.

Addressing these gaps is essential for both theory and practice. For developing countries, understanding the

root causes of skilled migration is critical in designing effective retention strategies and mitigating brain drain (Docquier & Rapoport, 2012). For destination countries, identifying the macro-level drivers influencing skilled workers' intentions helps strengthen migration and integration policies (OECD, 2022). Thus, the objectives of this systematic literature review are:

- To identify the theoretical perspectives underpinning national-level determinants of skilled professionals' migration intention.
- To examine the professional and geographical contexts in which macro-level determinants of skilled migration intention have been studied.
- To identify the direct factors, moderators, and mediators shaping skilled professionals' migration intention at the macro level.
- To evaluate the methodological approaches used in existing research on macro-level determinants of skilled migration.
- To identify the existing gaps in the macro-level migration intention literature and provide future research directions.

By synthesizing this evidence, the review proposes an integrated framework of direct, conditioning and transmitting macro-level forces.

The remainder of the paper is organized as follows. Section 2 reviews the theoretical background and sets out the operational definition of macro-level factors. Section 3 describes the review protocol. Section 4 presents and discusses the findings, research gaps and derives the framework. Section 5 provides the study conclusion.

2. Literature Review

Theoretical perspectives on macro determinants of skilled migration

Macro-level explanations share the premise that people respond to structural conditions they cannot change individually. The push–pull model explains migration through adverse conditions at origin, attractive conditions at destination and intervening obstacles such as distance and immigration law (Lee, 1966). Neoclassical theory narrows these conditions to wage and employment differentials (Harris & Todaro, 1970), while structural perspectives locate them in uneven development and global economic hierarchy (Castles et al., 2005; Sassen, 2014). Institutional perspectives add that when citizens cannot improve institutions through voice, exit becomes more attractive (Hirschman, 2004), and the aspirations–capabilities framework separates the wish to leave from the means of doing so (de Haas, 2021). These perspectives explain why national conditions matter but say little about which conditions strengthen or weaken one another, or through which channels they reach individuals. This review therefore uses them to classify direct, conditioning and transmitting macro-level effects.

Operational definition of macro-level factors

A factor is treated as macro-level when (a) its referent is a structural property of a country, region or city, or of a national institution governing a profession, such as the public health system or a licensing regime, rather than of a person, household or employer; (b) it applies in common to professionals in that unit; and (c) no individual or single employer can change it in the short term. Perceptions are included only when their object is in such a condition, for example perceived national corruption, because most studies measure national conditions through respondents' assessments. Sub-national conditions such as regional housing prices are included because they are set by markets and public policy rather than by individuals.

Accordingly, political factors qualify because they describe the state and its institutions; economic factors because they describe national or regional labor markets, wages and economic performance; sociocultural factors because they describe society-wide norms, protection and exclusion; infrastructural factors because they describe public systems; legal and policy factors because they are set by legislation and international agreements; and environmental factors because they affect whole populations. Variables referring to the individual or the workplace were treated as micro- or meso-level and excluded.

3. Methodology

As migration research spans several disciplines and contexts, this SLR adopted PRISMA-2020 guidelines to establish a structured and standardized method for identifying, screening, and selecting studies (Page et al., 2021).

Article Eligibility Criteria: The inclusion criteria for articles in this study were carefully designed to guarantee the choice of relevant and top-quality sources for a thorough analysis. Table 1 presents the study eligibility criteria that were formulated prior to the search process.

Indexing in SJR (any quartile) or ABDC (A*, A or B) served as a verifiable peer-review threshold, not as a proxy for quality. All SJR quartiles were admitted so that credible evidence from lower-ranked journals, which more often publish studies from under-represented countries, was not excluded on prestige grounds; journals indexed in neither list (n=6) were excluded because their review standards could not be verified. Quality was judged per article instead.

Table 1: Inclusion Criteria

Characteristic	Inclusion Criteria
Type of publication	Peer-reviewed articles published in top-tier journals (A*/A/B Australian Business Deans Council (ABDC) Journal Quality, Q1-Q4 SCImago Journal Rank (SJR))
Language	English
Time period	Between 2010–2025
Research design	Empirical studies that employed quantitative, qualitative, or mixed-method approaches
Content	Studies with the primary/secondary focus on professionals, employees, skilled professionals, or skilled employees with at least one macro-level factor examined or reported
Database Source	Emerald Insight, IEEE Xplore, Sage Journals, ScienceDirect, Springer Nature, and Web of Science

Source: Author's Work

Information Sources and Search Strategy: A thorough search was conducted across six databases (Table 1) to capture a wide interdisciplinary range of studies relevant to skilled migration. Search terms combined the outcome concept (migration intention) with the population concept (professionals, skilled professionals, employees and skilled employees) using Boolean operators. The database-specific search strings are reported in Appendix A. The search initially identified 557 records.

Selection Process (Figure 1)**:** Study selection followed the PRISMA-2020 stages shown in Figure 1. Before manual screening, automated filters removed non-English articles, pre-2010 publications, non-journal materials, and restricted-access papers. Then 15 duplicates were removed in Mendeley, leaving 405 articles for screening. Next, the screening was conducted in two phases. In the first phase, titles and abstracts were reviewed and then in the second phase, full texts of articles were examined. A total of 103 reports were excluded: review papers (n=11), conference papers (n=2), non-indexed journals (n=6), irrelevant populations (n=51), data collected before 2010 (n=3), and no macro-level factor or migration-intention outcome (n=30). Finally, 33 studies were included.

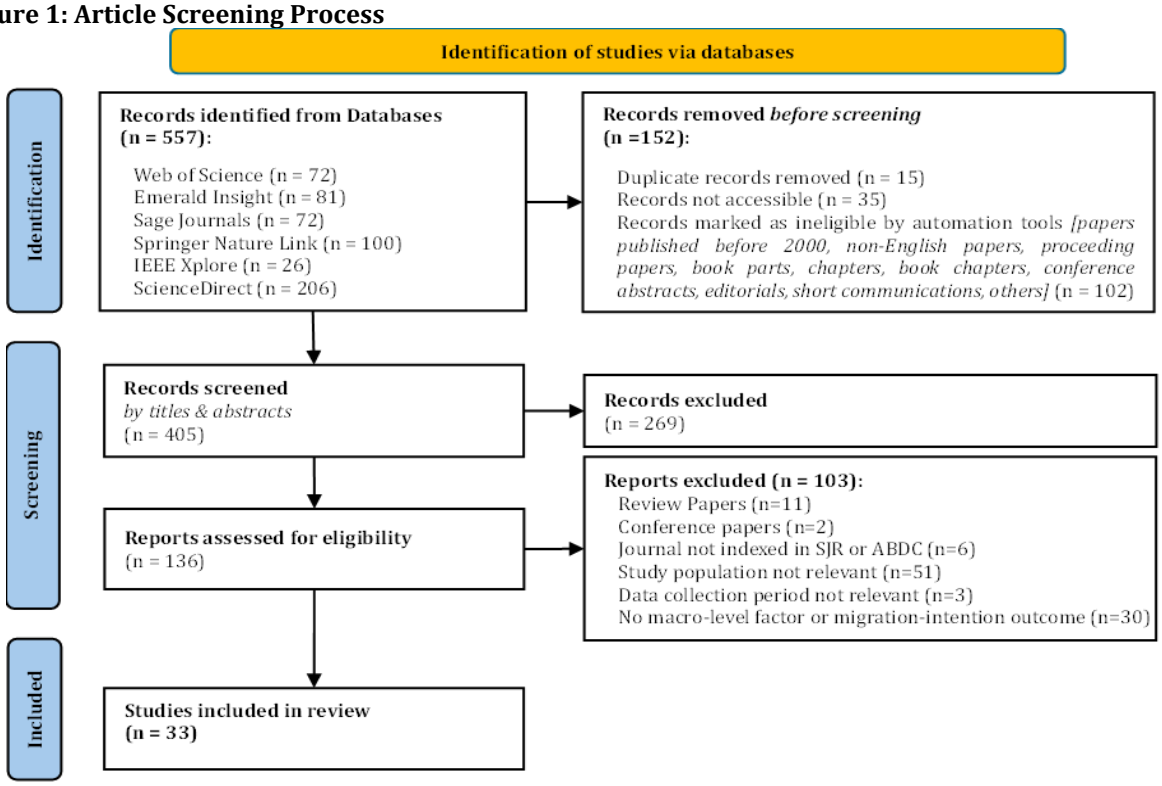
Data Items: Data extraction was conducted using a structured Excel sheet to systematically record information from the 33 included studies, covering study characteristics, theory, methodology, population characteristics, geographical context, and the macro-level antecedents, moderators and mediators of migration intention, together with the direction and statistical significance of each reported relationship.

Quality appraisal (Appendix B)**:** The quality of 33 studies was assessed with the Mixed Methods Appraisal Tool (MMAT, 2018 version), which covers qualitative, quantitative and mixed-methods designs (Hong et al., 2018). Each study was first checked against the two screening questions and then rated against the five criteria for its design category as 'Yes', 'No' or 'Can't tell'. Studies were rated high (four/ five criteria met), moderate (three) or low (<= 2): 15 were high, 13 moderate and five low. As the MMAT discourages exclusion by overall

score, no study was removed; instead, findings resting only on low-rated studies were treated as tentative.

Study Synthesis Method: The study data were synthesized using the TCCM (Theory–Context–Characteristics–Methodology) framework (Paul & Rosado-Serrano, 2019). For Characteristics, each factor was coded into one of six macro-level domains, tabulated by direction (push/pull), evidence type and significance, and, since the designs and measures were too heterogeneous for meta-analysis, synthesized narratively by comparing frequency, direction and strength and by examining conflicting results across countries, professions and study designs.

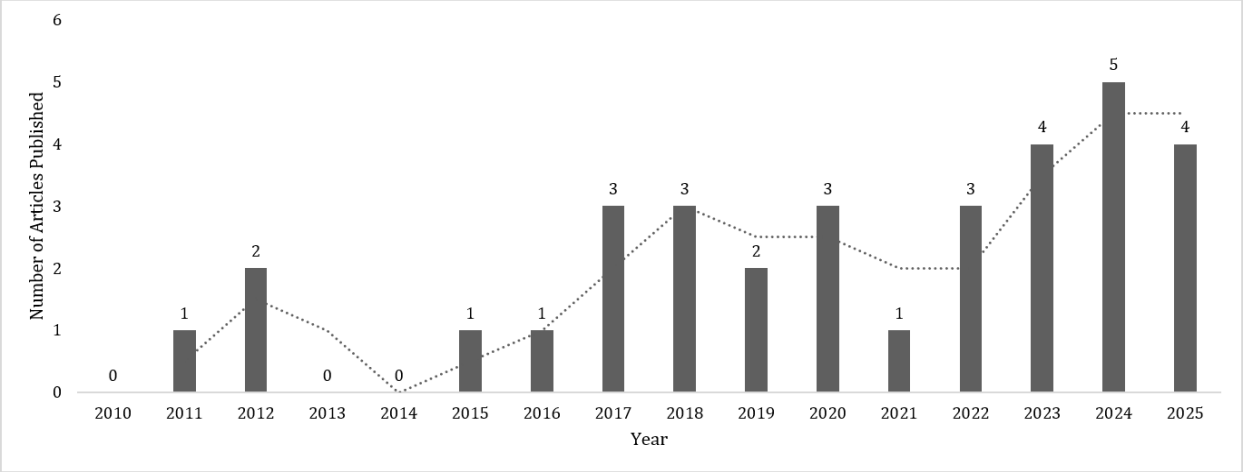
Figure 1: Article Screening Process



Source: Author's Work

4. Results and Discussion

Figure 2: Publication Trend (2010-2025)



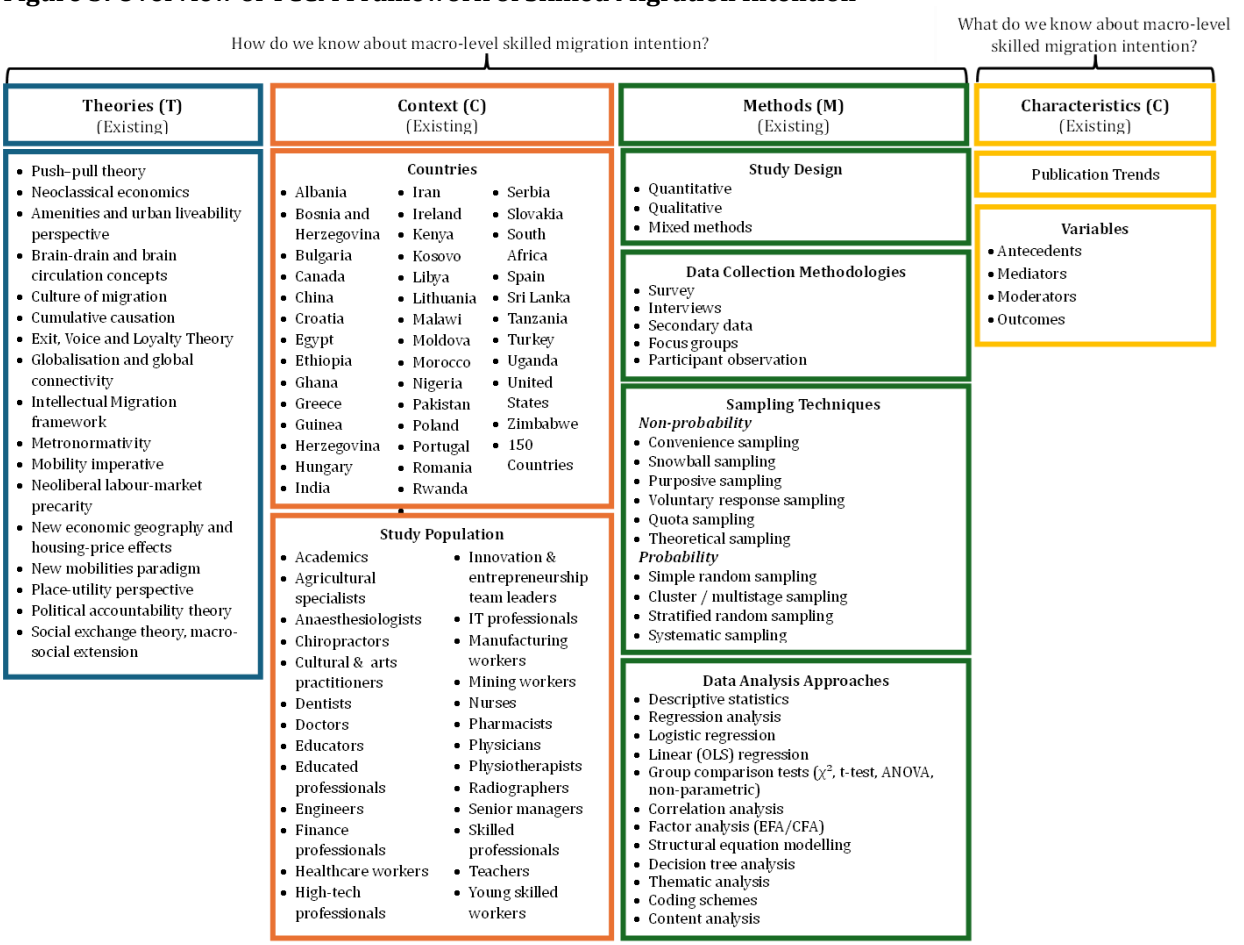
Source: Author's Work

Publication Trends: Figure 2 shows the number of included studies published each year from 2010 to 2025. Output was sparse until 2015 (four studies), rose to 12 studies in 2016–2020 and reached 17 in 2021–2025. The 2017 studies were conducted in European countries affected by post-2008 austerity (Humphries et al., 2017; Ramos & Alves, 2017; Suciu et al., 2017), and several post-2020 studies were conducted during the COVID-19 pandemic or subsequent economic crises (Amarathunga et al., 2025; Pszczółkowska et al., 2024; Wutor et al., 2024). Research attention thus tends to follow national economic and health-system shocks. Overall, the trend shows a clear rise in scholarly attention to this topic over the past decade, particularly after 2022, reflecting growing global concern over skilled migration and workforce mobility.

TCCM Framework Discussion

This section discusses the findings using the TCCM framework, structured around the four objectives of this review. Figure 3 summarizes the theories, contexts, characteristics and methods identified across the 33 studies.

Figure 3: Overview of TCCM Framework of Skilled Migration Intention



Source: Author's Work

Theories (T)

Thirty of the 33 studies used at least one macro-level perspective, giving 45 theory applications (Table 2). The most adopted approach is the push–pull framework (23 applications, 51%; used in 70% of studies) and it grew from three studies in 2010–2015 to 14 in 2021–2025, followed by neoclassical economics (11%). Push–pull mostly served as a device for listing origin and destination conditions rather than for generating testable relationships, which partly explains why moderating and mediating mechanisms remain under-examined. More explanatory perspectives were rare: exit-voice and political accountability theory linked corruption to emigration (Helms, 2024); amenity, liveability and new economic geography perspectives explained regional

conditions (He et al., 2022; Lu et al., 2023; Shen et al., 2023); the culture of migration explained normalized medical emigration (Humphries et al., 2017); and metro-normativity explained pressures on rural professionals (Terman, 2020). Even though the Push–Pull Theory remains the leading framework in this area, the recent rise of these additional perspectives points to a growing and more varied theoretical understanding of what drives skilled migration at the national level.

Table 2:Macro-level Theories Applied in Reviewed Studies

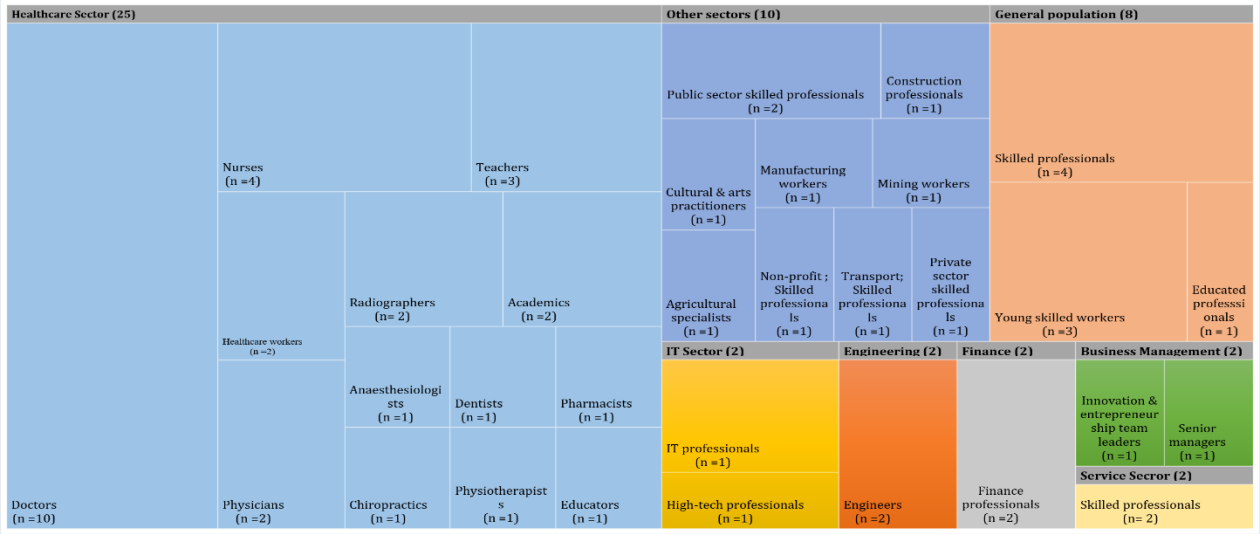
Theory/Perspectives	2010-2015	2016-2020	2021-2025	Total	Contribution
Push–pull theory/framework	3	6	14	23	51%
Neoclassical economics		3	2	5	11%
Amenities and urban liveability perspective			2	2	4%
Brain drain and brain circulation concepts			2	2	4%
Culture of migration		1		1	2%
Cumulative causation		1		1	2%
Exit, Voice and Loyalty Theory			1	1	2%
Globalization and global connectivity		1		1	2%
Intellectual Migration framework			1	1	2%
Metronormativity		1		1	2%
Mobility imperative		1		1	2%
Neoliberal labor-market precarity			1	1	2%
New economic geography and housing-price effects			1	1	2%
New mobilities paradigm		1		1	2%
Place-utility perspective		1		1	2%
Political accountability theory			1	1	2%
Social exchange theory, macro-social extension		1		1	2%

Source: Author's Work

Context(C)

The Context dimension of the TCCM framework was examined through the professional sectors and geographical settings covered by the reviewed studies.

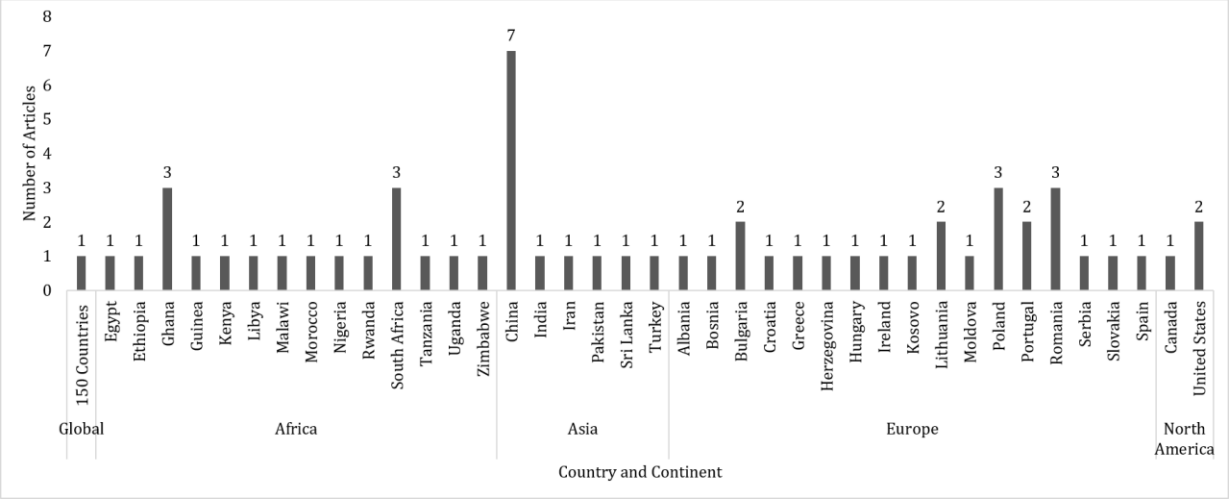
Figure 4: Study Populations by Sector and Profession Category



Source: Author's Work

As shown in Figure 4, the healthcare sector accounted for 25 of 53 profession counts (multi-profession studies are counted under each), led by doctors and physicians (12) and nurses (4). Only nine studies focused exclusively on non-health groups, such as academics, agricultural specialists and public- and private-sector employees, while engineering, IT and finance each appear in no more than two studies. The evidence is therefore weighted towards professions with internationally transferable licenses and active international recruitment.

Figure 5: Geographical Setting



Source: Author's Work

In terms of geographical context (Figure 5), studies were conducted across 38 countries spanning Africa, Asia, Europe, and North America, along with one large-scale study covering 135 countries (Helms, 2024). China was the most studied country (seven studies), followed by Ghana, Poland, Romania, and South Africa, each represented by three studies. Most other countries were represented by one or two studies. Asia and Europe together accounted for the largest share of the reviewed literature, whereas African countries, although numerous, were each represented by a small number of studies, reflecting a broad but thinly spread coverage of the continent. Regions such as Latin America and Oceania were absent from the reviewed studies altogether. This uneven geographical spread suggests that national-level migration intention research is concentrated in countries facing acute skilled-worker shortages or active emigration debates, such as China and parts of Eastern Europe and Africa, while other regions with comparable migration pressures remain largely unstudied.

Characteristics (C)

Antecedents (Appendix C). *Political factors.* Corruption is the most consistently tested political factor. Perceived corruption increased emigration intention across 135 countries (Helms, 2024), in Romania (Crisan et al., 2019) and in the Western Balkans (Kacani et al., 2025), and was widely endorsed by African health professionals (Fletcher-Nkile et al., 2022; Ismail & Coetzee, 2024; Ohene-Botwe et al., 2024, 2025). However, it did not distinguish between intending and non-intending Bulgarian agricultural specialists because almost all perceived it as high (Traikova et al., 2018): a condition shared by a whole population can motivate emigration yet explain little variation within a single country, so cross-national designs are needed to detect it. Evidence on political stability is mixed. Perceived instability raised migration attitudes among Turkish nurses (Sheikh et al., 2012; Wutor et al., 2024) and leadership approval lowered intention worldwide (Helms, 2024), whereas negative political perceptions were linked to lower intention among Sri Lankan young professionals (Amarathunga et al., 2025), and Ghanaian and Pakistani doctors rated political reasons below economic ones (Sheikh et al., 2012; Wutor et al., 2024). Consistent with exit-voice theory (Hirschman, 2004), political dissatisfaction may prompt voice rather than exit unless combined with economic hardship. Weak governance (Lu et al., 2018; Soltanizadeh et al., 2025), a hostile socio-political climate (Pszczółkowska et al., 2024) and crime (Fletcher-Nkile et al., 2022) add push pressure, while effective governance and security abroad pull (Ohene-Botwe et al., 2024).

Economic factors provide the most consistent evidence. A poor national economy was the strongest predictor among Sri Lankans (Amarathunga et al., 2025) and raised emigration intention worldwide (Helms, 2024), and economic instability and currency devaluation were leading push factors among Turkish, Iranian and African health professionals (Ohene-Botwe et al., 2024; Öncü et al., 2023; Soltanizadeh et al., 2025; Wutor et al., 2024). Wage differentials were the most frequently reported factor (18 studies). Higher wages abroad predicted intention among Indian pharmacists (Kunnumbrath & Kodali, 2023), Bulgarian agricultural specialists (Traikova et al., 2018) and Western Balkan nurses (Kacani et al., 2025), and low domestic wages were the strongest predictor in China (Iqbal et al., 2020, 2021). However, earnings were not significant among Polish junior doctors once socio-political conditions were considered (Pszczółkowska et al., 2024), and Romanian forensic specialists paid above the national medical average showed little interest in migrating (Covaliu et al., 2015), suggesting that wage effects are relative to national reference levels. Labour-market effects are similarly context-dependent: domestic job opportunities lowered intention in the Western Balkans (Kacani et al., 2025), opportunities abroad predicted it among Indian pharmacists, and job shortages pushed Canadian nursing and Romanian medical professionals (Freeman et al., 2012; Suciu et al., 2017), yet job-finding difficulty was not significant among Chinese young professionals (Cui et al., 2016), and job opportunities mattered only for mining workers with mismatched skills (He et al., 2022). Austerity and public pay cuts formed the background in Ireland, Portugal and Romania (Humphries et al., 2017; Ramos & Alves, 2017), a local economic shock pushed rural young professionals in Ohio (Wolfe et al., 2020), and regional housing pressure shaped intention to leave Chinese cities (Cui et al., 2016; Shen et al., 2023). Living conditions acted as push and pull factors elsewhere (Janulyte et al., 2011; Suciu et al., 2017).

Sociocultural factors appeared mainly in health-sector studies. Discrimination was significant among Iranian medical professionals (Soltanizadeh et al., 2025), and hate speech and the treatment of LGBTQ people formed part of the strongest predictors among Polish junior doctors (Pszczółkowska et al., 2024). Structural racism and heterosexism pushed minority skilled professionals from rural West Virginia (Terman, 2020), and race-related policy pushed South African anesthetists (Fletcher-Nkile et al., 2022). A pessimistic national outlook was also significant in Iran (Soltanizadeh et al., 2025). Evidence on social protection is inconsistent: inadequate social security predicted intention in Iran, social benefits abroad were not significant in Bulgaria (Traikova et al., 2018), and the Chinese evidence produced counter-intuitive signs (Iqbal et al., 2020, 2021). Colonial connections (Ohene-Botwe et al., 2024), a shared language (Humphries et al., 2017) and border proximity (Freeman et al., 2012) lowered the cost of moving to particular destinations.

Technological and infrastructural factors centered on public infrastructure and health-system capacity. Unreliable utilities and roads (Fletcher-Nkile et al., 2022) and poor health infrastructure (Ismail & Coetzee, 2024; Ohene-Botwe et al., 2024, 2025) pushed African health professionals, and health-system organization predicted intention in Poland and Romania (Pszczółkowska et al., 2024; Suciu et al., 2017). Better infrastructure abroad attracted Polish physiotherapists (Kostrzewa et al., 2022) but raised intention only in China's low-housing-price region (Shen et al., 2023), and improved public transport, but not public facilities, lowered intention in Chinese resource-based cities (He et al., 2022), indicating that effects depend on which services are locally deficient.

Legal and policy factors mainly change the costs and opportunities of moving. EU free movement and recognition of qualifications facilitated migration intention in Central and Eastern Europe (Janulyte et al., 2011; Kostrzewa et al., 2022; Suciu et al., 2017), and destination immigration policies, bilateral agreements and easier licensing attracted Pakistani, African and Canadian professionals (Freeman et al., 2012; Ohene-Botwe et al., 2025; Sheikh et al., 2012). Unfair employment laws (Soltanizadeh et al., 2025), the tightening of abortion law (Pszczółkowska et al., 2024) and uncertainty over health insurance reform (Ismail & Coetzee, 2024) added push pressure. Easier household registration (hukou) lowered intention to leave Chinese cities (Shen et al., 2023), and scholarships, talent policies and salary rises were reported to retain professionals (Domagała & Dubas-Jakóbczyk, 2019; Lu et al., 2018; Terman, 2020), although none was evaluated quantitatively.

Environmental factors were rarely examined. Perceived health risks from smog increased skilled workers' intention to leave the Beijing–Tianjin–Hebei region, while confidence in government pollution control reduced it (Lu et al., 2018). The COVID-19 pandemic lost significance once other push factors were included (Pszczółkowska et al., 2024), suggesting that it acted as a trigger rather than an independent cause.

Moderators (Appendix D)**.** Five macro-level conditions altered other effects, though none was tested with an interaction term. National corruption determined whether turnover intention became emigration rather than a domestic job change (Crisan et al., 2019); fiscal austerity turned temporary medical emigration into likely permanent emigration (Humphries et al., 2017); regional housing-price level changed which factors predicted intention, with social integration mattering in high-price and destination infrastructure in low-price cities (Shen et al., 2023); city type distinguished onward intention between academic gateways (Lu et al., 2023); and the COVID-19 pandemic amplified existing grievances among Polish junior doctors (Pszczółkowska et al., 2024). Economic conditions thus condition most often, but based on split samples, descriptive contrasts and qualitative accounts.

Mediators (Appendix E)**.** Declining confidence in honest elections reduced but did not remove the corruption effect (Helms, 2024), suggesting partial mediation through institutional trust, although this was not formally tested. The two formal mediation tests used individual attitudes and beliefs as mediators (Cui et al., 2016; Traikova et al., 2018), suggesting that macro-level conditions operate largely by shaping individual evaluations, a cross-level pathway the literature has not yet specified.

Methods (M)

Table 3:Research Methodology

	Research methodology	N	%
Research Design	Quantitative	21	64%
	Qualitative	2	6%
	Mixed-method	10	30%
Sampling Techniques	***Non-probability sampling***		
	Convenience sampling	13	39%
	Snowball sampling	7	21%
	Purposive sampling	6	18%
	Voluntary response sampling	3	9%
	Quota sampling	1	3%
	Theoretical sampling	1	3%
	Probability sampling		
	Simple random sampling	5	15%
	Cluster / multistage sampling	3	9%
	Stratified random sampling	2	6%
	Systematic sampling	1	3%
	Total population (census)	6	18%
Data Collection	Survey	29	88%
	Interviews	10	30%
	Secondary data	5	15%
	Focus groups	2	6%
	Participant observation	1	3%
Data Analysis Approach	Descriptive statistics	26	79%
	Regression analysis	20	61%
	Logistic regression	18	55%
	Linear (OLS) regression	4	12%
	Group comparison tests (χ^2, t-test, ANOVA, non-parametric)	15	46%
	Correlation analysis	11	33%
	Factor analysis (EFA/CFA)	4	12%
	Structural equation modelling	2	6%
	Decision tree analysis	1	3%
	Thematic analysis	5	15%
	Coding schemes	3	9%
	Content analysis	1	3%
	Qualitative analysis (not specified)	1	3%

Source: Author's Work

Table 3 outlines the research methodology adopted across the reviewed studies. Accordingly, quantitative approaches were the most common study design used (64%), followed by mixed-method designs (30%) and qualitative designs in only two studies (6%). This shows that most research on country-level migration intention favors structured, numerical measurement over in-depth exploration of individual experiences. Studies relied on quantitative surveys to test relationships between macro-level push and pull factors and migration intention (Amarathunga et al., 2025; Wutor et al., 2024), while a smaller group of studies combined survey data with interviews to capture both statistical patterns and personal context (He et al., 2022; Lu et al., 2023). The limited use of purely qualitative designs suggests that the lived experiences and reasoning behind migration intentions at the national level remain comparatively less investigated.

All studies are cross-sectional; Suciu et al. (2017) surveyed three cohorts and Helms (2024) pooled Gallup waves for 2009–2015. Some studies covered several countries (Covaliu et al., 2015; Kacani et al., 2025; Ohene-Botwe et al., 2025), but only Helms (2024) linked an external country-level indicator to individual responses.

Non-probability sampling was adopted frequently, especially convenience (39%), snowball (21%) and purposive sampling (18%); probability techniques were used 11 times. Recruitment through social media or professional messaging groups (Kostrzewa et al., 2022; Wutor et al., 2024) favors respondents already interested in migration. Surveys were the main data source (88%), so macro-level conditions were mostly measured as perceptions on author-developed items rather than through validated scales or national indicators.

Most studies applied regression analysis, followed by descriptive statistics and correlation analysis. More advanced techniques, such as structural equation modelling and decision tree analysis, appeared far less frequently. Only 15 studies tested a macro-level factor inferentially, which limits comparison of effect sizes.

Outcomes

Effect patterns. Three patterns emerge from the inferential studies. First, economic conditions generally had the largest effects where domains were compared: a weak economy was the strongest predictor among Sri Lankans (Amarathunga et al., 2025), and economic and occupational push outweighed sociocultural push among Iranians (Soltanizadeh et al., 2025). Second, political effects were smaller but robust: perceived corruption stayed significant across specifications in Romania (Crisan et al., 2019) and across 135 countries (Helms, 2024). Third, infrastructural and environmental effects were selective: the mental-health risk of smog outweighed its physical risk (Lu et al., 2018), and only improved public transport, not facilities or safety, reduced intention in China's resource-based cities (He et al., 2022).

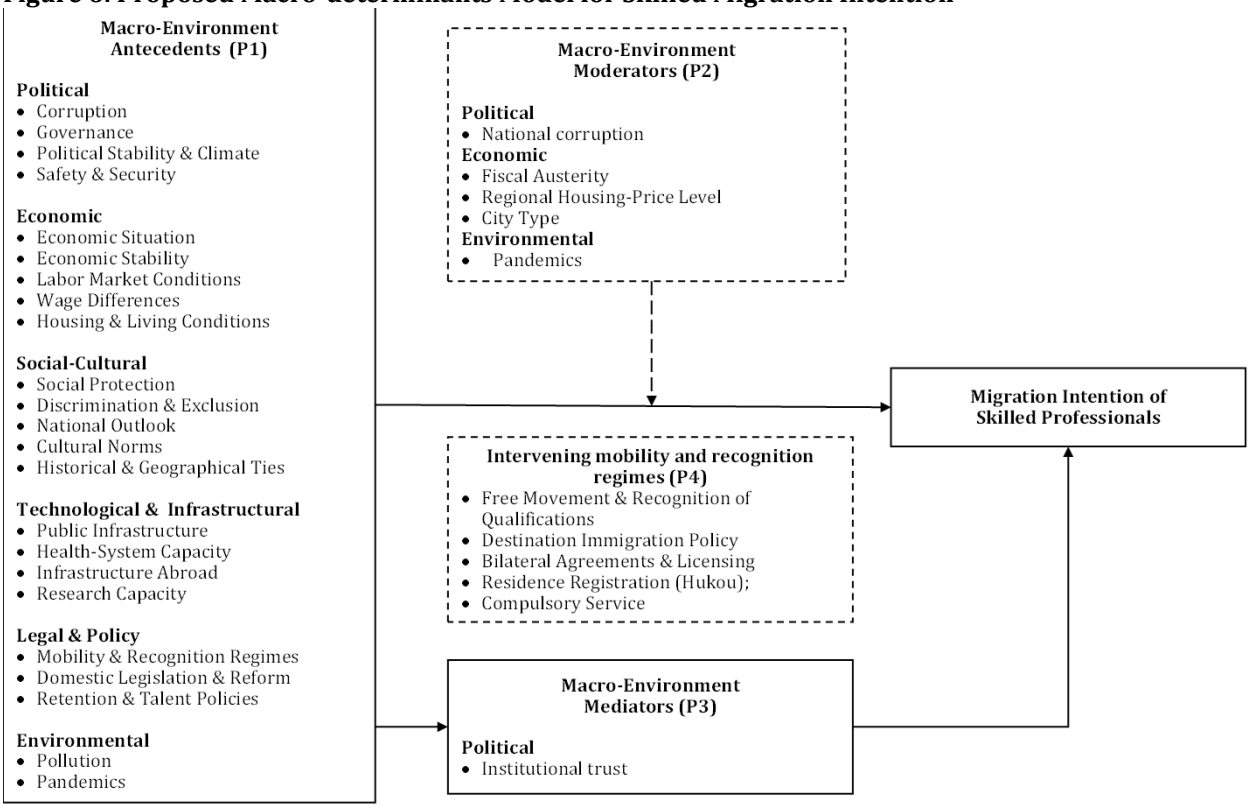
Contradictory findings. Several results contradict push–pull expectations. Negative political perceptions lowered intention among Sri Lankan young professionals (Amarathunga et al., 2025), and Ghanaian doctors rated instability as neutral and rejected crime as a reason to leave (Wutor et al., 2024), whereas insecurity was a leading push for South African anesthetists and chiropractors (Fletcher-Nkile et al., 2022; Ismail & Coetzee, 2024). Experienced bribery predicted one-year but not five-year intention (Crisan et al., 2019), and some coefficients ran opposite to the authors' interpretation (Iqbal et al., 2020, 2021). Romanian legal-medicine specialists showed little interest in leaving despite low pay because their earnings exceeded the national medical average (Covaliu et al., 2015). Political grievance can thus produce voice as well as exit, and wage effects depend on relative rather than absolute pay.

Contextual differences. Domain weights vary with context. In EU accession countries, wage gaps combine with free movement and recognition of qualifications, so economic pull takes over (Goštautaitė et al., 2018; Janulyte et al., 2011; Suciu et al., 2017). In sub-Saharan Africa, economic push is compounded by devaluation, taxation, corruption and insecurity (Ohene-Botwe et al., 2024, 2025). In high-income settings the triggers are cyclical or local, such as austerity in Ireland and Portugal (Humphries et al., 2017; Ramos & Alves, 2017) and rural industrial decline in the United States (Wolfe et al., 2020). Chinese skilled professionals, mostly of internal mobility, stress housing, pollution and hukou rules (Lu et al., 2018; Shen et al., 2023), and health workers respond to health-system and licensing conditions irrelevant to most other groups.

Theoretical implications. First, push–pull classification cannot explain the contradictory political results; exit–voice reasoning (Hirschman, 2004) explains why grievance leads some to stay and seek change, and the aspirations–capabilities view (de Haas, 2021) explains why conditions can raise the wish to leave without producing plans. Second, the dominance of wage gaps supports neoclassical arguments (Harris & Todaro, 1970), but their conditioning by austerity, corruption and housing markets shows that wage effects are institutionally embedded. Third, mobility and recognition regimes act as Lee's (1966) intervening obstacles, lowering or raising the cost of acting on intention.

Proposed Framework

Figure 6: Proposed Macro-determinants Model for Skilled Migration Intention



Source: Author's Work

Drawing on these findings in Appendices C–E, a macro-level conceptual framework was developed (Figure 6) as a basis for future research on skilled professionals' migration intentions. Accordingly, four propositions follow: (P1) macro-level antecedents directly shape migration intention, economic conditions most strongly; (P2) national corruption, austerity, regional housing prices, city type and crisis shocks moderate these effects; (P3) perceived corruption raises intention partly by lowering institutional trust; and (P4) mobility and recognition regimes condition how far antecedent pressures become intention.

Unlike the push–pull approach (Lee, 1966), this framework separates direct, conditioning and transmitting paths and specifies which conditions occupy each; unlike neoclassical models, it treats wages as one domain whose effect depends on institutions; and unlike multi-level frameworks, it is restricted to factors meeting an explicit macro-level definition, so macro-level effects can be tested without confounding them with individual attitudes. As the moderating and mediating paths rest on few, mostly untested studies, Figure 6 presents propositions rather than a validated model.

Generalization. The framework should be applied cautiously. Most of the studies examined only health professionals, 29 countries appear once, Latin America and Oceania are absent, and six studies concern internal

migration. Wage, employment, economic and corruption effects also appear in non-health studies (Amarathunga et al., 2025; Crisan et al., 2019; Traikova et al., 2018) and may extend to other skilled groups, but health-system and licensing factors are profession-specific. Applying the framework to engineers, IT professionals or unrepresented regions requires new empirical testing.

Research Gap

The TCCM analysis identifies several important gaps in the existing literature on macro-level determinants of skilled migration intentions.

Theories. Push–pull accounts for 51% of theory applications but is mostly descriptive. Migration systems theory (De Haas, 2010), dual labor market theory (Piore, 1979), mobility transition theory (Zelinsky, 1993), network and social capital theory (Portes, 1998) and the aspirations–capabilities framework (de Haas, 2021) remain unapplied**; Context.** Latin America and Oceania are absent, most countries appear in one study, 73% of studies involve health professionals, and knowledge-intensive sectors such as engineering, IT and finance are underexplored: **Characteristics.** Macro-level moderators and mediators have not been formally tested; technological and legal factors appear only as direct antecedents; climate change, digital connectivity and remote work are unexamined; retention policies have not been evaluated quantitatively; and no study formally tested whether macro-level effects differ by profession or geographical context; **Methods.** All studies are cross-sectional, most use non-probability, single-country samples, and longitudinal, multilevel and administrative-data designs are absent.

Future Implications

Future research should test the framework among underexplored skilled groups that are important to national innovation, such as engineers, IT professionals, logistics and supply chain professionals in renewable energy and sustainability sectors, financial technology specialists, educators in STEM fields, creative and knowledge-intensive professionals, and skilled technical workers in advanced manufacturing and Industry 4.0 environments, using multi-sector samples that test interactions between profession and macro-level factors. Comparative studies covering Latin America, Oceania and under-represented African and Asian economies are needed to establish whether wage, economic and governance effects hold across institutional settings.

Forthcoming studies should move beyond push–pull listing by using exit-voice, aspirations–capabilities and migration systems perspectives to test moderation (P2), mediation through institutional trust (P3) and intervening obstacles (P4). Methodologically, multilevel and longitudinal designs that link objective country or regional indicators, such as corruption indices, wage gaps and housing prices, to individual survey data would allow macro-level effects to be estimated directly rather than inferred from perceptions. Formal interaction and mediation tests, probability sampling and qualitative work on how professionals interpret national conditions would further strengthen the evidence. Climate pressures, diaspora networks and remote-work infrastructure also deserve attention as macro-level antecedents.

For policy, the evidence suggests that origin countries seeking to retain skilled professionals should combine pay reforms with measures that address corruption, governance, public infrastructure and legal certainty, because wage increases alone may not offset socio-political push factors. Destination countries can use these findings to design ethical recruitment and integration policies that consider the effects of active recruitment on origin countries' health systems.

5. Conclusion

This SLR examined the national-level (macro) factors shaping skilled professionals' migration intention, synthesizing evidence from 33 peer-reviewed studies over the 15 years (2010–2025). Using PRISMA-2020 and the TCCM framework, the review achieved five objectives: identifying the underlying theories, examining the contexts studied, identifying the direct factors, moderators, and mediators of migration intention, evaluating the methodological approaches used, and identifying gaps for future research.

As per the findings, wage differentials, limited domestic employment and poor economic conditions are the most consistently reported drivers, followed by corruption, weak governance, insecurity and poor health-

system infrastructure. National corruption, austerity, regional housing prices, city type and crisis shocks condition these effects, and perceived corruption appears to work partly through declining institutional trust.

These conclusions are bounded by the evidence: the studies are cross-sectional, perception-based and concentrated on health professionals in Europe, Africa and China. Although some drivers recur among academics, agricultural specialists and other skilled workers, the framework should be tested in other sectors and regions before it is applied to skilled professionals generally. The review is also limited to English-language articles in SJR- or ABDC-indexed journals from six databases.

Overall, this review offers an integrated, evidence-based understanding of the macro-level forces driving skilled migration intention, along with a framework that can guide future research and policy. For developing countries, the findings highlight the importance of strengthening governance, economic stability, infrastructure, and legal protections to retain skilled talent; for destination countries, they offer a basis for shaping migration and integration policy. Addressing these macro-level conditions is essential for the sustainable retention of skilled professionals and for supporting long-term labor-market and socio-economic stability, particularly in developing and emerging economies.

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Appendices

Appendix A: Database-specific search strategy

Database	Search string
Web of Science	“migration intention*" AND (professional* OR "skilled professional*" OR employee* OR "skilled employee*")
ScienceDirect	"migration intention" AND (professionals OR "skilled professionals" OR employees OR "skilled employees")
Springer Nature Link	"migration intentions" AND (professional* OR "skilled professionals" OR employee* OR "skilled employees")
Emerald Insight	"migration intentions" AND (professional* OR "skilled professionals" OR employee* OR "skilled employees")
Sage Journals	"migration intentions" AND (professional* OR "skilled professionals" OR employee* OR "skilled employees")
IEEE Xplore	“migration intention*" AND (professional* OR "skilled professional*" OR employee* OR "skilled employee*")

Source: Author's work

Appendix B: Methodological Quality Appraisal (MMAT 2018)
MMAT Criteria Applied

Category	Item	Criterion
Screening	S1	Are there clear research questions?
	S2	Do the collected data allow the research questions to be addressed?
Qualitative	1.1	Is the qualitative approach appropriate to answer the research question?
	1.2	Are the qualitative data collection methods adequate to address the research question?
	1.3	Are the findings adequately derived from the data?
	1.4	Is the interpretation of results sufficiently substantiated by data?
	1.5	Is there coherence between qualitative data sources, collection, analysis and interpretation?
Quantitative descriptive	4.1	Is the sampling strategy relevant to address the research question?
	4.2	Is the sample representative of the target population?
	4.3	Are the measurements appropriate?
	4.4	Is the risk of nonresponse bias low?
	4.5	Is the statistical analysis appropriate to answer the research question?
Mixed methods	5.1	Is there an adequate rationale for using a mixed-methods design to address the research question?
	5.2	Are the different components of the study effectively integrated to answer the research question?

5.3 Are the outputs of the integration of qualitative and quantitative components adequately interpreted?
5.4 Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?
5.5 Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?

Note: Categories 2 and 3 (randomized and non-randomized) were not applied, as no study used those designs.
Source: Hong et al. (2018)

Quality Appraisal of Included Studies Using the MMAT

ID	Authors	Category	S1	S2	C1	C2	C3	C4	C5	Criteria met	Quality
S1	Amarathunga et al. (2025)	Quantitative	Y	Y	Y	N	Y	CT	Y	3/5 (60%)	Moderate
S2	Covaliu et al. (2015)	Quantitative	Y	Y	CT	CT	CT	Y	N	1/5 (20%)	Low
S3	Crisan et al. (2019)	Quantitative	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S4	Cui et al. (2016)	Mixed-method	Y	Y	Y	Y	Y	CT	Y	4/5 (80%)	High
S5	Domagała & Dubas-Jakóbczyk (2019)	Quantitative	Y	Y	Y	CT	Y	N	Y	3/5 (60%)	Moderate
S6	Fletcher-Nkile et al. (2022)	Qualitative	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S7	Freeman et al. (2012)	Mixed-method	Y	Y	Y	Y	Y	CT	CT	3/5 (60%)	Moderate
S8	Goštautaitė et al. (2018)	Quantitative	Y	Y	Y	CT	Y	CT	Y	3/5 (60%)	Moderate
S9	He et al. (2022)	Mixed-method	Y	Y	Y	Y	Y	CT	N	3/5 (60%)	Moderate
S10	Helms (2024)	Quantitative	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S11	Humphries et al. (2017)	Mixed-method	Y	Y	Y	Y	Y	CT	Y	4/5 (80%)	High
S12	Iqbal et al. (2020)	Quantitative	Y	Y	Y	CT	CT	CT	N	1/5 (20%)	Low
S13	Iqbal et al. (2021)	Quantitative	Y	Y	Y	N	CT	CT	N	1/5 (20%)	Low
S14	Ismail & Coetzee (2024)	Quantitative	Y	Y	Y	Y	Y	CT	Y	4/5 (80%)	High
S15	Janulyte et al. (2011)	Quantitative	Y	Y	Y	Y	CT	Y	Y	4/5 (80%)	High
S16	Kacani et al. (2025)	Mixed-method	Y	Y	CT	N	N	CT	Y	1/5 (20%)	Low
S17	Kostrzewa et al. (2022)	Quantitative	Y	Y	Y	N	CT	CT	Y	2/5 (40%)	Low
S18	Kunnumbrath & Kodali (2023)	Mixed-method	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S19	Lu et al. (2018)	Mixed-method	Y	Y	Y	Y	Y	CT	CT	3/5 (60%)	Moderate
S20	Lu et al. (2023)	Mixed-method	Y	Y	Y	Y	Y	CT	N	3/5 (60%)	Moderate
S21	Ohene-Botwe et al. (2024)	Quantitative	Y	Y	Y	N	Y	N	Y	3/5 (60%)	Moderate
S22	Ohene-Botwe et al. (2025)	Quantitative	Y	Y	Y	N	Y	CT	Y	3/5 (60%)	Moderate
S23	Öncü et al. (2023)	Quantitative	Y	Y	Y	Y	Y	Y	CT	4/5 (80%)	High
S24	Pszczółkowska et al. (2024)	Mixed-method	Y	Y	Y	Y	Y	Y	N	4/5 (80%)	High
S25	Ramos & Alves (2017)	Quantitative	Y	Y	Y	CT	Y	N	Y	3/5 (60%)	Moderate
S26	Sheikh et al. (2012)	Quantitative	Y	Y	Y	N	CT	Y	Y	3/5 (60%)	Moderate
S27	Shen et al. (2023)	Quantitative	Y	Y	Y	CT	Y	CT	Y	3/5 (60%)	Moderate
S28	Soltanizadeh et al. (2025)	Quantitative	Y	Y	Y	CT	Y	Y	Y	4/5 (80%)	High
S29	Suciu et al. (2017)	Quantitative	Y	Y	Y	Y	CT	Y	Y	4/5 (80%)	High
S30	Terman (2020)	Qualitative	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S31	Traikova et al. (2018)	Quantitative	Y	Y	Y	Y	Y	Y	Y	5/5 (100%)	High
S32	Wolfe et al. (2020)	Mixed-method	Y	Y	Y	Y	Y	Y	CT	4/5 (80%)	High
S33	Wutor et al. (2024)	Quantitative	Y	Y	Y	N	Y	CT	Y	3/5 (60%)	Moderate

Source: Author's Work

Appendix C: Macro-Level Antecedents

Domain	Antecedents	Studies (IDs)
Political	**Corruption**	
	Perceived national corruption (push)	S3*, S6, S10*, S14, S16*, S21, S22, S31**
	Experienced bribery (push)	S3*
	Favoritism and lack of meritocracy (push)	S26, S28*
	Governance	

	Government mismanagement, weak policymaker support, bureaucracy (push)	S6, S21, S22, S28*
	Low confidence in government capacity to control pollution (push)	S19*
	Effective government management abroad (pull)	S14, S21, S22
	Access to welfare and citizenship services abroad (pull)	S28*
	Political Stability and Climate	
	Political instability or uncertainty (push)	S6, S16*, S23*, S26, S33
	Negative political perceptions (inverse association)	S1*
	Approval of national leadership (retention)	S10*
	Hostile socio-political climate (push)	S24*
	Smooth political transitions abroad (pull)	S21, S22
	Safety and Security	
	Crime, terrorism and personal safety (push)	S6, S14, S21, S22, S26, S33
	Security abroad (pull)	S6, S21
Economic	**Macroeconomic Conditions**	
	Poor, worsening or unstable national economy (push)	S1*, S6, S10*, S14, S23*, S28*, S33
	Currency devaluation (push)	S6, S21, S22
	Post-crisis austerity and public pay cuts (push)	S11, S25, S29
	Local or regional economic decline (push)	S9*, S30, S32
	Development level of home region	S4*
	Economic stability and development abroad (pull)	S6, S14, S21, S22
	Labour Market Conditions	
	Limited domestic employment opportunities (push)	S4**, S7, S9**, S16*, S18, S26, S29*, S30, S31*, S32
	Graduate oversupply and precarious public employment (push)	S23
	Employment opportunities and labour demand abroad (pull)	S11, S12*, S13*, S18*, S21, S26
	Active international recruitment (pull)	S21, S25
	Wage Differentials	
	Low national wages (push)	S2, S5, S12*, S13*, S17, S18, S21, S22, S28*, S29
	Higher wages abroad (pull)	S5, S12*, S13*, S15, S16*, S17, S18*, S21, S22, S23, S24**, S26, S27, S29*, S31*, S33
	High taxation (push)	S6, S21, S22
	Housing and Living Conditions	
	Regional housing-price pressure and unaffordability (push)	S4*, S20, S27*
	Cost of living (push)	S19**, S20
	Poor living conditions at home (push)	S21, S22
	Better living conditions and quality of life abroad (pull)	S2, S15, S16*, S17, S21, S22, S23, S26, S29*, S33
Socio-cultural	**Social Protection**	
	Inadequate social security (push)	S12*, S13*, S28*
	Social guarantees, benefits and insurance abroad (pull)	S15, S21, S31**
	Discrimination and Exclusion	
	Social discrimination, hate speech and racism (push)	S6, S24*, S28*, S30
	Racially accepting destination societies (pull)	S6
	National Outlook and Cultural Norms	
	Disappointing future and national backwardness (push)	S14, S23, S28*
	Religious rules and lifestyle restrictions (push)	S28*
	Metro-normative ideology (push from rural areas)	S30
	Cultural amenities and academic freedom abroad (pull)	S20
	Historical and Geographical Ties	
	Colonial connections and shared language (pull)	S11, S21, S22
	Geographical proximity to destination (pull)	S7*
Technological & Infrastructural	**Public Infrastructure**	
	Poor national infrastructure and utilities (push)	S6, S14
	Public transport improvements (retention)	S9*
	Public facilities	S9**

	Health-System Capacity	
	Poor health infrastructure, equipment and system organization (push)	S5, S6, S14, S17, S21, S22, S24*, S29*
	Quality of health services abroad (pull)	S2, S14
	Infrastructure Abroad and Research Capacity	
	Better infrastructure abroad (pull)	S17, S18**, S21, S22, S27*
	Research funding and university networks (pull to return)	S20
Legal & Policy	**Mobility and Recognition Regimes**	
	EU free movement and recognition of qualifications (facilitating)	S5, S8, S15, S17, S29
	Destination immigration policy, bilateral agreements and licensing (pull)	S6, S7, S21, S22, S26, S33
	Internal residence registration (hukou) (retention)	S27*
	Compulsory service and degree-release fees (barrier)	S28
	Domestic Legislation and Reform	
	Unfair employment laws and unworkable legislation (push)	S14, S28*
	Restrictive abortion law (push)	S24*
	Uncertainty over national health insurance reform (push)	S6, S14
	Weak professional regulation (push)	S18
	Retention and Talent Policies	
	Scholarships, talent, salary and resettlement incentives (retention)	S5, S20, S30, S32
Environmental	**Environmental and Public-Health Conditions**	
	Health risk from air pollution (push)	S19*
	COVID-19 pandemic (trigger)	S24**

Note: * significant in an inferential test; ** tested, not significant; unmarked = descriptive or qualitative evidence. Push = origin; pull = destination.

Source: Author's Work

Appendix D: Macro-Level Moderators

Domain	Moderator	Relationship conditioned	Study	Evidence
Political	National corruption	Turnover intention → migration rather than domestic job change	S3	Split-sample
Economic	Fiscal austerity	Culture of medical migration → permanent migration intention	S11	Qualitative
	Regional housing-price level	Housing, integration, hukou and infrastructure → migration intention	S27	Split-sample
	City type (emerging vs. established gateway)	Urban amenities and careers → onward migration intention	S20	Descriptive
Environmental	COVID-19 pandemic	Health-system and socio-political grievances → migration intention	S24	Qualitative

Note: No study tested a formal interaction term.

Source: Author's Work

Appendix E: Macro-Level Mediators

Domain	Mediator	Pathway	Study	Evidence
Political	Institutional trust (confidence in honest elections)	Perceived corruption → institutional trust → migration intention	S10	Partial; not formally tested

Source: Author's Work