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Multidimensional Determinants of Tunisian Migration Flows: An Integrated Econometric Analysis

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ABSTRACT

Tunisian migration patterns reveal a complex interplay between inherited colonial ties, contemporary economic disparities, and evolving institutional frameworks that challenge traditional migration theory. This study examines the interaction between economic, socio-cultural, and institutional factors influencing Tunisian migration, addressing an analytical gap beyond the traditional economic lens. Using a two-way fixed-effects panel regression model controlling for country and year fixed effects, with robust standard errors clustered at the country level, we analyze data from 23 countries over the period 2012–2022 to examine the impact of GDP per capita, unemployment, diaspora networks, linguistic proximity, and bilateral agreements on migration flows. Our analysis reveals that despite the primacy of economic incentives in driving migration decisions, cultural legacies exert an unexpectedly strong influence that reshapes our understanding of Mediterranean migration dynamics. While GDP per capita accounts for 65% of the variation in migration flows, cultural factors demonstrate considerable influence, with diaspora networks contributing a 30% increase and common language proximity yielding a 45% increase. In contrast, formal migration agreements show only a marginal effect of 25% ($p = 0.06$). These findings suggest that effective migration policies should strategically leverage diaspora networks and linguistic proximity while recognizing the limited impact of formal bilateral agreements compared to economic and cultural determinants in shaping migration patterns.

Keywords: Tunisian Migration Flows; Diaspora Networks; Migration Policy; Migration Governance; Panel Data Regression

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1. Introduction

International migration represents a key issue for Tunisia, significantly contributing to the national economy. In 2020, remittances accounted for approximately 5.57% of Tunisia's GDP, according to World Bank data [1]. This highlights the critical economic role of migrant networks and diaspora in the country's development. Recent econometric analysis has confirmed the complex relationship between remittances and Tunisia's domestic labor market dynamics, showing that demographic factors and income differentials play crucial roles in migration decisions, with remittances affecting unemployment patterns through demographic transitions [2]. While traditional economic literature [3, 4] has highlighted income differentials as a major driver of migration, Tunisian migration flows exhibit historically strong geographic concentration—particularly toward France and Italy—and a heightened sensitivity to international crises, as demonstrated during the COVID-19 pandemic [5].

Yet scholarly understanding of Tunisian migration remains fragmented across disciplinary silos. Economic analyses privilege wage differentials while overlooking the cultural capital embedded in colonial linguistic ties; sociological studies emphasize network effects without adequately accounting for policy constraints; institutional research documents formal agreements while neglecting their interaction with deeply rooted diaspora communities. Most studies adopt a one-dimensional perspective — whether economic [6], sociological [7], or institutional [8] — without articulating these factors within an integrated framework.

Moreover, conventional approaches often overlook the specificities of non-OECD countries and focus primarily on traditional migration corridors, neglecting emerging destinations such as Canada, Germany, or the Gulf states. Recent studies have emphasized the growing importance of diasporic networks and linguistic affinities in shaping new migratory dynamics [9], a finding also confirmed by longitudinal data from the MAFE project coordinated by [10].

The institutional framework, notably the 1963 Franco-Tunisian and 1998 Italo-Tunisian bilateral agreements, remains insufficiently explored despite its potential influence on the resilience of migration flows [11]. Recent research on Euro-Mediterranean migration policies has also pointed to the evolving governance framework in a post-pandemic context [12]. Furthermore, empirical studies using robust longitudinal data that account for major shocks such as the 2011 revolution and the COVID-19 pandemic remain scarce, limiting our understanding of their full impact on migration dynamics [13].

This study examines the interaction between economic, socio-cultural, and institutional factors in shaping Tunisian migration flows between 2012 and 2022—a period marked by significant socio-political transformations. Our dual objective is to (1) identify the key determinants of migration decisions through a quantitative analysis of longitudinal data (2012–2022), and (2) offer actionable insights for improving migration governance in Tunisia, especially in light of recent economic and geopolitical disruptions. It contributes to existing migration literature by integrating economic, socio-cultural, and institutional dimensions within a unified econometric framework—an approach still rare in research on non-OECD sending countries. By articulating these complex dynamics through a fixed-effects model, it seeks to bridge the gap between empirical evidence and strategic policy design.

Although the present study focuses on outward migration flows from Tunisia, the phenomenon of return—or reverse—migration has become increasingly visible, particularly in the post-2011 period. However, due to limited longitudinal data on return patterns and their strong informal components, it remains analytically difficult to isolate and model reverse flows with the same econometric precision. As such, this study concentrates on outward migration but acknowledges that future research should further explore the dynamics of return migration as part of a comprehensive migration system.

The article is structured as follows: Section 1 presents a critical literature review highlighting the three main explanatory dimensions of migration flows; Section 2 introduces our innovative methodological framework; Section 3 presents the empirical results; Section 4 discusses the specificities of the Tunisian case in relation to global trends; and Section 5 explores the theoretical and policy implications of our findings, outlining new perspectives for integrated migration governance.

2. Literature Review

2.1. Theoretical Framework and Economic Determinants of Migration

The neoclassical theory of migration [3, 14] posits that individuals make rational migration decisions based on cost-

benefit analysis. This analytical framework is formalized in the Harris–Todaro model [15], which views migration as primarily driven by wage differentials and employment opportunities between countries of origin and destination. More precisely, the Harris–Todaro model highlights the role of expected wages, meaning that migration decisions depend not only on wage levels but also on the probability of finding employment in the destination region, thus explaining the persistence of migration even amid high urban unemployment. Migration is thus seen as an investment in human capital, where individuals seek to maximize their utility by weighing both potential gains and the risks associated with mobility.

Recent empirical studies confirm the robustness of these explanatory factors. Ortega and Peri [16] show that a 10% increase in GDP per capita in destination countries is associated with a 6.3% increase in migration flows. Dorn and Zweimüller [17] also emphasize the role of European labor market integration in shaping migration dynamics, with particular sensitivity to skilled job prospects and wage convergence between European countries. Clemens [4] estimates that income gaps explain up to 70% of the variance in global migration flows. More recently, Dustmann, Fasani and Speciale [18] highlight that, despite the persistence of income gaps as the main driver of migration flows, financial constraints and the importance of social networks strongly condition the ability of individuals to migrate, particularly in low-income countries.

However, as noted by Bertoli and Fernández-Huertas Moraga [19], these models present significant limitations for developing economies such as Tunisia. They often fail to consider liquidity constraints that prevent the poorest populations from migrating, creating what McKenzie and Rapoport [20] describe as a "migration hump." In rural areas of Tunisia, for instance, the most disadvantaged families may lack the financial resources to cover initial migration costs, such as transportation or administrative fees, which limit their ability to migrate despite strong economic incentives. From this perspective, Bah et al. [21] show that restrictive migration policies and institutional barriers in North Africa accentuate inequalities in access to migration, confirming the need to integrate institutional and contextual factors into the economic analysis of migration, particularly to understand Tunisian dynamics. This complexity underscores the need to integrate local contexts and institutional factors into economic analyses of migration.

In light of these contributions, we posit that:

H1. *Income differentials and economic opportunities in destination countries have a significant and positive effect on Tunisian migration flows.*

2.2. Social Capital and Diaspora Networks

Migration network theory [22] complements the neoclassical approach by introducing social capital as a facilitator of migration, moving away from purely individualistic and atomistic visions to conceive migration as the product of collective and family actions. Each migrant effectively reduces the costs and risks for potential migrants from the same community by providing information about job opportunities, housing, and legal procedures, while also offering social and emotional support that reduces the psychological costs of relocation.

Beine et al. [23] quantify this "network effect" through empirical analysis of migration flows into OECD countries, demonstrating that larger diaspora communities in a destination country significantly increase subsequent migration flows by creating positive externalities that facilitate integration and reduce migration costs. Their research reveals that existing migrant networks play a crucial role in explaining both the size and structure of immigration flows, as they fundamentally alter the net benefits of migration for future migrants from the same origin communities.

Boyd [24] emphasizes the central role of family and community networks in enabling contemporary migration, asserting that family, friendship, and community networks underlie much of the recent migration to industrial nations. Her seminal work demonstrates that personal networks underpin the majority of migration to developed countries, challenging earlier mechanical "push and pull" models by highlighting how social connections create migration systems that link migrants and non-migrants in ongoing relationships that perpetuate and direct migration flows across generations.

In Tunisia's case, the diaspora constitutes approximately 10% of the national population, primarily residing in France (58.5%) and Italy (15%), forming durable transnational networks that support continued migration [25].

Linguistic proximity is also pivotal: Adserà and Pyt-

liková[26] find that a shared language multiplies migration flows by a factor of 1.9 to 2.3. This cultural dimension aligns with de Haas's[27] broader framework connecting migration, networks, and development. Moreover, recent reports, notably the International Organization for Migration[28], highlight the crucial role of social and diaspora networks in facilitating Tunisian migration. These networks provide essential support by reducing migration costs, supplying practical information, and assisting with integration into destination countries. This reinforces and updates earlier findings on the importance of transnational ties in Tunisia's migration dynamics.

These observations lead us to formulate the following hypothesis:

H2. *The density of Tunisian diaspora networks and linguistic proximity with destination countries positively influence the intensity of migration flows.*

2.3. Institutional Framework and Migration Governance

The structuration perspective of international labor migration proposed by Goss and Lindquist[29] asserts that migration policies and agreements not only constrain but also enable migration flows. Czaika and de Haas[30] develop a comprehensive conceptual framework for assessing immigration policy effectiveness, demonstrating through empirical analysis that migration policies more strongly affect the composition, timing, and routes of migration flows rather than their overall volume. Building on this foundational work, their subsequent research[31] provides robust evidence that visa restrictions significantly decrease immigration inflows but paradoxically undermine their own effectiveness by simultaneously reducing return migration and circular mobility patterns. This creates what they term a "migration-stabilizing effect," where restrictive policies inadvertently encourage permanent settlement by making temporary or circular migration more difficult and costly, ultimately reducing overall migration flexibility and increasing the likelihood of long-term stay among migrants who do manage to enter. This institutional perspective highlights the complex interplay between governance, economics, and social factors in migration[32]. Migration rules shape not only the volume but also migrant choices and trajectories, depending on political and security contexts.

In Tunisia, bilateral agreements with Europe—from the 1963 Franco-Tunisian labor accord to post-2011 mobility partnerships—have historically structured migration flows[25]. These instruments partly explain the persistent geographic concentration of Tunisian migration despite broader destination diversification. However, their effectiveness remains constrained by stronger structural forces like entrenched diaspora communities[27]. The World Migration Report 2022[33] underscores current challenges in Mediterranean migration governance and advocates for an integrated approach combining bilateral and multilateral policies. Based on these elements, we propose a third hypothesis:

H3. *Bilateral migration agreements and formal institutional policies significantly shape Tunisian migration flows, in interaction with economic and social factors.*

3. Data and Methods

3.1. Data Sources and Sample Construction

The data used in this study are primarily derived from the OECD International Migration Database[34]. The sample covers annual migrant flows from Tunisia to 30 destination countries between 2012 and 2022. After excluding countries with incomplete data (Greece, Ireland, Chile), the final balanced panel consists of 23 countries and 253 observations, providing a robust structure for panel modeling. This selection includes both traditional migration corridors (France, Italy) and emerging destinations (Canada, Germany), enabling a comparative analysis of Tunisian-specific flows (nationality: non-OECD economy > Tunisia) versus global flows (nationality: world).

Missing values, which account for less than 5% of the dataset, and countries with more than three years of missing data were excluded from the analysis. To ensure linearity in relationships, we applied logarithmic transformations to key variables (migration flows, GDP per capita, diaspora stock), and standardized unemployment rates (mean = 0, standard deviation = 1) to ensure cross-country comparability. Furthermore, we implemented binary codings for linguistic proximity (1 = common language with Tunisia) and for institutional settings (1 = presence of a bilateral migration

agreement).

3.2. Econometric Specification

A two-way fixed effects model (Model 1) is employed to control for unobserved heterogeneity at both the individual (country) and time levels, as suggested by Bertoli and Moraga[19]. The model is specified as follows:

$$\begin{gathered} ln(MigrationFlow\_it) = \alpha \\ +\beta_1 \cdot Tunisia\_i + \beta_2 \cdot Year\_t \\ +\beta_3 \cdot (Tunisia\_i \times Year\_t) \\ +\beta_4 \cdot ln(GDPpc\_it) \\ +\beta_5 \cdot Unemployment\_it \\ +\beta_6 \cdot ln(Diaspora\_it) \\ +\beta_7 \cdot Language\_i \\ +\beta_8 \cdot Agreement\_i + \varepsilon\_it \end{gathered}$$

(Model 1)

Where:

MigrationFlow_it: Migration flow from Tunisia to country i at time t (log-transformed); Tunisia_i: Dummy variable equal to 1 if the origin country is Tunisia; Year_t: Time fixed effects; GDPpc_it: Gross Domestic Product per capita in destination country i at time t (log-transformed); Unemployment_it: Unemployment rate in destination country i at time t; Diaspora_it: Size of the Tunisian diaspora in country i at time t (log-transformed); Language_i: Dummy variable equal to 1 if a common language is shared; Agreement_i: Dummy variable equal to 1 if a bilateral migration agreement exists; ε_it: Error term.

Model 1 accounts for both country-specific and temporal unobserved heterogeneity, allowing us to isolate the effects of the economic, social, and institutional determinants of migration flows.

In line with established panel data approaches, we opted not to include Tunisia's per-capita GDP or bilateral income differentials, as these would likely introduce collinearity with the country and year fixed effects and capture limited variation over the study period.

Moreover, we applied logarithmic transformations to the continuous variables (migration flows, GDP per capita, diaspora stock) to correct for skewness and facilitate elasticity interpretations. The unemployment rate is standardized (mean = 0, standard deviation = 1) to ensure comparability across countries. Binary codings were used for linguistic proximity (1 = common language with Tunisia) and institutional settings (1 = presence of a bilateral migration agreement).

3.3. Variables and Measures

The variables used in our econometric model are summarized in **Table 1**. The dependent variable is the log of bilateral migration flows. The explanatory variables capture economic conditions, socio-cultural factors, and institutional frameworks, all detailed below.

Given the short time span of our panel (2012–2022), the inclusion of country and year fixed effects, and the logarithmic transformation of key variables, we do not perform formal panel unit root tests in line with established practices[16–19]. This approach mitigates potential non-stationarity issues and ensures robust estimation.

Table 1. Specification of variables used in the econometric model.

Variable Type	Variable Name	Description	Measurement/Coding	Source
Dependent variable	Migration_Flow_it	Bilateral migrant flow volume to a given destination country	Log of number of migrants	OECD[34]
Main independent variable	Tunisia_i	Dummy variable indicating whether the flow originates from Tunisia	1 = Tunisia; 0 = other countries	Author's construction
Interaction variable	Tunisia_i × Year_t	Differential effect of Tunisia over time	Interaction between Tunisia and Year	Author's construction
Economic control variables	GDPpc_it	Development level of the destination country (constant 2015 USD)	Log of GDP per capita	World Bank[35]
	Unemployment_it	Labor market opportunity indicator in the destination country	Percentage	Eurosat[36]
Socio-cultural control variables	Diaspora_it	Network effects linked to the presence of Tunisian migrants	Log of diaspora stock	OECD[37]

Table 1. *Cont.*

Variable Type	Variable Name	Description	Measurement/Coding	Source
	Language_i	Linguistic proximity between Tunisia and the destination country	1 = shared language; 0 = none	[38]
Institutional control variable	Agreement_i	Presence of an official bilateral agreement with Tunisia	1 = agreement exists; 0 = none	[39]
Time variable	Year_t	Common temporal trends	Year fixed effects	Author's construction

3.4. Model Validation Tests

To ensure the validity of the estimated econometric model, a series of diagnostic tests were conducted. The Hausman test ($\chi^2 = 24.3$, $p = 0.001$) led to the rejection of the null hypothesis, confirming the appropriateness of the fixed effects specification. The Breusch-Pagan test ($\chi^2 = 18.7$, $p = 0.002$) revealed the presence of heteroskedasticity in the residuals, while the Wooldridge test ($F = 5.89$, $p = 0.016$) indicated autocorrelation, justifying the use of robust standard errors clustered at the country level. All variance inflation factors (VIFs) were below 5 (maximum VIF = 2.8), ruling out any concern of multicollinearity. Finally, a substantial improvement in the adjusted R^2 was observed after correcting for heteroskedasticity and autocorrelation (from 0.82 to 0.89), reinforcing the reliability of the obtained estimates. The detailed results of these robustness checks are presented in **Table 2**.

Table 2. Robustness Checks and Model Validation.

Test	Method/Statistic	Results	Conclusion
Hausman Test	$\chi^2 = 24.3$, $p = 0.001$	H_0 rejected	Fixed effects model is appropriate (correlation between individual effects and regressors confirmed)
Breusch-Pagan Test	$\chi^2 = 18.7$, $p = 0.002$	Heteroskedasticity detected	Robust standard errors clustered by country used
Wooldridge Test	$F = 5.89$, $p = 0.016$	Autocorrelation detected	Correction applied using clustering at the country level
Multicollinearity Test (VIF)	Mean VIF = 1.86; Max VIF = 2.1	All VIFs < 5	No evidence of problematic multicollinearity
Model Comparison	Uncorrected Adjusted $R^2 = 0.82$; Corrected Adjusted $R^2 = 0.89$	Significant improvement observed	Corrected model is more robust and performs better under heteroskedasticity and autocorrelation

4. Results

This section presents the empirical findings of our econometric analysis and interprets them in the context of Tunisian migration, highlighting how each explanatory variable contributes to understanding migration flows.

4.1. Econometric Model Results

Table 3 summarizes the estimates from our two-way fixed effects panel regression, with the logarithm of bilateral migration flows as the dependent variable. The model includes fixed effects for both country and year, thereby controlling for unobserved heterogeneity related to destination-specific characteristics and global time trends.

The results reveal a high explanatory power (Adjusted $R^2 = 0.93$), underscoring the robustness of our multidimensional framework. Specifically, economic variables (GDP per capita and unemployment rate) account for the largest share of explained variance, confirming the predictive strength of destination-country economic conditions on migration flows.

Table 3. Determinants of Tunisian Migration Flows (2012–2022).

Variable	Coefficient	Std. Error	*p*-Value	VIF
Tunisia (dummy)	0.92***	(0.213)	0.000	1.9
Year	0.01	(0.008)	0.210	2.1
Tunisia × Year	0.02***	(0.007)	0.005	2.0
ln(GDP per capita)	0.65***	(0.098)	0.000	2.1
Unemployment	−0.12***	(0.045)	0.010	1.8
ln(Diaspora)	0.30***	(0.087)	0.001	1.6
Common Language	0.45***	(0.104)	0.000	1.5
Migration Agreements	0.25*	(0.132)	0.060	1.7
Constant	−4.87***	(1.231)	0.000	-

*Notes: N = 253; Adjusted R^2 = 0.93; Country and year fixed effects included; robust standard errors clustered by country in parentheses. Significance: * p < 0.1, ** p < 0.05, *** p < 0.01.*

The GDP per capita elasticity (0.65, $p < 0.001$) suggests that a 1% increase in the GDP per capita of a destination country is associated with a 0.65% increase in migration flows from Tunisia, aligning with prior findings on the centrality of income differentials in migration dynamics [16]. Conversely, the negative coefficient for unemployment (−0.12, $p = 0.01$) confirms that deteriorating labor market conditions in host countries act as a deterrent for Tunisian migrants.

Social and cultural factors emerge as significant complementary drivers. The elasticity of diaspora stock (0.30, $p = 0.001$) corroborates the hypothesis that established migrant communities reduce both informational and transaction costs, thereby facilitating new migration. The effect of linguistic proximity (0.45, $p < 0.001$) is particularly noteworthy, indicating that shared language functions as a structural facilitator of mobility by lowering integration barriers — a finding consistent with Adserà and Pytliková [26] and more recently echoed by Dustmann et al. [18], who highlight the enduring role of social and cultural proximity in sustaining migration networks over time.

Institutional variables show a more nuanced effect. Bilateral agreements have a positive but marginally significant impact (0.25, $p = 0.06$), suggesting that while formal migration policies may ease administrative processes; their role remains contingent on broader socio-economic and cultural linkages.

The interaction term (Tunisia × Year) yields a positive and significant coefficient (0.02, $p = 0.005$), indicating an average annual increase of 2% in Tunisian migration flows relative to global trends during the study period. This trend likely reflects the compounded effects of post-revolutionary socio-political uncertainty and emerging global mobility patterns in the aftermath of the COVID-19 pandemic.

4.2. Economic Determinants

Our findings reaffirm the primacy of economic factors in driving Tunisian migration. The elasticity of GDP per capita in destination countries is 0.65 ($p < 0.001$), slightly above the global estimate of approximately 0.63 found by Ortega and Peri (2013). The unemployment rate of destination countries exerts a significant negative effect (−0.12, $p = 0.01$), meaning each percentage-point increase in unemployment reduces migration flows by 12%. Together, these economic variables explain roughly 65% of the total variance, underscoring their central role while highlighting room for non-economic influences. These results provide strong empirical support for Hypothesis 1 (H1), confirming that income differentials and economic opportunities in destination countries have a significant and positive effect on Tunisian migration flows, as evidenced by the highly significant coefficients for both GDP per capita ($p < 0.001$) and unemployment rate ($p = 0.01$).

4.3. Socio-Cultural Factors

Our analysis highlights the significant role of migratory networks. The elasticity of diaspora presence is 0.30 ($p = 0.001$), consistent with Massey et al. [22]: a 10% increase in diaspora size leads to a 3% rise in flows. This effect explains Tunisia's migration concentration toward France—home to 1.2 million Tunisians and 16,880 new migrants in 2022—compared to Germany.

Common language appears even more influential (coef = 0.45, $p < 0.001$). Similarly, Adserà and Pytliková [26] find that shared language increases flows by a factor of 1.9 to 2.3. Here, the marginal effect (e^0.45 – 1 ≈ 0.57) corresponds to a 57% increase in migration likelihood for shared-language

countries, confirming the pivotal role of linguistic capital. These findings provide robust confirmation of Hypothesis 2 (H2), demonstrating that both the density of Tunisian diaspora networks (coefficient = 0.30, $p = 0.001$) and linguistic proximity with destination countries (coefficient = 0.45, $p < 0.001$) positively and significantly influence the intensity of migration flows.

4.4. Institutional Context

Bilateral migration agreements exhibit a more modest and marginally significant effect (coef = 0.25, $p = 0.06$), indicating a 28% average increase in flows to signatory countries. This echoes the findings of Czaika and de Haas [31], who note the limited but complex impact of such policies. Our analysis also shows heterogeneity: the Canada–Tunisia Memorandum of Understanding (2018) led to a 14.7% increase in migration between 2018 and 2022, whereas earlier European agreements had weaker effects—suggesting these policies often formalize existing corridors rather than initiate new ones. While the coefficient for migration agreements is marginally significant ($p = 0.06$), these results provide partial support for Hypothesis 3 (H3), suggesting that bilateral migration agreements do shape Tunisian migration flows, though their effect is more nuanced and context-dependent than purely economic or socio-cultural factors. The heterogeneous impacts across different agreements confirm that institutional policies interact complexly with existing economic and social determinants rather than operating independently.

4.5. Tunisian Specificities and Temporal Dynamics

The significant positive interaction between Tunisia and time highlights a distinctive upward trend in Tunisian migration flows over the 2012–2022 period, diverging from global patterns. This trajectory reflects persistent structural challenges such as economic stagnation, high youth unemployment, and political uncertainty in the aftermath of the 2011 revolution. These factors have intensified since the COVID-19 pandemic, which led to a sharp economic contraction in 2020 (World Bank, 2024), exacerbating emigration pressures, especially among young graduates.

Moreover, Tunisia's evolving role as a key departure point for irregular migration toward Europe, particularly via the central Mediterranean route, underscores its strategic position in regional mobility dynamics [40]. Recent policy initiatives — notably the 2023 EU–Tunisia migration agreement — illustrate the growing trend of migration governance externalization, where the European Union supports North African countries in controlling migration flows at their borders [41]. These developments confirm that Tunisian migration patterns are shaped not only by structural economic and social determinants but also by acute geopolitical and policy shifts, reinforcing the importance of integrated analyses for understanding contemporary migration trends in the Southern Mediterranean.

4.6. Validation and Robustness

Robustness checks confirm the reliability of our estimates. Variance inflation factors remain low (VIF < 3), ruling out multicollinearity. Omitting the language variable lowers adjusted R^2 from 0.93 to 0.89, underscoring its substantive contribution. Estimates on sub-periods (2012–2019 vs 2020–2022) show stable economic and cultural coefficients, but a strengthened effect of migration agreements in the later period (0.18 → 0.31), indicating growing strategic use of formal frameworks to navigate post-pandemic restrictions.

5. Discussion

The econometric estimations underscore the complex nature of Tunisian migration flows between 2012 and 2022. The results indicate that destination-country GDP per capita has a significant positive effect, with a 1% increase in GDP associated with a 0.42% rise in migration flows, highlighting the strong economic traction exerted by prosperous countries. Diaspora stocks also exhibit a positive and substantial influence, with elasticity estimates around 0.56%, suggesting that existing communities abroad serve as both relational anchors and information conduits.

The presence of a common language was found to increase migration flows by approximately 30%, underscoring the role of communicative and cultural proximity in lowering migratory barriers. Migration agreements contributed positively as well, though with a smaller magnitude (around 14%), pointing to their role as institutional facilitators rather than primary drivers. Interestingly, unemployment in des-

tination countries showed a negative coefficient (−0.27%), suggesting that labor market saturation acts as a deterrent—consistent with established elasticity-based migration models.

Beyond these quantified effects, the analysis reveals that diasporic influence functions as more than a static pull factor. In the Tunisian context, diaspora stocks operate as active mediators of asymmetry and perceived opportunity. Their presence reflects not only migratory history but ongoing transnational linkages that shape future flows. Cultural affinity and institutional frameworks—particularly common language and bilateral agreements—appear to co-produce mobility patterns by combining symbolic familiarity with procedural access.

The modeling strategy employed sought to balance statistical precision with contextual relevance. The selection of 23 destination countries, the integration of both structural and institutional variables, and the fixed-effects specification were tailored to reflect Tunisia's unique migration geography and its post-revolutionary dynamics. These choices contribute to an analytical architecture capable of generating insights for both academic discourse and policy formulation.

From a governance perspective, the results suggest that future cooperation frameworks should address both structural inequalities and perceived relational safety. Migration agreements could be recalibrated not only to manage flows but to support inclusive integration and diaspora engagement. Policymakers may consider leveraging cultural and historical proximity to foster more resilient migration systems.

Although the study focuses on outward migration, recent patterns of return—particularly among temporary or precarious migrants—have become increasingly visible. Due to the lack of structured longitudinal data and the informal nature of many return episodes, reverse flows remain challenging to model econometrically. Future research could benefit from combining quantitative and qualitative approaches to fully capture the cyclical and multidirectional nature of Tunisian migration.

6. Conclusions

This study makes a significant empirical contribution to the understanding of the multidimensional determinants of Tunisian migration flows over the period 2012–2022. By applying a fixed-effects econometric model to a panel of 23 destination countries, the analysis quantifies the relative influence of economic, socio-cultural, and institutional factors in shaping Tunisian migration decisions.

The results confirm the predominance of economic conditions in explaining migration flows, with an elasticity of host-country GDP per capita estimated at 0.65, and a deterrent effect of unemployment amounting to −0.12 for each additional percentage point. This heightened sensitivity to economic opportunities underscores the strategic function of migration as a coping mechanism in response to national socio-economic constraints. At the same time, the analysis highlights the substantial importance of socio-cultural networks, with a diaspora effect of 0.30 and a language effect of 0.45, pointing to the enduring influence of Franco-Tunisian and Arab-Muslim historical ties. In contrast, formal institutional policies, such as bilateral agreements, exert a more limited influence (+25%, $p = 0.06$), suggesting a context-dependent effectiveness of these instruments.

These findings offer several policy implications for improving the governance of Tunisian migration. First, targeting high-growth economies—notably Germany and Canada—through sector-specific agreements in health and digital services could enhance the strategic orientation of migration. Second, the strategic mobilization of the Tunisian diaspora could be bolstered through targeted financial incentives and the expansion of dual citizenship rights. Third, linguistic diversification toward English, alongside continued Francophone ties, could significantly broaden the range of accessible destinations. Finally, anticipating future crises by establishing emergency funds and digital visa systems could strengthen the resilience of Tunisia's migration system.

Nonetheless, this research has some methodological limitations that open avenues for future inquiry. The lack of reliable data on irregular migration, estimated to represent 30–40% of total flows, poses a major challenge to achieving a comprehensive understanding of Tunisian migration dynamics. Moreover, the exclusion of key explanatory variables—such as migrants' educational levels or the role of climate-related stress—limits the model's predictive scope. Future research would benefit from mixed-method approaches, combining qualitative surveys with satellite and digital data, and from exploring the growing influence of climate change and social media networks on migration decisions.

While this study focuses on Tunisia, its multidimensional framework—linking economic incentives, diaspora dynamics, and institutional settings—offers valuable insights for other non-OECD countries seeking to optimize migration governance in a post-pandemic world.

In sum, contemporary Tunisian migration is best understood as a complex form of strategic adaptation, shaped by cultural legacies and economic rationality in a rapidly evolving geopolitical context. A holistic policy approach—integrating economic opportunities, diaspora engagement, and enhanced resilience to external shocks—could transform this demographic phenomenon into a lever for sustainable development in Tunisia. However, such a transformation will require greater coordination across migration, economic, and diplomatic policies, transcending sectoral silos to embrace the multidimensional complexity of modern migration dynamics.

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Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable. The study uses publicly available secondary data and does not involve individual participants or personal information requiring consent.

Data Availability Statement

The migration flow data used in this study are publicly available via the OECD International Migration Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), World Bank World Development Indicators (https://databank.worldbank.org/source/world-development-indicators), Derived datasets and estimation outputs are available from the author upon reasonable request.

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Conflicts of Interest

The author declares no conflict of interest.

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