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Posted Date: 12 December 2024

doi: 10.20944/preprints202412.1034.v1

Keywords: Brain Migration; Worldwide Governance; Uneven Economic Development; Global Dynamics.



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Article

# Determinants of Brain Drain in 178 Countries from 2006 to 2022

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**Abstract:** The brain drain phenomenon represents a significant challenge to global development, especially in developing countries. This study examines the determinants of brain drain in 178 countries between 2006 and 2022. Through a panel data analysis that integrates indicators of governance and state fragility, a multiple linear regression model is employed to assess the influence of socioeconomic and political variables on the migration of skilled personnel. The results identify six key variables: uneven economic development, quality of public services, external intervention, voice and accountability, rule of law and political stability. Among these, governance, particularly political stability and rule of law, emerges as a crucial factor for talent retention, while external interventions tend to exacerbate brain drain as an expression of instability. The study also highlights how the quality of public services can reduce emigration intentions, while economic inequalities drive migration to regions with better opportunities. With an adjusted R-squared above 70%, the proposed parsimonious model provides a robust framework for understanding the dynamics of brain drain in the global context. These findings are essential for designing effective public policies to mitigate talent emigration, promote economic equality and strengthen governance. Future research should focus on exploring regional and economic variations, with emphasis on the implementation of specific policies to counteract the adverse effects of this phenomenon.

**Keywords:** brain migration; worldwide governance; uneven economic development; global dynamics

## 1. Introduction

The brain drain phenomenon is a concern for many countries (Vega-Muñoz et al., 2021), because higher skills migration negatively affects development and puts the focus on establishing its determinants (Ienciu & Ienciu, 2015). These negative effects are related to labor scarcity and demographic challenges (Thaut, 2009).

While differences in employment and economic opportunities are the main drivers of high-skill emigration (Hoti, 2009). This phenomenon is intensified by territorial inequalities and economic crises (Asso, 2021). Clearly, in this migration type, poverty increases the intention to migrate (Diallo, 2022). But, in developing countries, economic freedom also plays a role, since higher levels of economic freedom decrease this type of migration (Aarhus & Jakobsen, 2019).

Political factors, such as dissatisfaction and the desire for greater democracy, are superimposed on economic factors, influencing the brain drain (Fetzer & Millan, 2015). Other studies indicate that the increased emigration of highly educated people has dissatisfaction, lack of trust and political dissatisfaction as its main motivators (Fakih & El Baba, 2023). Finally, Strielkowski et al. (2021) study geopolitical factors and multiculturalism, linking brain drain with national security, and thus the need to protect a country's skilled labor force. Which can be gravitating in sectors such as healthcare (Marchal & Kegels, 2003), although healthcare professionals also have their motivations tied to economic reasons (Abou Hashish & Ashour, 2020, Lanati & Thiele, 2021).

On the one hand, at origin, low wages, unemployment, an underdeveloped economy and labor mobility facilities are combined, and on the other hand, at destination, mainly the demand for cheap labor (Thaut, 2009). Studies such as Dibeh et al. (2018) typify the brain drain more prone to migrate as young people from less prosperous families, living in poor regions and mainly unemployed. As a result, the brain drain produces relief from the lack of job openings for skilled workers and increases national income from remittances (Thaut, 2009). These same remittances in turn facilitate highly skilled migration to developed countries (Grigoryan & Khachatryan, 2022).

Additionally, Iqbala et al. (2020) explore the reasons for the brain drain, pointing out that high salaries outside the country, better opportunities and education are the main factors. From the educational sphere, strengthening the internal educational capacity would be a way to mitigate the brain drain at the student stage (Kritz, 2015). But it is of great importance to identify the beliefs that motivate the departure of potential emigrants, to design targeted policies to effectively manage skilled migration and reduce its negative impacts (Ramoo, Lee, & Yu, 2017, Vega-Muñoz et al., 2024).

Benhamou (2008) highlights how brain drain, linked to demographic pressures, aggravates problems such as migration due to desertification and mass migration in regions such as the Sahara, weakening local capacity to face challenges. At a global level, Vega-Muñoz et al. (2024b) point out that economic inequality and internal displacements contribute directly to this phenomenon, requiring comprehensive approaches for its mitigation. Thaut (2009) analyzes how in Lithuania factors such as unemployment and low wages, after its accession to the EU, intensify the brain drain, affecting its development.

Another important factor contributing to brain drain is state fragility and regional imbalances. Seyoum and Camargo (2021) identify institutional weakness as a critical component that drives talent emigration and limits foreign direct investment. Carlsen and Bruggemann (2017) emphasize how these phenomena intensify problems such as economic deterioration and group grievances, affecting especially acutely during migration crises in Europe. For their part, Egyed and Zsibók (2023) propose that strengthening core economic activities could help reduce regional imbalances and mitigate the loss of talent.

External intervention and government effectiveness are intrinsically related to brain drain, given their impact on local stability and opportunities (Vega-Muñoz et al., 2024b). And Chee and Mu (2021) emphasize that external intervention, by destabilizing regions, fosters the displacement of skilled talent by amplifying conflicts and weakening institutions, and reinforce this perspective by associating such intervention with the increase in terrorist attacks, creating hostile environments that drive emigration. On the other hand, Simplicé (2014) points out that controlling corruption and investing in key sectors such as health are essential to curb the loss of human capital, while Simplicé (2015) stresses that well-designed migration policies and strengthening human development are crucial to retain talent. These studies underline that effective governance, free from destabilizing external interference, is fundamental to mitigate brain drain and generate sustainable environments that incentivize professionals to stay in their countries of origin.

Other studies point to political instability, violence, and terrorism as influencing the brain drain. Subhani, Tajuddin, and Diah (2018) note that these conditions in India have driven out-migration of skilled Muslims. And Vega-Muñoz et al. (2024b) highlight that insecurity weakens social cohesion and encourages migration. Meanwhile, Huang (2023) shows that the perception of stability determines emigration in contexts such as South Africa and the United States. And Monekosso (2014) links conflicts in sub-Saharan Africa with the outflow of health professionals. Stability is thus key to stemming this loss of talent.

To maintain governmental stability, the rule of law becomes a key element for sustainable development and stability in developing countries. Barnett, Cummings and Vaaler (2012) point out that remittances can strengthen it, partially mitigating the effects of brain drain. And Vega-Muñoz et al. (2024b) identify it as essential for governance and stability, while Nadeem et al. (2021) warn that its weakness slows innovation and investment. Strengthening the rule of law is fundamental for combating corruption and fostering sustainable development.

Also, governmental stability allows for a solid security apparatus, fundamental to mitigate brain drain by ensuring stability and trust in local institutions. Vega-Muñoz et al. (2024b) identify it as a key element in governance, highlighting its importance in retaining talent and promoting safe environments. And Chee and Mu (2021) highlight its relevance in the Silk Belt and Road Initiative (BRI), where security failures have intensified terrorism in regions such as Iraq and Afghanistan, showing the need to strengthen these systems to reduce risks and promote stability.

In turn, in island states, poor debt management restricts essential services (Moloney, 2019). While in Yemen, conflicts deteriorate higher education, aggravating the loss of qualified talent (AlMunifi & Aleryani, 2021). On the contrary, in Canada, public policies strengthen social cohesion and reduce emigration (Kesselman, 2001). Globally, public services are key to stability and governance (Vega-Muñoz et al., 2024b). However, in Thailand, wage disparities promote out-migration, weakening public services (Nittayaramphong & Tangcharoensathien, 1994). And in Azerbaijan, trust in public services influences migration decisions (Aliyev & Gasimov, 2023). Thus, in rural areas, the triple helix improves services and fosters talent retention (Knauer, 2009). Finally, the limited sustainability of public systems complicates service provision in developing countries (Larsen, 2008). These findings underscore the importance of strengthening public services to reduce brain drain.

An incident factor identified in several studies is corruption, which weakens institutions and restricts opportunities, intensifying the brain drain. In Nepal, nepotism and lack of labor transparency encourage the emigration of skilled professionals (Mainali, 2020), while in North Macedonia and India, corruption in higher education and religious discrimination directly affect talent retention (Jovcheska, 2024; Subhani et al., 2018). In sub-Saharan Africa, corruption and weak institutions hinder development and aggravate the loss of human talent (Usman et al., 2022; Ndjobo & Simoes, 2021). Cases such as Venezuela and Russia reflect how these dynamics perpetuate mass emigration and undermine essential sectors (Zea, 2020; Safina, 2015; Romanov, 2017).

Finally, empirical studies corroborate this relationship. Cooray & Schneider (2016) link increased corruption with higher rates of skilled emigration, while Rogers (2008) highlights its negative impact on economic growth. In Greece and Serbia, political corruption and university inefficiency accelerate academic out-migration (Panagiotakopoulos, 2020; Pejanovic et al., 2015), and in Pakistan, they reinforce structural inequalities and limit innovation (Khalid & Qureshi, 2020; Nadeem et al., 2021). In addition, corruption in social and migration systems in Zimbabwe, Africa and Asia-Pacific perpetuates the outflow of talent to developed countries (Mwapaura et al., 2022; Chand, 2019; Hugo, 2013). Furthermore, Monekosso (2014) highlights the persistent challenges in African medical education, underlining the need to combat corruption to stem the brain drain and enhance sustainable development.

## 2. Methods

Establishing the global determinants of Brain Drain (Human Flight and Brain Drain, E3) as in previous studies responds to causative variables such as: Security Apparatus (C1) (Chee & Mu, 2021), Economic Decline (E1) (Seyoum & Camargo, 2021, Carlsen & Bruggemann, 2017, Egyed & Zsibók, 2023), Uneven Economic Development (E2) (Petrou & Connell, 2023), Public Services (P2) (Knauer, 2009, Aliyev & Gasimov, 2023, Zhang, Hao & Wang, 2024), Demographic Pressures (S1) (Benhamou, 2008, Thaut, 2009), External Intervention (X1) (Chee & Mu, 2021), Voice and Accountability (G1) (Goldberg, 2006, Muthanna & Sang, 2018), Political Stability and Absence of Violence/Terrorism (G2) (Monekosso, 2014, Subhani, Tajuddin, & Diah, 2018, Huang, 2023), Government Effectiveness (G3) (Simplice, 2014, 2015), Rule of Law (G5) (Barnett, Cummings & Vaaler, 2012, Nadeem et al., 2021), and Control of Corruption (G6) (King & Gëdeshi, 2023; Safina, 2015; Iacob, 2018; Romanovska et al., 2022; Monekosso, 2014; Hugo, 2013; Romanov, 2017; Pejanovic et al., 2015).

Then, null hypothesis:  $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = 0$ , and alternative hypothesis:  $H_a$ : at least one  $\beta_i \neq 0$  ( $i = 1, \dots, 11$ ).

As for the data under study, we have used a dataset available under the structure of global panel data on world governance and state fragility from 2006 to 2022 (Vega-Muñoz et al., 2024b). Based on this dataset on 178 countries, we have applied multiple regression of equation 1:

$$E3 = \beta_1 * C1 + \beta_2 * E1 + \beta_3 * E2 + \beta_4 * P2 + \beta_5 * S1 + \beta_6 * X1 + \beta_7 * G1 + \beta_8 * G2 + \beta_9 * G3 + \beta_{10} * G5 + \beta_{11} * G6 + \varepsilon \quad (1)$$

The data were treated by multiple linear regression with SPSS version 23 software (IBM, New York, NY, USA), using the stepwise method. For the incorporation of variables, the adjusted R-squared values (Chicco et al., 2021) were considered, but maintaining parsimony (McNeil, 1970) and without neglecting the multicollinearity results, expressed in terms of variance inflation factor (VIF) and condition indices. Multicollinearity is present when the VIF is greater than the range of 5 to 10 or the condition indices are greater than the range of 10 to 30 (Kim, 2019).

**Table 1.** Description of study variables.

Variable	N	Mean	Standard deviation	Pearson correlation with E3
Human Flight and Brain Drain (E3)	2989	5.540	2.05	1.00
Security Apparatus (C1)	2989	5.623	2.35	0.69
Economic Decline (E1)	2989	5.708	1.95	0.74
Uneven Economic Development (E2)	2989	6.150	2.07	0.72
Public Services (P2)	2989	5.617	2.49	0.78
Demographic Pressures (S1)	2989	6.039	2.27	0.74
External Intervention (X1)	2989	5.699	2.38	0.75
Voice and Accountability (G1)	2989	-.138	1.01	-0.46
Political Stability and Absence of Violence/Terrorism (G2)	2989	-.170	.97	-0.53
Government Effectiveness (G3)	2989	-.107	1.00	-0.73
Rule of Law (G5)	2989	-.151	1.00	-0.72
Control of Corruption (G6)	2989	-.124	1.01	-0.65

### 3. Results

Table 2 shows the summary of proposed models according to the regression coefficient.

**Table 2.** Proposed models summary.

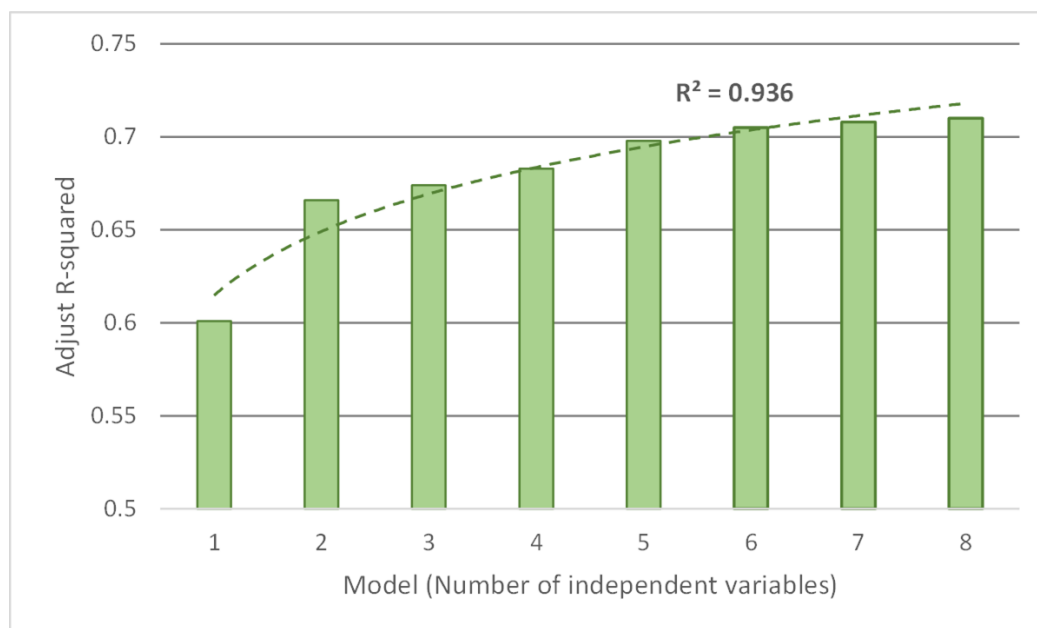
Model	Predictors	R	R-squared	Adjusted R-squared	Std. error of estimation
1	P2	.776	.602	.601	1.296
2	P2, X1	.816	.666	.666	1.187
3	P2, X1, E2	.821	.674	.674	1.172
4	P2, X1, E2, G1	.826	.683	.683	1.156
5	P2, X1, E2, G1, G5	.835	.698	.698	1.129
6	P2, X1, E2, G1, G5, G2	.840	.706	.705	1.115
7	P2, X1, E2, G1, G5, G2, C1	.842	.709	.708	1.109
8	P2, X1, E2, G1, G5, G2, C1, E1	.843	.710	.710	1.106
9	P2, X1, E2, G1, G5, G2, C1, E1, G6	.844	.712	.711	1.104
10	P2, X1, E2, G1, G5, G2, C1, E1, G6, G3	.845	.714	.713	1.100
11	P2, X1, E2, G1, G5, G2, C1, E1, G6, G3, S1	.845	.715	.714	1.099

Complementarily, Table 3 shows the results of the Analysis of Variance (ANOVA) of the 11 models and reports the multicollinearity of these models.

**Table 3.** ANOVA and Multicollinearity report for the dependent variable Human Flight and Brain Drain.

	Model	Sum of squares	df	Mean Square	F test	Sig.	VIF > 10	Condition index > 30
1	Regression	7572.337	1	7572.337	4509.459	.000	No	No
	Residual	5015.806	2987	1.679				
	Total	12588.144	2988					
2	Regression	8382.389	2	4191.194	2975.662	.000	No	No
	Residual	4205.755	2986	1.408				
	Total	12588.144	2988					
3	Regression	8490.582	3	2830.194	2061.745	.000	No	No
	Residual	4097.562	2985	1.373				
	Total	12588.144	2988					
4	Regression	8598.433	4	2149.608	1607.744	.000	No	No
	Residual	3989.710	2984	1.337				
	Total	12588.144	2988					
5	Regression	8787.083	5	1757.417	1379.187	.000	No	No
	Residual	3801.061	2983	1.274				
	Total	12588.144	2988					
6	Regression	8883.446	6	1480.574	1191.750	.000	No	No
	Residual	3704.697	2982	1.242				
	Total	12588.144	2988					
7	Regression	8921.901	7	1274.557	1036.335	.000	No	No
	Residual	3666.242	2981	1.230				
	Total	12588.144	2988					
8	Regression	8941.701	8	1117.713	913.434	.000	No	No
	Residual	3646.443	2980	1.224				
	Total	12588.144	2988					
9	Regression	8960.777	9	995.642	817.678	.000	Yes	No
	Residual	3627.366	2979	1.218				
	Total	12588.144	2988					
10	Regression	8983.164	10	898.316	742.081	.000	Yes	No
	Residual	3604.979	2978	1.211				
	Total	12588.144	2988					
11	Regression	8996.000	11	817.818	677.769	.000	Yes	Yes
	Residual	3592.144	2977	1.207				
	Total	12588.144	2988					

Table 3 shows that the 11 models present significant results in the F test, but three of these models report multicollinearity problems (models 9, 10 and 11). Figure 1 shows the adjusted R-squared values of the 8 models that do not present multicollinearity problems, given the logarithmic growth that this statistic presents with the incorporation of new variables, we have considered contrasting the 3 models with the highest adjusted R-squared: models 6, 7 and 8, all of which exceed 70% of fit (see Figure 1) and whose fit parameters are shown in Table 4.

**Figure 1.** Adjusted R-squared growth.

**Table 4.** Selection of Models for the dependent variable Human Flight and Brain Drain.

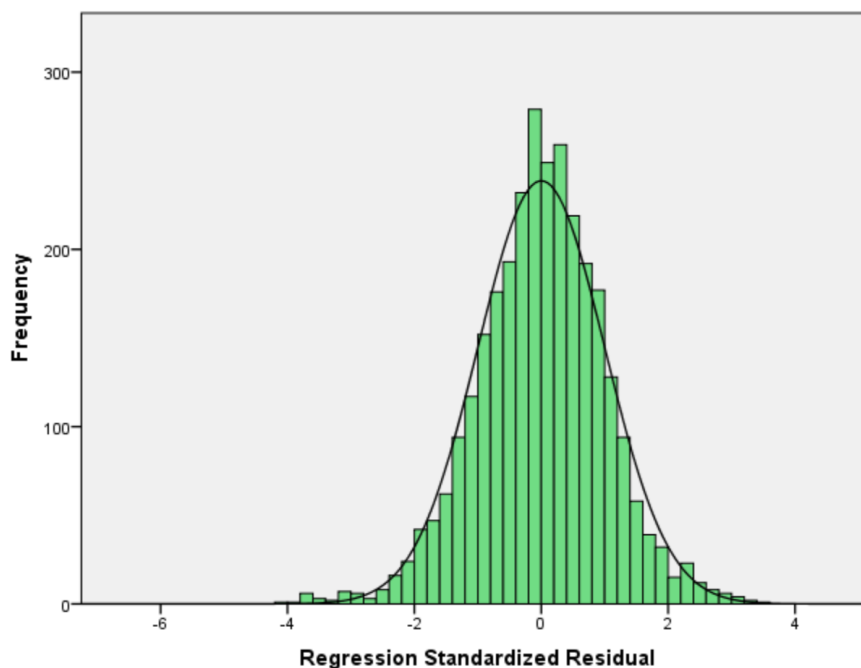
Model	Sum of squares	df	Root mean square	F test	Sig.	R	R-squared	Adjusted	Standard error	
								R-squared	of estimation	
<b>Model 6:</b>	Regression	8883.446	6	1480.574	1191.750	.000	.840	.706	.705	1.115
P2, X1, E2, G1, G5, G2.	Residual	3704.697	2982	1.242						
	Total	12588.144	2988							
<b>Model 7:</b>	Regression	8921.901	7	1274.557	1036.335	.000	.842	.709	.708	1.109
P2, X1, E2, G1, G5, G2, C1.	Residual	3666.242	2981	1.230						
	Total	12588.144	2988							
<b>Model 8:</b>	Regression	8941.701	8	1117.713	913.434	.000	.843	.710	.710	1.106
P2, X1, E2, G1, G5, G2, C1, E1.	Residual	3646.443	2980	1.224						
	Total	12588.144	2988							

By keeping the adjusted R-squared level above 70%, model 6 gives a more parsimonious response to the independent variable, based on the variables: Public Services (P2), External Intervention (X1), Uneven Economic Development (E2), Voice and Accountability (G1), Rule of Law (G5), Political Stability and Absence of Violence/Terrorism (G2), the coefficients of model 6 are shown in detail in table 5.

**Table 5.** Coefficients Model 6 for the dependent variable Human Flight and Brain Drain.

Model 6	Unstandardized		Standardized		95.0% Confidence			Collinearity Statistics	
	Coefficients		Coefficients		Interval for B		Tolerance	VIF	
	B	Std. Error	Beta	t	Sig.	Lower Bound			Upper Bound
(Constant)	1.343	.105		12.752	.000	1.137	1.550		
Public Services	.216	.020	.262	10.948	.000	.177	.255	.173	5.784
External Intervention	.327	.014	.379	23.469	.000	.299	.354	.378	2.642
Uneven Economic Development	.182	.018	.183	9.939	.000	.146	.218	.290	3.449
Voice and Accountability	.465	.034	.228	13.846	.000	.399	.530	.363	2.757
Political Stability and Absence of Violence/Terrorism	.291	.033	.138	8.807	.000	.227	.356	.403	2.482
Rule of Law	-.757	.052	-.367	-14.430	.000	-.859	-.654	.153	6.555

All 6 dependent variables are significant and there is no multicollinearity (details of the Condition Index in Table A1 of Appendix A). As for the normality of the errors, Figure 2 presents a histogram of the regression standardized residual with mean =  $-8.11 \times 10^{-15}$  and a standard deviation of 0.999 (details of residuals statistics in Table A2 of Appendix A).



**Figure 2.** Histogram of regression standardized residual for the dependent variable Human Flight and Brain Drain.

#### 4. Discussion

Our model of brain drain determinants considers information from 178 countries, giving a more panoramic global view than previous studies by Docquier et al. (2007) based on data from 30 countries (Docquier & Marfouk, 2006), and Simplice (2015) with data from 24 countries. And while the work of Yakovlev and Steinkopf (2014) analyzes data from 144 countries, they focus exclusively on Medical Brain Drain. Additionally, the work of Ngoma and Ismail (2013) analyzes brain drain in general for 102 countries but uses cross-sectional data.

As for the input variables, we have considered a base that makes a merge (Vega et al., 2024b), on the one hand, incorporates the Fragile States Index Indicators used by Chee and Mu (2021), and on the other hand, the World Governance Indicators also studied by Kizhakethalackal et al. (2015).

The six beta predictors ( $\beta_i$ ) of our null hypothesis, for which we have no evidence to accept (the 6 are non-zero), recognizing the causality of variables present in other previous brain drain studies: 1) Uneven Economic Development (E2) and mobility in the face of unequal labor markets studied by Petrou & Connell (2023) in Oceania, 2) Public Services (P2) whose development would reverse emigration intentions studied by Aliyev & Gasimov (2023) in Azerbaijan and by Zhang et al, (2024) within China, 3) External Intervention (X1) (Chee & Mu, 2021), in studying the brain drain in the framework of terrorist attacks in the countries of the "Silk Road Economic Belt" and the "21st Century Maritime Silk Road" (BRI countries), 4) Voice and Accountability (G1) in the study of the 'skills shortage' in Canada (Goldberg, 2006), 5) Political Stability and Absence of Violence/Terrorism (G2) where it is shown that greater political stability could help prevent the flight of highly skilled talent from developing countries. (Huang, 2023), and 6) Rule of Law (G5) where the lack of a strong rule of law may contribute to the emigration of highly skilled people affecting innovation and economic development. (Nadeem et al., 2021).

Additionally, we have established a dependence of the brain drain on more specific variables than the Level of development and Sociopolitical environment (Political stability and Government effectiveness) used by Docquier et al (2007), Foo (2011), and Ngoma et al (2013), or the Quality of Living Index of the Economist Intelligence Unit added by Foo (2011). Thus, our work is closer to works such as Simplice (2015) who incorporates in his study additional variables from the World Development Index, such as: Economic considerations (Savings, Inflation, and Population growth), Political considerations (Democracy, and Control of corruption), Physical security (Freedom, and Government effectiveness), Quality of life (Inequality adjusted human development, and Development assistance), and Globalization (Foreign investment, and Trade openness), and Aliyev et al (2023), who use as dependent variables perceived income adequacy, life satisfaction, and trust in government.

In this sense, our research uses as sociopolitical variables common to the works of Docquier et al (2007), Foo (2011), and Ngoma et al (2013) the Government Effectiveness and Political Stability (and Absence of Violence/Terrorism). In the case of Simplice (2015), our measure of Security Apparatus, External Intervention and Absence of Violence/Terrorist aligns with his Physical security dimension, as well as Economic Decline with his Economics consideration dimension. Finally in the case of Aliyev et al. (2023), our consideration for Uneven Economic Development is close to their perceived income adequacy variable, and their measure of trust in government approximates the set of variables that measure the relationship of citizens with the state (Public Services, Voice and Accountability, Rule of Law, and Control of Corruption).

Thus, when considering only the variables that our model includes as parsimoniously significant, we find variables directly or tangentially studied in Brain Drain research: Political Stability and Absence of Violence/Terrorism (Docquier et al., 2007, Foo, 2011, Ngoma et al., 2013, and Simplice, 2015), Uneven Economic Development, Public Services, Voice and Accountability, Rule of Law (Aliyev et al., 2023), to which External Intervention is added as a particularity of our work.

## 5. Conclusions

The model of brain drains determinants, after being subjected to the eleven-variable dependence test, has established that the null hypothesis cannot be accepted for betas:  $\beta_3$ ,  $\beta_4$ ,  $\beta_6$ ,  $\beta_7$ ,  $\beta_8$  and  $\beta_{10}$ . Thus, a set of six significant and parsimonious predictors based on panel data of 178 countries from 2006 to 2022 determines the brain drain dependence according to equation 2.

$$E3 = k + \beta_4 * P2 + \beta_6 * X1 + \beta_3 * E2 + \beta_7 * G1 + \beta_{10} * G5 + \beta_8 * G2 + \varepsilon \quad (2)$$

With  $k$ , a base constant of the model and the following independent variables: Public Services (P2), External Intervention (X1), Uneven Economic Development (E2), Voice and Accountability (G1), Rule of Law (G5), Political Stability and Absence of Violence/Terrorism (G2) and  $\varepsilon$  assume the residual errors. For the data set used the model is calibrated with normally distributed residual errors as follows in equation 3:

$$E3 = 1.343 + .262 * P2 + .379 * X1 + .183 * E2 + .228 * G1 + -.367 * G5 + .138 * G2 + \varepsilon \quad (3)$$

Future lines of research can delve into recalibrations of the model for different sets of countries according to levels of economic development, trade blocks and geopolitical blocks, and cross-sectional years in the panel data. In addition to delving into the management of these determinants in the field of public policy, in particular brain gain and brain circulation programs, and both the phenomenon of digital nomadism and the economic implications of remittances and diaspora policies.

**Author Contributions:** Conceptualization, A.V.-M and P.G.-G.d.M.; methodology, A.V.-M.; validation, N.C.-B.; formal analysis, A.V.-M.; data curation, A.V.-M., and N.C.-B.; writing—original draft preparation, A.V.-M. and N.C.-B.; writing—review and editing, A.V.-M. and P.G.-G.d.M.; supervision, P.G.-G.d.M.; project administration, A.V.-M. All authors have read and agreed to the published version of the manuscript.

**Funding:** The publication fee (APC) was partially financed by the Universidad Central de Chile (Code: APC2024) and Pontificia Universidad Católica de Valparaíso (Code: APC2024), through the publication incentive fund.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The original data presented in the study are openly available in Data in Brief at <https://doi.org/10.1016/j.dib.2024.110167>.

**Acknowledgments:** The authors would like to thank the Doctoral Program in Political and Administration Sciences and International Relations (Faculty of Political Sciences and Sociology) at the Complutense University of Madrid (Spain), specifically at the research line "International relations: Dynamics of change in global society" for providing access to specialized bibliographic material.

**Conflicts of Interest:** The authors declare no conflicts of interest.

## Appendix A

**Table A1.** Collinearity Diagnostics Model 6 for the dependent variable Human Flight and Brain Drain.

Dimension	Eigenvalue	Condition Index	Variance Proportions						
			(Constant)	P2	X1	E2	G1	G2	G5
1	4.496	1.000	.00	.00	.00	.00	.01	.01	.00
2	1.882	1.546	.00	.00	.00	.00	.05	.05	.02
3	.353	3.568	.00	.00	.00	.00	.44	.61	.00
4	.180	4.995	.01	.00	.00	.00	.46	.31	.47
5	.045	9.954	.01	.05	.89	.12	.00	.01	.00
6	.025	13.367	.91	.25	.05	.07	.03	.01	.49
7	.018	15.724	.07	.70	.05	.81	.02	.00	.02

**Table A2.** Residuals Statistics Model 6 for the dependent variable Human Flight and Brain Drain.

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.314	8.813	5.540	1.724	2989
Std. Predicted Value	-2.450	1.898	.000	1.000	2989
Standard Error of Predicted Value	.024	.116	.052	.013	2989
Adjusted Predicted Value	1.313	8.816	5.540	1.724	2989
Residual	-4.551	3.810	.0000	1.114	2989
Std. Residual	-4.083	3.418	.000	.999	2989
Stud. Residual	-4.086	3.430	.000	1.000	2989
Deleted Residual	-4.557	3.836	-.0001	1.116	2989
Stud. Deleted Residual	-4.097	3.436	.000	1.001	2989
Mahal. Distance	.435	31.509	5.998	3.577	2989
Cook's Distance	.000	.012	.000	.001	2989
Centered Leverage Value	.000	.011	.002	.001	2989

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