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The Geoeconomics of Investment in a Landlocked Country: Nepal's FDI Puzzle in the Global South

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Abstract

Foreign direct investment (FDI) inflow is a well-known source for capital, technology, and management transfer across the Global South. However, Nepal captures less than half a percent of regional inflows, despite its strategic location. We investigate how geoeconomic forces shape the attractiveness of FDI in Nepal using a gravity modeling technique, utilizing seven cross-section and eleven time series observations from 2008 to 2018. The estimated results suggest that cultural proximity causes an increase in the FDI inflows, whereas geographic distance deters it by escalating logistical expenses and other glitches. Macroeconomic instability and demand conditions dominate cost-based factors, such as labor abundance. Human-capital capability exhibits a strong positive association with horizontal FDI, whereas natural-resource rent plays only a minimal role, reflecting governance constraints rather than factor-endowment advantages. It highlights the centrality of stability, capability formation, efficient economic diplomacy, and resource governance in positioning Nepal as a competitive FDI destination.

Keywords: Foreign Direct Investment, Gravity Model, Geoeconomics, Global South, Distance Cost, Cultural Proximity

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1. Introduction

Foreign direct investment (FDI) inflow is considered one of the major sources of capital and technology transfer across the Global South; however, Nepal captures only a marginal share, that is, less than half a percent of regional inflows, despite its strategic location with large markets in its neighbors, India and China. For many countries in the Global South, FDI helps to bridge gaps in capital, technology, and managerial expertise required for industrialization and economic development. Nevertheless, the geographic distribution of global FDI remains uneven. Despite liberalization and integration initiatives, landlocked developing countries (LLDCs), including Nepal, remain marginalized, while a small number of coastal and industrialized economies receive the majority of investment (UNCTAD, 2024a; UNDP, 2025). This disparity highlights the geoeconomics of investment, how geography, economic condition, and policy credibility all influence global capital flows.

Nepal exemplifies this paradox. Strategically positioned between two of the world's largest and most rapidly expanding markets, India and China, it is expected to benefit from substantial investment spillovers. Nonetheless, its proportion of South Asia's FDI inflows remains at only 0.31%, trailing behind Bangladesh, Sri Lanka, and even the Maldives (Nepal Rastra Bank, 2018). Political instability, fragile institutional frameworks, and inadequate physical connectivity have undermined investor confidence and intensified the structural challenges associated with landlockedness (Chaudhary & Paudel, 2024). These characteristics posit Nepal as an exemplary case for analyzing how geographical distance, economic condition, resource availability, and cultural proximity collectively influence FDI performance in the Global South.

FDI flows by multinational corporations (MNCs) are shaped by many pull and push factors. Pull factors include institutional quality, infrastructure development, and labor market efficiency, while push factors often stem from macroeconomic instability or political risk in source economies (Economou, 2019; Lipsey, 2004; Saad & Nor, 2014; Wang & Yan, 2022). Still, many economies in the Global South are having a hard time getting and keeping FDI, which is what drives economic growth (Arthur et al., 2024; Gupta et al., 2024; Nguyen, 2021; Rao et al., 2024). Despite increased focus on

regional integration and investment diplomacy, geographically disadvantaged and LLDCs such as Nepal continue to be underrepresented in global FDI flows.

Worldwide, the appeal of foreign direct investment is markedly contingent upon specific circumstances. Investment inflows in Asia are shaped by telecommunications infrastructure, geographic diversity, linguistic commonality, and liberalization reforms (Mishra & Jena, 2019). In contrast, in Africa, this is driven by market size, natural resource endowments, and growth potentials (Ajide & Ibrahim, 2022; Jančovič & Grešš, 2021). In advanced economies, technological innovation, digital infrastructure, and institutional credibility dominate the investment landscape (Blonigen & Piger, 2014; OECD, 2023). Investors in these settings prioritize knowledge spillovers, intellectual property protection, skilled labor access, and integration into global value chains rather than cost minimization. This cross-regional heterogeneity underscores that the geography of investment is contingent upon structural, institutional, and relational characteristics unique to each economy.

Despite South Asia's emergence as a major FDI destination, Nepal, a mountainous LLDC, continues to underperform. Strategically, the country lies between India and China, the two largest markets in the world. Political volatility, such as the decade-long armed conflict with the Nepal Communist Party (Maoist) from 1996 to 2006, constitutional changes, and the devastating 2015 earthquake, has caused investor uncertainty and slowed economic growth (Chaudhary & Paudel, 2024; Poudel, 2012). Furthermore, Nepal's overreliance on external injections, particularly from official development assistance and remittances, has increased fiscal sensitivity, as the domestic resource gap is widening due to a greater and rising share of consumption in gross domestic product (Chaudhary, 2017). FDI now accounts for less than 1% of total financing and has been consistently low for decades, which is below the expectations of policymakers and stakeholders.

Although a rich literature examines the determinants of FDI using gravity models and macroeconomic fundamentals, such as Blonigen and Piger (2014), Ajide and Ibrahim (2022), and Nguyen (2021), most studies concentrate on large emerging economies or coastal states where market size, infrastructure, and trade openness dominate investment behavior. Few studies provide a geoeconomic perspective on FDI

in landlocked developing countries, despite evidence that geography, distance-related transaction costs, and cultural linkages play decisive roles in shaping investment patterns in structurally constrained economies (Chaudhary & Paudel, 2024; UNCTAD, 2024a; UNDP, 2025). Existing work on South Asia largely focuses on India, Bangladesh, and Sri Lanka, leaving Nepal's persistent underperformance, despite its strategic location between India and China, poorly explained in the regional FDI literature. This gap is particularly notable because conventional cost-based explanations cannot fully account for why Nepal captures only 0.31% of regional inflows despite its proximity to two major markets. Motivated by this omission, this article integrates geographic distance, cultural proximity, macroeconomic stability, and factor endowments into a unified, gravity-consistent framework to explain the geoeconomic forces shaping Nepal's investment landscape in the Global South.

This paper has three key contributions. First, conceptually, it develops a dual-distance geoeconomic framework that combines geographic and cultural proximity to capture informational frictions and relational linkages in FDI decisions—extending the explanatory scope of traditional gravity models. Second, empirically, it employs a gravity-based bilateral panel model to examine the structural and geoeconomic factors influencing FDI in Nepal, which offers fresh perspectives on how macroeconomic stability and human capital influence investment flows in small, landlocked developing countries. Third, from a policy perspective, it offers practical recommendations for improving macroeconomic credibility, institutional integrity, economic diplomacy, and skills development to restore Nepal as a viable investment destination. By contextualizing Nepal's experience within wider regional discourse, this study additionally advances the developing body of Global South literature on geo-economic investment, particularly in LLDCs, such as Laos, Bhutan, Myanmar, Mongolia, Ethiopia, and Zambia.

The remainder of this article is organized as follows: Section 2 provides a comprehensive review of the theoretical and empirical literature on FDI determinants. Section 3 outlines the research methodology, including research design, model specification, data, and estimation techniques. Section 4 presents empirical results,

while Section 5 offers a critical discussion and interpretation of the findings. Section 6 concludes with targeted policy recommendations and directions for future research.

2. Literature Review

2.1 Theoretical Studies

Understanding how the geoeconomic forces shape FDI attractiveness requires a comprehensive theoretical framework that integrates classical and modern economic theories. Classical trade theories, such as those of Smith and Ricardo, emphasize labor productivity differences and opportunity costs as key drivers of trade (Todaro & Smith, 2020). Neoclassical models, particularly Heckscher-Ohlin's theories, expanded these concepts by emphasizing factor endowments in international markets—for instance, labor and capital. Based on these theories, various modern theories incorporate insights that influence FDI movements and trade patterns.

One of the most widely adopted approaches in international economics is the gravity model, originally introduced by Tinbergen (1962). It posits that the flow of trade or investment between two countries is directly proportional to their economic sizes and inversely proportional to the geographic distance between them. Formally, the bilateral FDI from country j to country i at time t, denoted as $FDI_{ij,t}$, is modeled as:

$$FDI_{ij,t} = G.\ GDP_{i,t}^{\alpha}.\ GDP_{j,t}^{\beta}.\ Distance_{ij}^{-\gamma}.\ e^{it}$$

Here, G is a constant of proportionality, α, β, and γ are elasticities to be estimated, and $e^{ij.t}$ represents the error term. Over time, the model has been expanded to incorporate additional factors, such as cultural, institutional, and financial distances, which significantly influence trade and investment decisions (Chakraborty et al., 2025; Dellis, 2024; Query & Thompson, 2024). To account for non-economic barriers such as language and cultural affinity. Common culture has a positive impact on FDI by lowering transaction costs, increasing mutual trust, improving communication, and facilitating smoother integration between the investing firm and the host country, thus increasing the likelihood and scale of foreign investment (Chakraborty et al., 2025).

Hence, the model can be extended by introducing a cultural proximity, Culture_{ij}, such that:

$$\text{FDI}_{ij,t} = \text{G.}\ \text{GDP}_{i,t}^{\alpha}.\ \text{GDP}_{j,t}^{\beta}.\ \text{Distance}_{ij}^{-\gamma}.\ \text{Culture}_{ij}{}^{\delta}.\ e^{it}$$

The inclusion of Culture_{ij}, where δ captures its marginal effect, helps explain variations in FDI beyond spatial distance and economic mass. By integrating trade friction and economic integration measures, the model provides a comprehensive view of global trade patterns and FDI flow.

Dunning's (2001) eclectic paradigm, commonly referred to as the OLI (Ownership, Location, and Internalization) model, provides a microeconomic perspective on firm-level investment choice. This model explains firms' internationalization decisions based on these three key advantages: Ownership advantages refer to proprietary technology, brand recognition, and firm-specific competencies that provide firms with a competitive edge. Location advantages include favorable business environments, resource availability, and market access, all of which influence firms' investment. Internalization advantages relate to the benefits of maintaining operations within the firm, rather than outsourcing to external entities. The net benefit (NB) of FDI can thus be formulated as

$$\text{NB} = \text{O} + \text{L} + \text{I} - \text{C}$$

where C represents the transaction and operational costs. When the sum of ownership, location, and internalization advantages exceeds the costs, firms are more likely to engage in FDI.

Multinational corporations engage in FDI for various strategic reasons, leading to distinct types of investment decisions. Horizontal FDI occurs when firms replicate their production in multiple countries to serve local markets, reduce transportation costs, and take advantage of proximity to consumers (Alfaro & Charlton, 2009; Cieślik, 2021). The decision criterion for horizontal FDI can be expressed as

$$\Pi_{\text{FDI}}^{\text{H}} > \Pi_{\text{Exporting}}$$

where Π^{H}_{FDI} and $\Pi_{Exporting}$ represent the profitability of FDI versus exports, respectively. By contrast, vertical FDI occurs when firms fragment their production chain by relocating different stages of production to locations with cost advantages (Lahiri et al., 2024; Li, 2021; Protsenko, 2004). This occurs if:

$$\mathbf{C}^{\text{Home}}_{\text{Production}} > \mathbf{C}^{\text{Foreign}}_{\text{Production}}$$

Where, $C_{Production}$ is the cost of production at home and foreign locations. Another motive for FDI is resource seeking, where firms invest abroad to access essential resources, such as raw materials and cheap labor (Markusen et al., 1996). The decision condition is as follows:

$$R_{Host} > R_{Home}$$

where R represents resource availability, and highlights how firms respond to cost differentials across global markets.

Expanding on traditional trade theories, the New Trade Theory incorporates economies of scale, market imperfections, and product differentiation to explain why firms engage in international trade and investments. Firms weigh the benefits of concentrating production to exploit economies of scale against those of locating production closer to key markets (Antràs, 2025; Baldwin & Freeman, 2022; Protsenko, 2004).

$$\text{Max } \Pi = \sum_{i=1}^{n} Q_i(P_i - C_i)$$

where Q_i is the quantity produced in country i, P_i is the price, and C_i represents production and transaction costs. This framework helps explain why firms expand internationally, either to serve foreign markets more effectively or reduce input costs by optimizing production locations.

Another critical theoretical perspective is the knowledge–capital model (Carr et al., 2001), which explains how firms make FDI decisions based on knowledge and skill-intensive operations. The model identifies three essential components: knowledge-generating activities that facilitate cost-effective production; knowledge-intensive processes that promote vertical integration; and knowledge-based services that enhance

multinational efficiency at minimal cost. In this model, trade and investment liberalization increase economic wealth and enhance FDI inflows. Firm productivity in this framework can be described as

$$\mathrm{A_i} = \mathrm{f(K_i, H_i, L_i)}$$

where A_i denotes firm productivity, K_i represents capital investment, H_i stands for human capital, and L_i is the labor input. The ability to leverage knowledge-based advantages across locations plays a vital role in shaping multinational expansion strategies.

Complementing these perspectives, the Firm-Specific Advantages (FSA) and Country-Specific Advantages (CSA) matrix, introduced by Rugman (2011), provides an integrated approach for understanding firms' foreign market entry decisions. Firm-specific advantages include technological innovation, marketing capabilities, and managerial expertise, whereas country-specific advantages include factors such as natural resource endowment, labor quality, institutional frameworks, and government policies. A firm is likely to engage in foreign market entry if:

$$\Phi(\mathrm{FSA, CSA}) - \mathrm{C_{Entry}} > 0$$

where C_{Entry} captures the costs associated with market entry, such as regulatory barriers, operational setup costs, and competitive pressures, and $\Phi(\mathrm{FSA, CSA})$ are functions representing the synergy between firm-specific and country-specific advantages. This conceptual framework aids in predicting internationalization patterns by incorporating firm-level competencies and macroeconomic conditions.

Together, these theoretical perspectives provide a robust foundation for understanding the dynamics of trade and FDI. The gravity model offers a macroeconomic framework linking trade to economic size and distance, whereas the eclectic paradigm (OLI model) explains firm-level investment choices. The New Trade Theory highlights the role of economies of scale in shaping trade and investment decisions, while the Knowledge-Capital Model and FSA-CSA Matrix offer additional perspectives on how firms optimize international expansion. Together, these theories contribute to a comprehensive understanding of the factors driving FDI and international trade in a globally interconnected economy.

2.2 Empirical Studies

Foreign direct investment has long been recognized as a critical channel for capital mobilization, technological upgrading, managerial learning, and productivity growth in host economies. Empirical literature consistently finds that FDI flows respond to a combination of structural, institutional, and geographical conditions. Market size, macroeconomic stability, governance quality, human-capital capability, infrastructure, and natural resource endowments remain among the most widely supported determinants across global studies.

In advanced economies, stable macroeconomic conditions, strong institutions, and technological leadership support long-term FDI inflows. North America and Western Europe entice investors with high capital stock, mature financial markets, and open legal systems (Lipsey, 2004; Mishra & Jena, 2019). Even in high-income regions, structural frictions persist: in Southern Europe, economic freedom encourages investment, but high labor costs and post-crisis vulnerabilities continue to deter it (Economou, 2019; Sabir et al., 2019).

By contrast, the Global South exhibits far greater volatility. African and Latin American economies often receive cyclical and resource-driven FDI, shaped by governance inefficiencies, corruption, infrastructure gaps, and policy uncertainty (Dunning, 2001; Gangi & Abdulrazak, 2012; Jančovič & Grešš, 2021; Yimer, 2023). Resource-seeking FDI in these regions frequently generates enclave effects rather than broad industrial development, especially where transparency and accountability are weak (Bothner, 2024; Chiyaba & Singleton, 2024). However, institutional reforms, special economic zones, digital governance, and transparency initiatives (for instance, Extractive Industries Transparency Initiative (EITI)) have been shown to improve the quality and resilience of inflows (Dosmaganbetov & Nanovsky, 2025; Lim, 2024; UNCTAD, 2024a).

Demand conditions and macroeconomic stability consistently emerge as high-priority factors for investors. Price stability, predictable fiscal regimes, and credible macro frameworks strengthen investor confidence, whereas inflation volatility, shallow

markets, and uncertain policies discourage long-term commitments (Bi et al., 2020; IFC, 2023; Leitão, 2023).

South Asia presents a mixed landscape. Studies emphasize market size, infrastructure, openness, and regional integration as key determinants (Srinivasan, 2011), while persistent challenges—political instability, inflationary pressures, and bureaucratic inefficiencies—continue to deter investors (Bailey, 2018). Unlike East Asia's strong state capacity and export-oriented industrialization, South Asia's fragmented reforms and institutional weaknesses constrain FDI competitiveness.

Within this regional context, Nepal remains an outlier. Despite legal reforms since 1992 and a strategic location between India and China, Nepal consistently attracts less FDI than its regional peers. Empirical work attributes this lack of investment to weak infrastructure, bureaucratic delays, and political instability (Basnyat, 2013; Bhujabal et al., 2024; Paudel, 2013). While these studies document Nepal's constraints, they seldom integrate geographic, cultural, and macroeconomic drivers into a unified empirical framework.

Despite considerable empirical research on the factors influencing FDI in both advanced and emerging economies, the literature provides limited understanding of how geoeconomic variables—such as distance-related coordination costs, cultural proximity, and human capital capacity—affect investment outcomes in small landlocked developing nations. Existing research on South Asia predominantly concentrates on major markets such as India, Bangladesh, and Sri Lanka, with limited analysis of the reasons behind Nepal's underperformance despite its strategic position between India and China. Furthermore, previous research on Nepal primarily focuses on institutional deficiencies or regulatory obstacles, yet fails to incorporate geographic, cultural, and macroeconomic factors within a comprehensive analytical framework. Consequently, the literature has yet to address the central puzzle of why Nepal captures only 0.31% of regional FDI inflows despite its locational advantages. This study fills that gap by applying a gravity-consistent bilateral model to examine the geoeconomic forces that condition Nepal's FDI performance within the Global South.

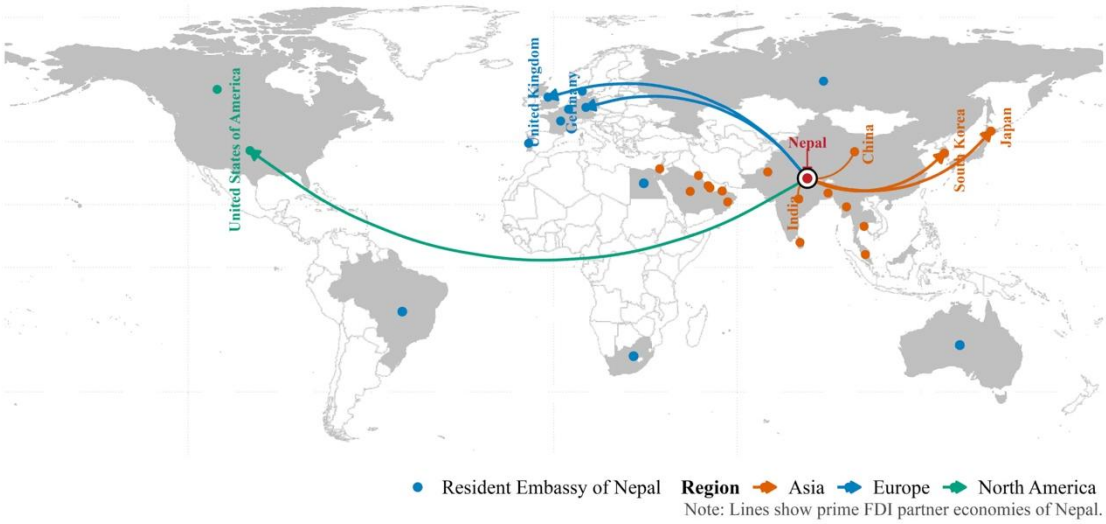
3. Research Methodology

3.1 Research Design

This article employs quantitative analytical framework to examine the FDI attractiveness through a geostrategic, structural, and economic lens in Nepal from the top seven FDI partners namely China, India, Germany, Japan, South Korea, United Kingdom, and the United States over the period from 2008 to 2018, which is almost the entirety of Nepal's transition to federalism. These seven countries are chosen because they made up more than 96% of Nepal's total commitments FDI in 2018 (Department of Industry, 2019; Figure 1). Other possible partners are not included in the sample because they are not consistently engaged in a regular way. In this time series sample, 2009 to 2010 was the period of global recession. Hence, we apply an additional estimation for a robustness check from 2010 to 2018. The global financial crisis of 2008–2009 hurt economies all across the world, although Nepal's economy remained strong in term of GDP growth, 6.1% in 2008 and 4.5% in 2009 (World Bank, 2024).

This study adopted the approach of Tinbergen's (1962) gravity model. The gravity model elaborates the relationship between two entities in economies that vary in geographical distance. We arrange the panel data based on cross-sectional stacking and run the regression. This study's regression models encompass random effects parameters. For the random effect models, we use the Swamy-Arora technique, which gives us accurate and unbiased estimates of variance components in imbalanced panel data structures. In our study, there are 76 observations in total (Germany's data is unavailable in 2016 (Figure 2)).

Figure 1: Nepal's Key FDI partner countries



Database: Department of Industry (2019); Ministry of Foreign Affairs, Government of Nepal (https://mofa.gov.np/).

Using the REM, we examine the determinants of FDI attractiveness in Nepal. Since our panel data includes both time-variant and time-invariant variables, these models provide robust estimation. We can use panel ordinary least squares (OLS) regression because panel unit root tests, such as the Phillips-Perron (PP) method, show that all variables are stationary at level I(0) (Table A2).

3.2 The Model, Variables, and Data Sources

This study employs Tinbergen's (1962) gravity model, which is widely used in trade and FDI flow analysis. Tinbergen's gravity model and the surveyed literature inspired the choice of explanatory variables. Hence, the baseline model is as follows:

$$FDI_{ij,t} = f\{\text{Cultural proximity}_{ij}, \text{Geographical distance}_{ij}, \text{Price level}_{ij,t}, \text{Infrastructure}_{ij,t}\} \quad (1)$$

Where $FDI_{ij,t}$ (dependent variable) refers to the approved FDI from the jth origin countries (China, India, Germany, Japan, South Korea, the United Kingdom, and the United States) to the host country, i (Nepal) over, t= 2008 to 2018, time series sample. $\text{Cultural proximity}_{ij}$, is a dummy variable (=1 for the presence of a common culture, otherwise zero). Cultural proximity is the closeness in cultural values, beliefs, and

practices between two countries. This closeness might affect judgments about commerce and investment between countries (Bi et al., 2020; IFC, 2023; Leitão, 2023). Hence, only India and Nepal have a lot in common when it comes to religion (mostly Hinduism), family and social systems, language (Hindi and Nepali), festivals, and family-to-family ties.

$\text{Geographical distance}_{ij}$ measures the topographical distance from the host country to its country of origin. These two variables are the only time-invariant variables. Due to the presence of these two, the fixed effect model is omitted, and the applied random effect model is the best fit and provides more robust estimates (Ly et al., 2018). The random effect model (REM) allows for the inclusion of both time-varying and time-invariant variables.

Furthermore, here we apply it to the preliminary results of correlation. Some variables, in Table A3, show near-collinearity: |r|=0.5–0.92 between several regressors—such as geographical distance with education (0.8715), with labor force (−0.9232), and labor force with natural-resource rents (0.7997). Near-collinearity inflates standard errors, destabilizes coefficients and signs, and makes partial effects difficult to identify, especially in small dyad panels.

Hence, we have specified further models by using other variables prudently, such as incorporating the labor force in equation 2, natural resource rent in equation 3, and education in equation 4.

$$\text{FDI}_{ij,t} = f\{\text{Cultural proximity}_{ij}, \text{Price level}_{ij,t}, \text{Labor force}_{ij,t}\} \quad (\mathbf{2})$$

We mixed the time-variant and time-invariant variables in our study. The goals of the analysis, econometric techniques, and empirical evidence guide the decision to add explanatory variables. It is important to strike a balance between model complexity and effectiveness, ensuring that the model is both interpretable and statistically sound.

$$\text{FDI}_{ij,t} = f\{\text{Cultural proximity}_{ij}, \text{Price level}_{ij,t}, \text{Infrastructure}_{ij,t}, \text{Natural resources rents}_{ij,t}\} \quad (\mathbf{3})$$

$\text{Labor force}_{ij,t}$ is the active labor force (> 15 age) available in the host economy relative to the origin country. $\text{Price level}_{ij,t}$ denotes the relative price level of the host country

with respect to the home country. Natural resources $\text{rents}_{ij,t}$ is the difference between the total cost of production and the value of natural resource production at world prices. They are commonly given as a percentage of GDP and include rents from coal, oil, gas, minerals, and forests (World Bank, 2024). Similarly, $\text{Infrastructure}_{ij,t}$ represents the relative infrastructure development facilities available in the host country to the jth origin country. Gross fixed capital formation is used as a proxy for the availability of infrastructure facilities in the country.

$$\text{FDI}_{ij,t} = f\{\text{Infrastructure}_{ij,t}, \text{Education}_{ij,t}\} \quad (4)$$

$\text{Education}_{ij}^{t}$ is the relative prevalence of adult (≥ 15 years) literacy rate. This is taken as a proxy for skilled manpower or human resource availability.

Furthermore, for a robustness check, we used time series skip and fit 2010 to 2018 by removing the years 2009 and 2010 (the period of global recession). Therefore, another four models are added for the robustness check, named 1.1, 2.1, 3.1, and 4.1 (demonstrated in Table 1).

The first-order partial derivatives of the estimated functions are determined based on theoretical frameworks and empirical literature. A detailed summary of all variables, including definitions, units of measurement, data sources, expected sign, and descriptive analysis, is provided in Table A1. Except for the time-invariant variables (topographical and Cultural proximity), all other variables are measured in relative term to Nepal. This means that the closer Nepal's value is to that of the origin country, the smaller the gap, and thus the smaller the resulting ratio. In contrast, the lower Nepal's value is compared to the origin country, the higher the relative value.

In this context, a negative coefficient for a relative variable in the FDI attractiveness model indicates that as the relative value increases—meaning the origin country's performance becomes larger compared to Nepal's—FDI attractiveness declines. In other words, a widening gap between Nepal and the origin country in that variable reduces Nepal's investment appeal, whereas a narrowing gap enhances it. Formally, if the relative variable is expressed as:

$$FDI_{ijt} = \alpha + \beta \left(\frac{X_{jt}^{\{\text{Origin Country}\}}}{X_{it}^{\{\text{Nepal}\}}} \right) + \varepsilon_{it}$$

Interpretation: with $\beta < 0$, an increase in the ratio (the origin country's value becoming larger relative to Nepal's) decreases FDI_{ijt}, whereas a decrease in the ratio increases FDI_{ijt}.

3.3 Econometrics

Given the longitudinal dataset structure, which includes both cross-sectional ($\mathcal{N} = 7$) and time-series dimensions ($\mathbb{T} = 11$ years), we use a Random Effects Model (REM) to account for unobserved variation between units. The REM is especially appropriate in this case since it assumes that individual-specific effects are randomly distributed and uncorrelated with the explanatory variables, allowing for the inclusion of time-invariant regressors. To produce efficient and consistent parameter estimates, the model is estimated with Estimated Generalized Least Squares (EGLS), which corrects for heteroskedasticity and intra-unit correlation in the error structure (Baltagi, 2005; Greene, 2012).

$$y_{it} = \alpha + \mathbf{X}_{it}\beta + u_i + \varepsilon_{it}, \quad i = 1, \ldots, \mathcal{N}; \; t = 1, \ldots, \mathbb{T}$$

Here, y_{it} denotes approved FDI from country i at time t; X_{it} is a vector of explanatory variables; β is the parameter vector; u_i represents unobserved country-specific heterogeneity; and ε_{it} is the idiosyncratic error component.

We assume the following structure:

$$u_i \sim \mathcal{N}(0, \sigma_u^2), \quad \varepsilon_{it} \sim \mathcal{N}(0, \sigma_\varepsilon^2)$$

$$\eta_{it} = u_i + \varepsilon_{it}, \quad \text{Var}(\eta_{it}) = \sigma_u^2 + \sigma_\varepsilon^2$$

with independence between u_i and ε_{it}, and orthogonality with regressors X_{it}. This ensures consistency and efficiency of the REM estimator (Hausman, 1978; Greene, 2012).

The variance–covariance structure of the composite error is expressed as:

$$\boldsymbol{\Omega} = \sigma_{\varepsilon}^{2} I_{\mathcal{N}\mathbb{T}} + \sigma_{u}^{2}(I_{\mathcal{N}} \otimes J_{\mathbb{T}})$$

where $I_{\mathcal{N}\mathbb{T}}$ is an identity matrix of order $\mathcal{N}\mathbb{T}$, $I_{\mathcal{N}}$ is an identity matrix of dimension $\mathcal{N}$, $J_{\mathbb{T}}$ is a $\mathbb{T}\times\mathbb{T}$ matrix of ones, and $\otimes$ denotes the Kronecker product (Greene, 2012).

Estimation is carried out using feasible *EGLS.* The REM employs the following quasi-demeaning transformation:

$$\tilde{y}_{it} = y_{it} - \theta\,\bar{y}_{i} + (1-\theta)\bar{y}, \qquad \tilde{\mathbf{X}}_{it} = \mathbf{X}_{it} - \theta\,\bar{\mathbf{X}}_{i} + (1-\theta)\bar{\mathbf{X}}$$

with the transformation parameter θ defined as:

$$\theta = 1 - \left(\frac{\sigma_{\varepsilon}^{2}}{(\mathbb{T}\sigma_{u}^{2} + \sigma_{\varepsilon}^{2})}\right)^{\frac{1}{2}}$$

The REM estimator is then:

$$\hat{\beta}_{RE} = \left(\tilde{\mathbf{X}}'\tilde{\mathbf{X}}\right)^{-1}\tilde{\mathbf{X}}'\tilde{y}$$

Variance components σ_{u}^{2}, and σ_{ε}^{2} are estimated using the Swamy–Arora procedure, which provides consistent estimates for unbalanced panel data (Baltagi, 2005).

The choice of REM is particularly suitable for this analysis. First, time-invariant variables such as geographical distance and cultural proximity would be dropped in a fixed effects framework. Second, the REM provides greater efficiency under the assumption of no correlation between regressors and unobserved heterogeneity (Gujarati et al., 2012; Hausman, 1978; Wooldridge, 2015). Third, it is consistent with the gravity model of FDI, which explicitly incorporates both cross-sectional heterogeneity and time variation (Egger, 2005).

All variables are tested for stationarity using the Phillips–Perron (PP) panel unit root test, which confirmed that they are integrated of order zero, I(0). This validates estimation in levels without spurious regression concerns. In sum, the REM framework allows retention of both time-varying and time-invariant regressors, ensuring efficient

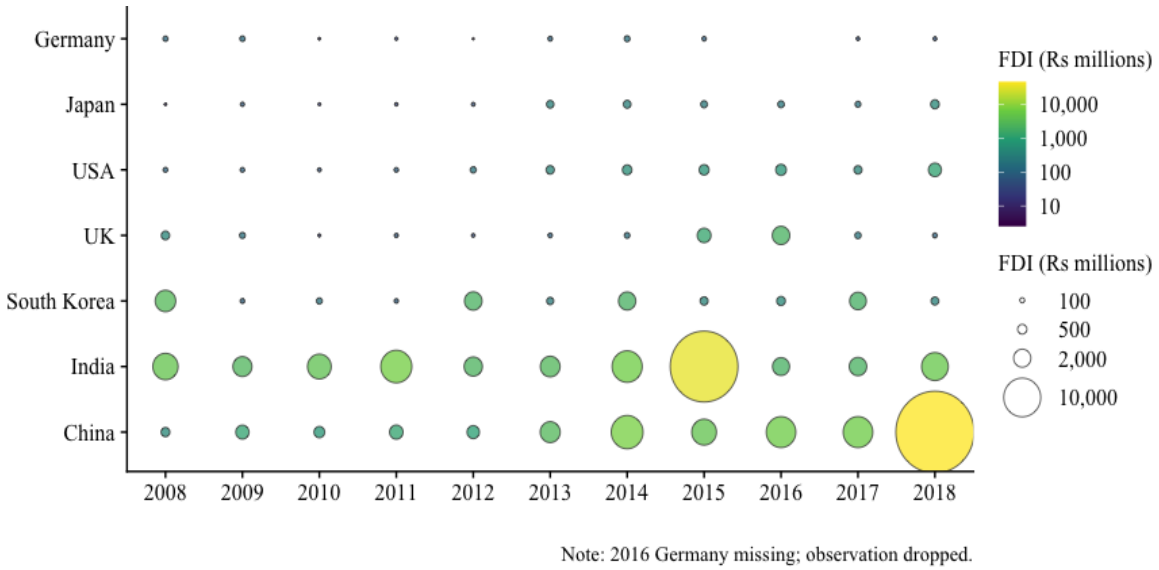
and unbiased inference on the structural and geoeconomic determinants of FDI in Nepal.

4. Results

4.1 Descriptive Analysis

Figure 2 depicts the distribution of FDI approvals to Nepal from major source countries between 2008 and 2018. The bubble sizes and colors represent the magnitude of commitments, with larger and brighter bubbles indicating greater commitments. The descriptive pattern indicates that India and China have dominated Nepal's FDI landscape, with India making consistent contributions throughout the period, while China's role grows significantly in later years, peaking in 2018. In contrast, contributions from Germany, Japan, the United States, and the United Kingdom remain small and stable, with only minor fluctuations. South Korea has experienced moderate and consistent growth in approval of foreign direct investment over the years. Notably, the years 2014 and 2018 were marked by unusually high levels of investment approval, particularly in India and China. Aside from a missing observation for Germany in 2016, the figure clearly shows that Nepal's FDI is heavily concentrated in its neighboring Asian economies, while commitments from Western economies are limited.

Figure 2: FDI variations across the panel



Note: 2016 Germany missing; observation dropped.

Source: Department of Industry (2019), Government of Nepal

Table A1, Appendix A provides additional information on the distribution of the variables, emphasizing variation dynamics. The mean FDI value is 2.58, with a standard deviation of 0.85, indicating that investment volumes vary moderately across partner countries and years. Natural resource rent has a low mean of 1.37 but a high standard deviation of 1.89, with values ranging from 0.01 to 8.98, indicating that the relative contribution of natural resources to GDP varies significantly over time and across economies. In contrast, the consumer price index is more stable, with a mean of 0.87 and a narrow dispersion of 0.17, indicating low inflationary volatility. Infrastructure, as measured by gross fixed capital formation, is also relatively stable (mean 1.23, standard deviation 0.04), indicating gradual but steady improvements.

The relative labor force has the highest level of heterogeneity, with an average of 31.27, a large standard deviation of 37.57, and an exceptionally wide range of 3.6 to 144, reflecting the diversity of partner economies and the size of their labor markets. Education, measured by relative adult literacy rate, follows a more moderate pattern, averaging 2.78 with a standard deviation of 0.86 and ranging from 1.32 to 4.14, highlighting Nepal's relatively low but gradually improving human capital base.

Overall, Nepal's foreign direct investment is skewed towards the regional partners, primarily India and China. This concentration raises concerns about Nepal's reliance on neighboring economies and its vulnerability to regional political or economic changes. Natural resource rents and labor force size vary by source country, whereas macroeconomic indicators such as price levels and infrastructure remain relatively stable. However, modest education levels indicate structural challenges in human capital development, which may limit Nepal's ability to diversify and maintain the magnitude of FDI.

4.2 Quantitative Results

Table 1 shows the estimated coefficients from random-effects regressions examining the factors influencing FDI attractiveness in Nepal. Column (1) depicts the baseline gravity model, which captures the three main structural drivers of FDI flows: cultural proximity, geographical distance, and macroeconomic factors. Columns (2) to (4) gradually broaden the specification to include labor force, natural resource rents,

and education, while Columns (1.1) to (4.1) provide corresponding robustness checks using various model configurations.

The baseline specification in Column (1) corresponds closely with the theoretical expectations of gravity-based FDI frameworks. Cultural proximity exhibits a positive and highly significant coefficient (0.74, $p < 0.01$), signifying that shared cultural, linguistic, and historical ties substantially bolster bilateral FDI flows to Nepal. This result underscores the role of socio-cultural networks in lowering informational asymmetries and transaction frictions. In contrast, geographical distance is negatively associated and statistically significant (-0.70, $p < 0.01$), aligning with the traditional gravity model's expectation that greater geographical distance increases coordination and transportation costs, thus deterring cross-border interest in investment.

Table 1: Determinants of FDI attractiveness

Regressors	FDI				Robustness Check			
	(1)	(2)	(3)	(4)	(1.1)	(2.1)	(3.1)	(4.1)
Cultural proximity	0.74***	0.878***	1.064***		0.57**	0.80***	0.77**	
	(0.246)	(0.19)	(0.28)		(0.29)	(0.22)	(0.34)	
Geographical distance	-0.70***				-0.725***			
	(0.113)				(0.133)			
Price level	-1.67***	-1.33***	-1.82***		-1.226*	-1.28**	-1.51*	
	(0.411)	(0.54)	(0.63)		(0.52)	(0.63)	(0.76)	
Infrastructure	2.11		3.37	1.23	1.78		2.34	1.48
	(1.79)		(2.11)	(1.40)	(2.10)		(2.44)	(1.60)
Labor Force		0.0125***				0.013***		
		(0.0017)				(0.002)		
Natural resources rent			0.167***				0.23***	
			(0.05)				(0.066)	
Education				-0.809***				-0.82***
				(0.06)				(0.07)
Intercept	3.68	3.21***	-0.38	3.32**	3.79	3.15**	0.57	3.02
	(2.29)	(0.48)	(2.54)	(1.67)	(2.73)	(0.54)	(2.87)	(1.92)
Number of observations	*76*	*76*	*76*		*62*	*62*	*62*	*62*
R-squared	*0.60*	*0.59*	*0.47*	*0.68*	*0.58*	*0.58*	*0.47*	*0.66*
Time trend	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

Note: ***<0.001, **<0.05, and *<0.1 significance level. The values in parentheses are the standard error.

Furthermore, the coefficient of relative price is negative and significant (-1.67, $p < 0.01$), indicating a relative higher domestic price is associated with higher FDI commitments to Nepal. When the specification widens from Column 1 to 3, the coefficient tendencies remain unchanged. The model constant (3.72) is positive but insignificant. The model yields an R^2 of 0.60, indicating that the included regressors explain 60% of the variation in FDI inflows. Although R^2 alone does not validate the specification, the explanatory power is consistent with related FDI gravity models and remains stable across alternative estimations.

The extended specifications refine the model by introducing three relative variables sequentially. The addition of the relative labor force variable (0.0125, $p < 0.01$) in Column (2) enhances the model's explanatory structure and decreases the risk of multicollinearity. There is a strong positive relationship between the relative labor force and FDI attractiveness.

Adding relative natural resource rents (0.167, $p < 0.01$) to Column (3) causes additional model adjustment. The coefficient is still positive and significant, indicating that this variable contributes more explanatory power to the specification. In Column (4), there is a significant negative effect of relative education (-0.809, $p < 0.01$) when examining human capital effects separately on FDI attractiveness.

These three relative variables maintain their sign and level of significance throughout the extended and robust estimations, demonstrating a consistent statistical contribution.

5. Discussions

The baseline estimations confirm the gravity model prediction: geographical distance reduces FDI into Nepal (−0.70), meaning a 1% increase in distance lowers FDI by about 0.70%. It is consistent with the gravity theory, where distance increases transaction and information costs (Tinbergen, 1962). This result highlights Nepal's structural reliance on geographically close partners such as India and China. It is also confirmed by the trend analysis in Figure 2, which shows that the majority of inflows originate from neighboring or nearby economies.

The result validates the theoretical expectation and carries significant policy implications. Nepal's reliance on geographically adjacent partners renders it susceptible to regional economic and political dynamics, encompassing bilateral relations, trade agreements, and geopolitical tensions. Although proximity-driven inflows may diminish short-term transaction expenses, they can simultaneously constrain diversification and resilience over the long term. For instance, overdependence on a limited number of neighbors may heighten susceptibility to regional disturbances, including border conflicts, policy alterations, or currency volatility.

According to comparative studies of developing economies, distance effects may diminish as countries improve connectivity, trade logistics, and digital infrastructure (Badada et al., 2023; Tsaurai, 2025). Nepal could mitigate distance-related disadvantages by investing in transport corridors, cross-border infrastructure, and digital trade platforms to attract investors from far away. Such measures may help reduce information asymmetries and transaction costs, expanding the country's FDI base beyond its immediate surroundings. Hence, the negative distance elasticity not only supports the core gravity model hypothesis but also highlights Nepal's current structural reliance on India and China. Addressing this geographical constraint through connectivity and policy reforms is critical if Nepal hopes to diversify and sustain FDI inflows in the future.

Furthermore, cultural closeness exerts a strong positive effect on Nepal’s ability to attract FDI. In the baseline estimation, the coefficient of 0.74 indicates that, when a country shares a common cultural background with Nepal, FDI commitments are higher by an average of 0.74 units, compared to culturally distant countries. This effect can be calculated as $(e^{0.74}-1) \times 100=110\%$, meaning that FDI commitments are about 110% higher in the presence of cultural proximity. This value is broadly consistent with findings from cross-country gravity studies, where cultural or linguistic similarity has been shown to increase (Chakraborty et al., 2025).

Strong cultural and linguistic affinities with South Asian neighbors, particularly India, provide Nepal with a structural advantage in attracting FDI, as cultural proximity fosters trust, reduces informational frictions, and facilitates cross-border cooperation. However, excessive dependence on culturally close economies can also limit

diversification and heighten Nepal's exposure to regionally concentrated shocks. Although Nepal maintains a reasonably wide network of bilateral diplomatic missions across the world (Figure 1), its FDI portfolio remains disproportionately anchored in its immediate cultural and geographic neighborhood (Figure 2). Recent research indicates that culturally distant countries can still be integrated into FDI networks if host countries actively promote cross-cultural business environments, improve institutional quality, and lower administrative barriers (Chakraborty et al., 2025). For Nepal, the evidence suggests that, while leveraging cultural ties with nearby partners is still important, expanding economic diplomacy, providing cultural facilitation services, and promoting English as a business language could help attract investors from far away. In this way, Nepal can use cultural proximity as a foundation rather than a constraint, broadening its investment base to promote resilience and long-term growth.

The baseline models show strongly negative coefficients (−1.67) of price level, indicating that a 1% increase in relative price level decreases FDI commitments by 1.67%. When interpreted in relative terms, a negative coefficient indicates that as the relative price value increases—meaning Nepal's price level falls in comparison to the origin country—FDI attractiveness decreases. In other words, as the price gap widens, it indicates weaker market development and limited consumer purchasing power or less market stability, discouraging attractiveness in the host country. Conversely, when Nepal's relative value rises (closes the gap with partner countries), it increases attractiveness by implying a more demand-oriented market, which is beneficial to investors. The average value of the relative price is 0.87 shows that Nepal's price level is 13% more than the average price level of other partner countries, showing an attractive FDI environment.

Building on these findings, the policy message is clear: 'demand- and capability-led' rather than 'compete-on-cheapness.' In a gravity-model setting, distance dampens FDI while cultural proximity raises it, directing policy toward economic diplomacy to narrow informational or cultural frictions and expand partner reach (Bi et al., 2020; IFC, 2023; Leitão, 2023). This viewpoint emphasizes that perceived market potential, institutional maturity, and relational proximity have a greater influence on FDI flows

than cost advantages. It also supports the view that long-term capability and demand-side factors, rather than short-term price competitiveness, are critical for attracting FDI.

The positive coefficient of relative labor force, 0.0125, indicates that FDI increases when the ratio or relative value of the price level rises, for instance, when Nepal has more labor-scarce than the origin country; conversely, an expansion of Nepal's labor force relative to the origin country lowers the ratio and is associated with lower FDI commitments. In elasticity terms, a 10% increase in the ratio predicts a ≈0.125 increase in FDI commitments. However, a 10% increase in Nepal's labor force (holding the origin constant) lowers the ratio by about 10% and predicts a ≈0.125 decline in FDI.

This coding-consistent reading is consistent with horizontal FDI and proximity-concentration logic—firms invest abroad primarily to meet demand in markets similar to their home base rather than to exploit abundant unskilled labor (Cieślik, 2021). The implication is that simply increasing headcount does not increase FDI unless it is accompanied by effective demand and capability improvements (productivity, skill quality, and institutional credibility) that horizontal investors value. Evidence on the benefits of FDI and location choices emphasizes that complementarities, financial depth, skills that match industry needs, and institutional quality, mediate both attraction and spillovers, reinforcing a demand- and capability-led approach rather than a 'compete-on-cheap-labor' strategy (Alfaro, 2016; Alfaro & Charlton, 2009).

The positive coefficient of relative natural-resource rents (0.167) indicates that FDI commitments increase when the share of partners' resource rents to Nepal's resource rents rises—that is, Nepal is gaining a relatively smaller share of resource profit in national income than the origin countries. Low natural resource rent (% of GDP) means that natural resources generate little economic surplus or resource-led revenue for the country, either because extraction is low, extraction is costly, or the market value of the resources is low. Conversely, when Nepal's own resource rents is relatively lower (average value is 1.37 (Appendix A, Table A1)) relative to its partners, the ratio increases and FDI attraction of Nepal is also goes higher. In elasticity terms, a 10% increase in the ratio predicts roughly a ≈ 0.17% rise in FDI commitments, whereas

a 10% increase in Nepal's resource rents (holding partner rents constant) lowers the ratio by about 10% and implies a ≈ 0.17% reduction in FDI attractiveness.

In the context of the actual figure, Nepal is endowed with abundant natural resources—its extensive forest cover, water resources, and hydropower potential are among the highest in South Asia—but these resources contribute only marginally to GDP growth, reflecting inadequate investment from both the public and private sectors (World Bank, 2018). In this direction, it appears natural resource rent attracts FDI from abroad. From an OLI perspective, the result suggests that transforming potential L-advantages (resources) into actual FDI (Dunning, 2001; Markusen et al., 1996). In Nepal's case, resource endowments may instead act as a strategic advantage, offering investors secure access to raw materials, reducing input costs, and creating opportunities for universality. This aligns with emerging empirical evidence that resource-rich developing countries with favorable investment conditions can leverage natural assets as a catalyst for attracting foreign capital rather than as a hindrance.

Recent many country studies show that the quality of institutions influences FDI in resource-rich economies, with stronger institutions associated with higher inflows and weak governance directing investment toward enclave and rent-seeking activities rather than fostering broad-based commitments (Bothner, 2024; Chiyaba & Singleton, 2024). Investors regard joining the EITI as a sign of credibility and associate it with a significant increase in FDI. The evidence indicates that the importance of rules, transparency, and the credibility of dispute resolution surpasses the amount of resource rent (Dosmaganbetov & Nanovsky, 2025; Lim, 2024). Furthermore, global policy summaries emphasize the importance of making it easier for investors to invest in resource-linked projects and their interconnections by implementing clear rules, streamlined procedures, and government transparency—digital governance (UNCTAD, 2024b).

The relative-education variable has negative and highly significant estimates (-0.809), indicating that a 10% increase predicts 8.09% decline in FDI. However, a 10% increase in Nepal's education (holding origins fixed) lowers the ratio by roughly 10% and is associated with 8.09% increase in FDI. This finding is consistent with horizontal market-seeking FDI under the proximity-concentration and knowledge-capital

frameworks, which predict that multinationals value comparable or superior human capital in host countries because it reduces coordination costs and allows for more productive, skill-intensive operations (Alfaro & Charlton, 2009). It also supports evidence that human capital is a strong predictor of FDI once core dyadic frictions are addressed (Blonigen & Piger, 2014; Carr et al., 2001). For policy interpretation, the findings support a demand- and capability-led view: FDI attraction in this sample is more strongly associated with closing skill gaps and strengthening effective human capital than with competing solely on factor-cost differences, echoing evidence that FDI gains are greatest where skills and institutional quality complement multinational activity (Alfaro, 2016).

6. Conclusion and Policy Implications

6.1 Conclusion

This study identifies the key geoeconomic determinants shaping Nepal's ability to attract foreign direct investment and examines the structural and economic conditions underpinning these dynamics. By doing so, it provides a clearer understanding of Nepal's investment climate, highlighting both emerging opportunities and persistent constraints that require policy attention. Situated within the broader literature on international investment flows in the Global South, the analysis employs a bilateral panel regression for the period 2008–2018, focusing on Nepal's seven most active FDI partners during the post-monarchy economic restructuring phase.

The findings reveal a coherent set of geoeconomic and structural forces influencing Nepal's investment performance. Cultural proximity is associated with stronger investment commitments, whereas geographic distance reduces FDI through higher coordination, information, and adaptation costs—consistent with gravity-model expectations. The strong negative association between relative price dynamics and FDI underscores that investors place greater weight on macroeconomic stability and demand orientation than on narrow cost-based advantages.

Labor-market indicators display asymmetric relevance. While scale effects are present, they remain secondary. The weak but precise effect of labor force size contrasts

with the strongly negative and significant relative education variable, supporting a capability-driven interpretation in which sustained investor engagement depends on the quality, relevance, and technological complementarity of human capital. Nepal's limited reliance on natural resource rents contributes to a relatively stable foundation for investment; however, the modest positive relationship between resource rents and FDI indicates ongoing governance and regulatory weaknesses in resource management.

Taken together, the results suggest that Nepal's FDI attractiveness is shaped primarily by demand conditions, macroeconomic credibility, and capability formation rather than by cost advantages or natural endowments alone. The central pillars for fostering sustained foreign investment emerge as stable price signals, strong human-capital foundations, and both cultural and geographic connectivity.

6.2 Key Policy Implications

The results underscore four policy priorities for strengthening Nepal's geoeconomic competitiveness. First, macroeconomic stability must remain the central policy anchor. Predictable inflation, credible fiscal rules, and consistent monetary signaling reduce uncertainty and reinforce the strong sensitivity of FDI to the relative-price volatility identified in the analysis. Second, Nepal should use economic diplomacy to reduce cultural and informational barriers, especially in markets where cultural closeness increases investment flows. Measures such as standards recognition, improved dispute-resolution mechanisms, and targeted outreach can meaningfully reduce relational barriers. Third, human-capital capability—not labor abundance—should guide investment strategy. Upgrading technical and vocational systems, deepening university–industry linkages, and developing managerial and engineering skills are essential for attracting horizontal FDI, consistent with the study's findings on skill-driven investment. Fourth, infrastructure and resource policies must shift from expanding physical volume to ensuring reliability and governance. Improvements in logistics performance, power stability, and digital connectivity can partially offset the higher coordination and distance costs inherent to landlocked economies, while transparent resource governance is more valuable for credibility than resource endowment itself. Such an approach would enable Nepal to overcome structural

constraints associated with landlockedness and reposition itself as a competitive investment destination within the Global South.

6.3. Future Research Scope

Future research could extend these findings by incorporating changes in Nepal's investment environment, especially in light of evolving geopolitical dynamics, regional trade agreements, and global economic disruptions. Comparative analyses with other landlocked developing countries would offer more profound insights into shared structural constraints and potential competitive advantages. Micro-level firm surveys could also add to the macroeconomic view by showing what investors expect, how they see risk, and what operational problems they face. In addition, examining sector-specific FDI patterns—including emerging areas such as renewable energy, climate change, digital services, and high-value manufacturing—and assessing the long-term impacts of infrastructure-led development strategies would generate more granular evidence to guide policymakers and international investors engaging with Nepal's evolving economic landscape.

Data Availability Statement

The data supporting the findings of this study can be obtained upon request from the corresponding author. Access will be provided based on reasonable requests and in compliance with relevant data-sharing policies.

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Competing Interest

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Appendix A

Table A1: Descriptive and summary statistics of the variables

Variable (Symbol)	Definition	Source	Expected sign #	**Mean**	**Std. dev.**	**Min.**	**Max.**
FDI_{ij}	Log [commitment FDI to i (Nepal) by j^{th} countries]	Department of Industry, Nepal		2.58	0.85	0.39	4.67
Cultural proximity $_{ij}$	For India=1 (for common culture), otherwise 0.	Dummy formation	+				
Geographical distance $_{ij}$	Log (distance in kilometers from i to j)	Electronic mapping system	−	3.37	0.71	2.2	4.08
Natural resources rents $_{ij}$	$\frac{\text{Log[Natural resources rents (\% of GDP}_{jt})]}{\text{Log[Natural resources rents (\% of GDP}_{it})]}$	The World Bank	− or +	1.37	1.89	0.01	8.98
Price level $_{ij,t}$	$\frac{\text{Log(Consumer price index}_{jt})}{\text{Log(Consumer price index}_{it})}$	The World Bank	$+ \; or \; -$	0.87	0.17	0.59	1.24
Infrastructure $_{ij,t}$	$\frac{\text{Log(Gross fixed capital formation}_{jt})}{\text{Log(Gross fixed capital formation}_{it})}$	The World Bank	−	1.23	0.04	1.16	1.32
Labor force$_{ij,t}$	$\frac{\text{Log[total labor force}(\geq 15 \text{ age})_{jt}]}{\text{Log[total labor force }(\geq 15 \text{ age})_{it}]}$	The World Bank	−	31.27	37.57	3.6	144
Education $_{ij,t}$	$\frac{\text{Log[Literacy rate, adult } \geq 15 \; _{jt})]}{\text{Log[Literacy rate, adult } \geq 15 \; _{it})}$	The World Bank	−	2.78	0.86	1.32	4.14

Note: t= 2008 –2018, and # sign is expected based on theories and a survey of empirical studies.

Table A2: Summary of unit root test results

Variable	Level			
	Levin, Lin & Chu	Im, Pesaran & Shin	ADF	PP
Natural resources rents	6.30	-0.89	17.55	70.64***
Price level	-1.91**	-0.97	17.86	60.75***
Education	3.90	-1.02	17.91	85.21***
Infrastructure	-8.42***	-4.01***	44.33***	31.26***
Labor force	-2.36***	-1.36*	21.01*	36.85***
FDI	-1.52*	-3.27***	38.61***	112.48***

*, **, *** are 10%, 5%, and 1% probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Table A3: Correlation matrix

	Cultural proximity	Geographical Distance	Education	Natural resource rents	Price Level	Infrastructure	Labor Force
Cultural proximity	1.0						
Geographical Distance	-0.5494	1.0					
Education	-0.6503	*0.8715*	1.0				
Natural resource rents	0.5212	-0.7729	-0.6778	1.0			
Price Level	0.2553	-0.1773	0.1751	0.3357	1.0		
Infrastructure	-0.2447	-0.1857	0.0448	0.2694	0.3257	1.0	
Labor Force	0.3728	*-0.9232*	-0.7871	0.79971	0.16928	0.5	1.0