



Mediating Effects of Governance in the Relationship between FDI and Innovation in Developing Economies

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Abstract: While most studies in the available body of literature had focused on the direct relationship between FDI and innovation, this paper goes a step further to analyse whether governance in developing economies mediates this relationship. A 25 year cross-sectional time-series data was collected from the World Bank Development Indicators and the Worldwide Governance Indicators (2019) databases. This data spans the years 1995 to 2019. This panel dataset was estimated using a system GMM. The results of the study show that regulatory quality and voice and accountability are the two governance indicators that mediate the relationship between FDI and innovations. The results imply that, in the absence of high governance quality, the traditional policy prescription—such as increasing government spending on research and development (R&D), and education—may not be adequate to promote FDI's innovation spillovers. The findings suggest that governments in developing nations should work to improve the voice and accountability and regulatory quality indicators by ensuring that citizens participate in decision-making to promote the flow of knowledge and information that fosters innovation. This will help to strengthen the influence of FDI on domestic innovations. In addition, the governments should foster an environment that is welcoming to foreign investment and implement the appropriate regulatory reforms, such as those that strengthen competition protection, property rights protection, and transparency in the operations of the organisations' implementing policies.

Keywords: governance and FDI, governance, innovation, mediating effect of governance, spillover effect, innovation spillover

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INTRODUCTION

FDI assisted development strategies have been employed as a stimulant for economic development in several countries (Lall & Narula, 2004). Tax and non-tax incentives are used in this policy to entice foreign capital to invest in local economies. While global capital flows have increased significantly over time, the battle for FDI is becoming more intense. A considerable rise in global FDI flows has a variety of consequences for recipient nations, including technical spillovers, human capital development, access to international markets, and increased competitiveness (Alakbarov, 2016). FDI spillovers and the effects of FDI inflows on local economies have been investigated by a number of scholars.

The literature on FDI and productivity agrees that inward FDI boosts productivity in the host country. Some academics advise that in addition to studying the influence of FDI on productivity, researchers look into the impact of FDI on innovation. Innovation, according to Gracia et al. (2010), is a stronger measure of FDI's benefits on business results and economic growth. Productivity growth does not imply innovation. Improved innovation, on the other hand, will result in increased productivity.

Economic progress requires technological advancement. As a result, comprehending the influence of FDI on innovation may aid in comprehending FDI's position as a development catalyst. The majority of research on the impact of FDI on innovation has indicated that FDI boosts innovation in host countries (Cheung & Lin, 2004; Lin & Lin, 2010).

Many traditional economic factors, including as R&D expenditure, R&D employment, human capital levels, market structures, and industry characteristics, influence indigenous innovation. However, since the late 2000s, multiple studies have indicated that governance, in addition to other factors, has an important role in enhancing innovation activities (Tang et al., 2015; Kaasa et al., 2007; Belloc, 2010).

In the FDI assisted development policy, governance is critical. Good governance not only attracts inward foreign direct investment to the local economies (Zeneli, 2014; Fazio & Talamo, 2008; Mengistu & Adhikary, 2011), but it also ensures that policies are implemented effectively to achieve the desired policy effects (Zeneli, 2014; Fazio & Talamo, 2008; Mengistu & Adhikary, 2011; Muhammad, 2014; Vedantham & Kamaruddin, 2015). Multiple organisations are involved in this policy, each carrying out distinct degrees and tiers of tasks. As a result, policy-making organisations require good governance in order to

enable effective coordination among separate government agencies that execute interdependent functions (Newig & Koontz, 2014).

Multinational corporations (MNCs) are expected to provide direct benefits to host countries, such as higher domestic investments and employment. In addition, MNCs also boost productivity and technology spillovers. Various local groups, such as universities, boards of investment, national innovation organisations, and other governmental agencies, must collaborate to build absorptive capacities in order to maximise spillover benefits. As a result, excellent governance is a requirement for successful policy implementation.

Some scholars have viewed governance as a mediating variable in the relationship between FDI and economic development variables such as domestic investment and social welfare because of its critical role in ensuring effective policy execution (Farooque & Yaram, 2010; Perez-Segura, 2014).

The goal of this article is to investigate how governance affects the relationship between FDI and domestic innovation. While foreign direct investment has a favourable impact on domestic innovation, good governance increases or magnifies this relationship. The study’s hypotheses are that (1) FDI and innovation have a direct relationship, and (2) good governance mediates the relationship between the two.

The rest of the paper is organised as follows. The following section is a survey of the literature on FDI, governance, and innovation. The research methodology, analysis, discussion, and conclusion sections follow.

LITERATURE REVIEW

A mediator is a mechanism by which an independent variable affects a dependent variable. It provides information about an impact’s causal pathway and explains how or why an effect occurs. While the mediating variable is impacted by the independent variable, the independent variable is influenced by the mediating variable. Figure 1 explains the impact pathway of the mediating variable.

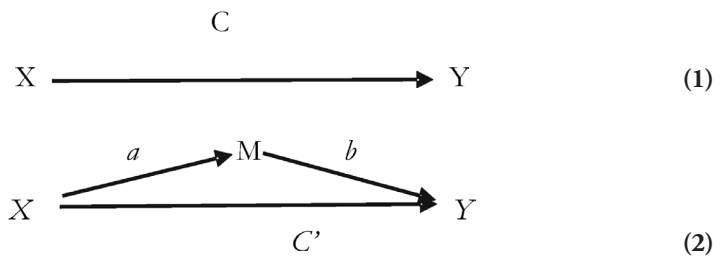


Figure 1: The impact pathway of a mediating variable

Diagram (1) displays the model without mediation. The dependent variable Y is influenced by independent variable X. Baron & Kenny (1986) refer to Path C' in Diagram 2 as the direct impact.

The mediator is referred to as M. The intervening variable M must be affected by X for the mediating effect to occur. M must then lead to Y. When variable X no longer impacts variable Y in the presence of M, there is a complete mediation. Partial mediation happens when X still causes Y but the absolute influence is reduced.

The independent variable in our study is FDI, whereas the dependent variable is innovation. Indicators of country-level governance are the moderating factor. FDI has a direct impact on domestic innovation, according to existing literature. To this author's knowledge, only a few studies use governance factors as mediators.

The mediating role of governance could be theoretically linked to Weber (1968)'s concept of high-quality government, which is characterised by a modern legal rational governance system bounded by impersonal rules and relies on hierarchy and meritocracy. In this system, government officials do not have the right to extract rent from private citizens. Under high-quality public governance, public officials must diligently perform the functions of government and foster economic development. Governance put in place by government officials can be perceived as a mediating factor.

Kettl (2021) connects Weberian bureaucracy to modern governance in his research, which ties bureaucracy to the function of business in the economy. Although companies aim to maximise their profits, bureaucracy is crucial in lowering uncertainty. Bureaucracy provides the stability on which the markets rely. Government policies and programs are increasingly delivered through intricate partnerships of public, commercial, and nonprofit groups as government systems around the world become more complex. Even while public authorities are legally required to carry out these plans, their practical execution depends on a complex network of interrelated institutions, many of which have their own internal hierarchies.

Public governance is required to guarantee authority accountability and the efficacy of policy results coming from policy implementation through multi-layer interconnected organisations. According to Jia et al. (2019), good public governance enhances the efficiency of corporate governance processes, further lowering agency risk in innovation. This is in reference to the mediating impact of public governance on innovation.

To be consistent with the conceptual framework of mediating the role of governance in the relationship between FDI and innovation, the literature review section includes three strands of research: the direct impact of FDI on innovation, the relationship between FDI and governance, and the impact of governance on innovation. Those three strands of literature represent the links *C*, *a*, and *b* in Figure 1, respectively.

The Direct effect of FDI on Innovation

FDI influences domestic innovation through spillover benefits. Spillovers are unintended consequences that occur when the presence of foreign affiliates improves local enterprises' capability, productivity, or efficiency. Spillovers that affect enterprises or competitors in the same industry are known as intra-industry spillovers. Financial and technological spillovers generated through vertical or backward linkages between enterprises in different sectors are referred to as inter-industry spillovers (Eden, 2009). Inward FDI has a variety of techniques via which it might influence local firm innovation and the economy. Demonstration effects, competitive pressure and disciplining effects, human mobility, and backward linking are examples of these mechanisms.

When multinational enterprises enter host countries with distinct advantages over local firms, such as higher operating efficiency, operational techniques, and technologies, the demonstration effect emerges. MNCs' presence in the local economy serves as a model for local businesses since they demonstrate the possibility of introducing new technology and production techniques to local markets (Cheung & Lin, 2004; Liu & Zou, 2007). Local businesses watch and learn from their international rivals. This demonstration effect might cause local businesses to copy and reverse engineer MNC products and practices (Saggi, 2002), or it can encourage them to innovate via learning. This may encourage local businesses to be more productive in their innovation efforts. In 26 Chinese provinces, Cheung and Lin (2004) discovered that FDI had an impact on three types of patent applications: innovation patents, utility patents, and design patents. Increased foreign direct investment has a positive impact, particularly on design patents. This is due to the ease with which design patents can be imitated.

When MNCs enter a local market, they create competitive pressure, forcing local enterprises to innovate and launch new technology or products in order to protect or keep their market share (Liu & Zou, 2007). Product innovation is influenced by competition intensity more than process innovation

(Damanpour, 2009). Furthermore, fierce competition has a disciplining impact on local firms. They fight against multinational corporations (MNCs) that have been successful in their home countries and are well-equipped with technology, forcing local businesses to innovate in order to stay competitive (Lin & Lin, 2010). As a result, the presence of MNCs may contribute to increased innovation across the economy.

However, when more MNCs enter the market, the marginal spillover effects diminish (Eden, 2009). The first foreign entry has the greatest potential for spillover benefits for host country businesses. Then, as more foreign companies join, the spillover benefits diminish. When a domestic industry becomes more congested, competition becomes more intense as the number of enterprises increases. This marginal spillover theory is supported by empirical research done in Romania utilising data from 1990 to 2001 (Eden, 2009).

The advent of FDI alters the tactics of domestic businesses. This occurs when local businesses avoid direct competition with multinational corporations. When confronted with significant foreign entrants, local businesses expand geographically to avoid direct competition. When native enterprises regard foreign entry as a competitive threat, this situation arises. Rather than increasing their product innovation capacity to compete directly, incumbents opt for an indirect strategic reaction by expanding their product and geographic coverage. This notion was supported by a study of 407 American and 95 German companies from 1987 to 2003 (Eden, 2009).

Another strategy to boost indigenous innovation is to increase human capital mobility. Through labor market turnovers, technology may spread to local businesses. Managers and skilled workers who formerly worked for multinational corporations (MNCs) have moved to local firms or started their own businesses. These employees' use of technology at their former employers may help their current companies innovate more effectively (Cheung & Lin, 2004; Liu & Zou, 2007). However, labour mobility may have a negative impact on local enterprises' innovation by allowing MNCs to poach the best staff from local competitors (Javorcik, 2008).

Backward linkage routes may help to boost local innovation. MNCs prevent information from leaking to competitors when competing with local enterprises in the same industry. When they demand intermediaries, however, upstream industries flourish, resulting in backward linkages. MNCs want to improve the capabilities of their local suppliers so that they can deliver goods and services that meet their quality standards. MNCs provide technical assistance

and information on product enhancement and innovation to local suppliers in response to the need for high-quality products and services (Bucar, Rojec, & Stare, 2009). These connections between multinational corporations and their local suppliers have the potential to spur more innovation in local businesses. However, if MNCs employ fewer intermediate items from local suppliers, the backward linkage may not result in beneficial innovation outcomes for local enterprises (Javorcik, 2008).

The Impact of FDI on Governance

The relationship between FDI and governance is the second strand of literature relevant to our research. As previously noted, the efficiency of FDI policy implementation is dependent on governance as a mediating factor that allows multiple organisations to accomplish multi-level activities. FDI enhances governance quality in various channels.

First, changes in management and corporate governance were brought about by international corporations' entry into the market through the acquisition of local companies (Nester et al., 2010). MNCs frequently enforce their internal reporting systems, business standards, and information disclosure policies. Because corporate governance and public governance are interrelated, this effect improves both business efficiency and public institution accountability. Public institutions adjust to the influx of FDI by tightening public governance in order to maintain and attract foreign capital as more FDI enters and causes changes in corporate governance. For businesses to function successfully, those public institutions, such as courts, bailiffs, and securities commissioners, must be prepared to enforce property rights and implement necessary rules.

According to a study by Mathur & Chatterjee (2003), countries with more FDI flows score highly in institutional governance since FDI tends to have an impact on transparency and governance. That is to say, in some instances, the presence of foreign investors has aided in the promotion of good governance in both domestic and government sectors.

The second way that FDI affects governance in developing nations is by exerting pressure on the host nations to improve their governance structures (OECD, 2003). The issues that frequently have a negative impact on governance include a weak legal framework, obsolete and ineffective laws, and bad sectoral and overall investment policies, a lack of comprehensive policies, and weak law and policy enforcement. Countries that have a clear, predictable, and enforceable rule of law, an effective judicial system, little corruption, and

less ownership concentration tend to draw more investment than those that do not. The initiatives that host country governments should take to encourage sound governance are to strengthen the rule of law, improve the regulatory and policy environment, and lower corruption.

To attract high-value FDI, the Chinese government adheres to the OECD guidelines when creating a framework for FDI policy that enhances the quality of governance. These include developing judicial independence and skill, strengthening the rule of law, promoting openness, strengthening the investment project approval process, combating corruption, safeguarding intellectual property rights, and creating an accountable and transparent legislative process (OECD, 2003).

The third way that FDI can alter governance in the host country is that, in recent years, decision-makers have become more aware of the negative effects that bad governance practices have on FDI's appeal. They started raising the standard of governance. Developing nations have discovered, for instance, that businesses are often more ready to invest in a nation with a transparent regime and no investment incentives than they are in a nation with incentives but a non-transparent regime (OECD, 2003). Many countries are improving their governance structures. For instance, in an effort to attract more FDI, the Lao PRD updated its investment legislation to ensure that multinational corporations receive fair and equal treatment, are protected from expropriation, can convert their profits into other forms of currency, and have access to Investor-State Dispute Settlement (ISDS) mechanisms (IFC, 2021). Vietnam delegated management of its FDI to lower-level bureaucracies (Vo & Nguyen, 2012).

Next, government attempts to attract FDI using E-government programs lead to changes in governance quality. Several countries use E-government programs in an effort to draw FDI, which eventually enhances the quality of governance (Al-Sadiq, 2021). The adoption of e-government services, in other words, improves the efficiency of the internal operations and procedures of government services by linking numerous government departments and agencies into a single online resource. This increases transparency, lowers transaction costs, and enhances government performance. As a result, governments become more transparent, accountable, and inclusive. Offering services online significantly reduces the processing time and costs of many activities when compared to the traditional approach of managing operations. Digital governance enhances the public's access to information and governmental services.

The Effect of Governance on Innovation

The third body of research focuses on the role of foreign direct investment in fostering innovation in recipient nations. The study of innovation began with the key work of Joseph Schumpeter (Schumpeter, 1934), which contends that large enterprises and concentrated market systems foster innovation. Arrow (1962) demonstrated, however, that a monopoly protected from competition has less motivation to innovate than enterprises in a truly competitive market. There are numerous aspects that governance influences innovation. Most of the research on the determinants of innovation looks at traditional factors such as R&D spending, human capital levels in a country, research funding availability, R&D sector employment, market structure, and industry characteristics (Kaasa et al., 2007).

During the 1970s, the influence of FDI on innovation was initially examined in international trade theory, a time when institutional considerations and property rights protection were not fully apprehended. Since the 1980s, the focus on institutional quality and governance has grown out of the work of Olsen (1982) and North (1990). Since the 2000s, the literature on the effects of FDI on innovation has exploded. Cheung and Lin (2004) discovered that FDI had an impact on the number of invention, utility, and design patent applications filed in China. Lin & Lin (2010) discovered that severe competition with MNCs can have a favorable impact on local enterprises' innovative activities. Local government corruption stifles corporate innovation in the United States, according to Huang & Yuan (2019).

Tang et al. (2013) discovered that corporate governance has an impact on Chinese SMEs' innovation activities as evaluated by patenting activities. By focusing on macro-level governance, Kaasa et al. (2007) discovered that good governance increases the innovation performance of Switzerland, Ireland, and Luxembourg. The national governance structure, according to Belloc (2012), has an impact on company innovation trends. In terms of innovation, different market models produce varied results. Radical innovation is aided by market-based coordination, such as that found in the United States, the United Kingdom, and other Anglo-Saxon economies with liquid capital markets and flexible labor markets. Non-market forms of coordination, such as those seen in Germany and numerous European countries, on the other hand, promote incremental innovation.

RESEARCH METHODOLOGY

Model Specification

Traditional FDI-innovation parameters affecting the quantity of economy-wide innovations were used to develop estimation models. Then, our variables of interest entered the equation as explanatory variables. The relationship between indigenous innovation and inward FDI is depicted in Equation (1).

$$\text{INNOVATION}_{ij} = \text{INNOVATION}_{ij(t-1)} + \text{FDI}_{ij} + \text{GOVERNANCE}_{ij} + \text{RDGDP}_{ij} + \text{GDP}_{ij} + \text{EDUFGDP}_{ij} + \text{OPENNESS}_{ij} + E_{ij} \quad (1)$$

Where;

INNOVATION = the number of patents registered by residents

FDI = inward FDI as a percentage of GDP

RDGDP = research and development spending as a percentage of GDP

GDP = log of GDP

EDUGDP = education spending as a percentage of GDP

OPENNESS = the sum of export and import divided by GDP

GOVERNANCE = six individual governance indicators; comprising the rule of law (ROL), regulatory quality (RQ), government effectiveness (GOEF), control of corruption (CC), political stability (STABLE), voice & accountability (VAC). Each indicator enters the equation one at a time.

As control variables, R&D spending, trade openness, GDP, and government spending on education were included in the equation. The independent variable was FDI, while the mediating variables were governance variables. The nation's absorptive capacities were represented by R&D spending and spending on education. Although numerous variables, such as scientific publications per year and the number of researchers per capita represent absorptive capacities, we picked just R&D investment and spending on education because those variables had high co-linearity. R&D spending is also preferable to other types of investment since it symbolises innovative efforts, whereas the number of patents is the result of those efforts (Griffith et al., 2006).

While inward FDI may affect local innovation through spillover effects, the extent to which spillovers assist local enterprises and the broader economy is dependent on the host countries' ability to absorb spillovers. The openness variable is introduced into the equation to coincide with conventional

thinking and existing empirical findings that international commerce causes technological spillovers.

We used Baron and Kenny’s (1986) technique to measure mediating effects of governance indicators on the influence of FDI on innovation.

Step 1: The independent variable must influence the dependent variable. This phase decides whether or not there is an impact to be mediated. (Foreign direct investment promotes innovation.)

$$\text{INNOVATION}_{ij} = \text{INNOVATION}_{ij(t-1)} + \text{FDI}_{ij} + \text{RDGDP}_{ij} + \text{GDP}_{ij} + \text{EDUGDP}_{ij} + \text{OPENNESS}_{ij} + E_{ij} \tag{2}$$

Step 2: The mediator is influenced by the independent variable. The mediator is treated as an outcome variable in this stage. (FDI impacts governance.)

$$\text{GOVERNANCE}_{ij} = \text{GOVERNANCE}_{ij(t-1)} + \text{FDI}_{ij} + \text{RDGDP}_{ij} + \text{GDP}_{ij} + \text{EDUGDP}_{ij} + \text{OPENNESS}_{ij} + E_{ij} \tag{3}$$

Step 3: The dependent variable is influenced by the mediator. In our case, governance has an impact on innovation.

$$\text{INNOVATION}_{ij} = \text{INNOVATION}_{ij(t-1)} + \text{GOVERNANCE}_{ij} + \text{RDGDP}_{ij} + \text{GDP}_{ij} + \text{EDUGDP}_{ij} + \text{OPENNESS}_{ij} + E_{ij} \tag{4}$$

Step 4: The effect of the independent variable (FDI) on the dependent variable (innovation) decreases after controlling for the mediator’s influence.

$$\text{INNOVATION}_{ij} = \text{INNOVATION}_{ij(t-1)} + \text{FDI}_{ij} + \text{GOVERNANCE}_{ij} + \text{RDGDP}_{ij} + \text{GDP}_{ij} + \text{EDUFGDP}_{ij} + \text{OPENNESS}_{ij} + E_{ij} \tag{1}$$

If all of the preceding requirements were met, and the independent variable’s influence on the dependent variable became insignificant in the mediator’s presence, the mediator “totally” mediated the independent variable’s effect. However, the independent variable’s effect was “partially” mediated if the independent variable’s influence remained significant in the presence of the mediator.

Data Collection

We used data from the World Bank Development Indicators database (2019) and the Worldwide Governance Indicators database (2019) to generate a cross-sectional time-series dataset. The panel data covers a 25-year time series of 58 developing nations from 1995 to 2019. This panel data collection only includes 58 developing nations because many countries’ crucial data is unavailable. The

most recent year for which data was available in the database at the time of writing was 2019. This study examines the number of patents registered each year as a proxy for innovation, based on previous research articles on economy-wide innovation (Cheung & Lin, 2004; Nadolny, 2010; Phene & Almeida, 2008).

To derive efficient estimators, we followed various literature e.g. Law & Azman-Saini (2012), to estimate this panel data set by Generalized Method of Moments (GMM). We used a system GMM, which relied on both the level and difference equations. We used lagged differences of regressors as instruments for the level equation.

Because this paper tests the relationship between inward FDI and innovation and tests the mediating effect of governance on the relationship between FDI and innovation, the discussion and interpretation of coefficients focussed primarily on FDI, patents (INNOVATION), and the interaction terms.

ANALYSIS

Descriptive Statistics

The descriptive statistics of dependent variables and selected independent variables have been presented first in the analysis section. There are six governance variables and six interaction terms, as well as the number of registered patents (INNOVATION), and FDI as a percentage of GDP (FDI). In addition, we have presented a governance indicator correlation matrix.

Table 1: Descriptive Statistics of FDI and Innovation

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>SE Mean</i>	<i>Minimum</i>	<i>Maximum</i>
FDI*	1350	4.528	0.219	-40.414	173.45
INNOVATION**	1350	2.1698	0.0267	0	6.1478

Notes: * FDI as a percentage of GDP. ** log of the number of patents registered.

Table 2: Mean Values of Individual Governance Indicators from 1995 to 2019

<i>Variable</i>	<i>Mean</i>	<i>SE Mean</i>	<i>Minimum</i>	<i>Maximum</i>
ROL	-0.2132	0.0174	-1.6924	1.5965
RQ	0.0151	0.0188	-1.8515	1.6749
STABLE	-0.2656	0.0219	-2.8121	1.6981
VAC	-0.1321	0.0207	-1.8296	1.5911
CC	-0.2821	0.0155	-1.4153	1.5636
GOEF	-0.0714	0.0161	-1.495	1.669

N=1,35

Table 3: Mean Values of Individual Governance Indicators by Year

Year	ROL		RQ		STABLE		VAC		CC		GOEF		VAC	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1995	-0.24	0.09	0.06	0.10	-0.25	0.12	-0.12	0.10	-0.32	0.08	-0.12	0.08	-0.12	0.10
1996	-0.28	0.09	0.02	0.10	-0.30	0.11	-0.16	0.09	-0.32	0.08	-0.16	0.08	-0.16	0.09
1997	-0.27	0.09	0.02	0.09	-0.28	0.11	-0.15	0.09	-0.32	0.07	-0.16	0.08	-0.15	0.09
1998	-0.25	0.09	0.04	0.09	-0.24	0.11	-0.13	0.10	-0.30	0.08	-0.13	0.08	-0.13	0.10
1999	-0.27	0.09	0.02	0.09	-0.27	0.10	-0.13	0.10	-0.31	0.07	-0.14	0.07	-0.13	0.10
2000	-0.27	0.09	0.01	0.09	-0.28	0.11	-0.13	0.10	-0.31	0.08	-0.13	0.08	-0.13	0.10
2001	-0.24	0.08	-0.01	0.09	-0.22	0.11	-0.13	0.10	-0.30	0.07	-0.11	0.08	-0.13	0.10
2002	-0.24	0.09	-0.05	0.10	-0.21	0.12	-0.14	0.11	-0.33	0.08	-0.11	0.08	-0.14	0.11
2003	-0.22	0.09	-0.04	0.09	-0.24	0.13	-0.13	0.11	-0.24	0.07	-0.07	0.08	-0.13	0.11
2004	-0.20	0.08	-0.01	0.09	-0.32	0.11	-0.11	0.11	-0.26	0.08	-0.08	0.08	-0.11	0.11
2005	-0.22	0.09	-0.04	0.09	-0.26	0.11	-0.12	0.10	-0.26	0.08	-0.10	0.08	-0.12	0.10
2006	-0.24	0.09	-0.01	0.09	-0.29	0.12	-0.14	0.11	-0.25	0.08	-0.07	0.08	-0.14	0.11
2007	-0.23	0.09	0.02	0.09	-0.24	0.11	-0.14	0.11	-0.26	0.07	-0.05	0.08	-0.14	0.11
2008	-0.22	0.09	0.04	0.10	-0.28	0.12	-0.16	0.11	-0.28	0.07	-0.06	0.08	-0.16	0.11
2009	-0.22	0.09	0.03	0.10	-0.30	0.12	-0.17	0.11	-0.31	0.08	-0.08	0.08	-0.17	0.11
2010	-0.21	0.09	0.05	0.10	-0.31	0.12	-0.18	0.11	-0.31	0.08	-0.05	0.08	-0.18	0.11
2011	-0.21	0.09	0.05	0.10	-0.30	0.11	-0.16	0.11	-0.29	0.08	-0.05	0.08	-0.16	0.11
2012	-0.22	0.09	0.03	0.10	-0.29	0.11	-0.14	0.10	-0.28	0.08	-0.06	0.08	-0.14	0.10
2013	-0.22	0.09	0.01	0.10	-0.30	0.11	-0.15	0.10	-0.26	0.08	-0.06	0.09	-0.15	0.10
2014	-0.15	0.09	0.03	0.10	-0.23	0.11	-0.12	0.11	-0.26	0.08	0.00	0.08	-0.12	0.11
2015	-0.15	0.09	0.00	0.10	-0.26	0.11	-0.08	0.11	-0.25	0.08	-0.01	0.08	-0.08	0.11
2016	-0.13	0.09	0.01	0.09	-0.27	0.11	-0.10	0.11	-0.25	0.08	-0.01	0.08	-0.10	0.11
2017	-0.15	0.08	0.02	0.09	-0.24	0.11	-0.12	0.11	-0.26	0.08	-0.02	0.08	-0.12	0.11
2018	-0.14	0.09	0.03	0.10	-0.22	0.11	-0.10	0.11	-0.26	0.08	0.01	0.08	-0.10	0.11
2019	-0.15	0.09	0.03	0.09	-0.22	0.10	-0.10	0.11	-0.26	0.08	0.02	0.08	-0.10	0.11

Note: N= 55 for all years.

In our dataset, developing countries received 4.653 percent of FDI inflows as a proportion of GDP, as seen in Table 1. The average number of patents per year was 2,908 patents. Except for regulatory quality, the 25-year mean values of individual governance measures were negative, as shown in Table 2. The yearly mean values in Table 3 followed the same pattern as the 25-year average. The mean values for corruption control, political stability, the rule of law, and voice and accountability were all negative. Except for 2014, all years had negative mean values for government effectiveness. Despite having a positive 25-year mean score, regulatory quality had fallen into negative territory for several years.

Table 4: Mean Values of Six Interaction Terms

<i>Variable</i>	<i>Mean</i>	<i>SE Mean</i>	<i>Minimum</i>	<i>Maximum</i>
CC*FDIGDP	-0.506	0.201	-30.589	181.112
GOEF*FDIGDP	0.359	0.245	-26.191	223.206
ROL*FDIGDP	0.004	0.291	-35.16	276.918
RQ*FDIGDP	1.147	0.257	-23.24	208.583
STABLE*FDIGDP	0.246	0.248	-30.491	220.485
VAC*FDIGDP	0.421	0.246	-16.161	214.69

Note: N= 1,350

While all governance factors, except regulatory quality, had negative 25-year mean values, the 25-year average of individual interaction terms had positive values.

Following that, we presented a six-variable governance correlation matrix. Each governance variable correlated with one another, according to the correlation coefficients presented in Table 5.

Table 5: Correlation Matrix of Governance Variables

<i>Correlation</i>	<i>CC</i>	<i>GOEF</i>	<i>STABLE</i>	<i>RQ</i>	<i>ROL</i>	<i>VAC</i>
CC	1	.851**	.612**	.761**	.882**	.681**
GOEF	.851**	1	.578**	.846**	.881**	.684**
STABILITY	.612**	.578**	1	.551**	.641**	.598**
RQ	.761**	.846**	.551**	1	.814**	.774**
ROL	.882**	.881**	.641**	.814**	1	.709**
VAC	.681**	.684**	.598**	.774**	.709**	1

GMM Analysis

The GMM analysis part was arranged using the four-step Baron & Kenny (1986) procedure. In Step 1, Equation 2 determined if there was an innovation-FDI link to be mediated. Equation 2 also served as the base model for FDI's impact on innovation when no governance variables were present.

The governance indicators comprised six variables. Although it was reasonable to include six components in the base model to investigate their impact on innovation at the same time, this was not feasible due to the close correlation of the six variables. As a result, Models 1 to 6 were created by adding one unique governance variable to the base model at a time. Model 1 is a formula that includes variables from both the base model and VAC. The

initial model is combined with ROL, STABLE, RQ, CC, and GOEF to form Models 2 through 6. Table 6 shows the outcome of Step 1, or base model analysis.

Table 6: Results of GMM Analysis in Step 1

<i>Dependent Variable: INNOVATION</i>	<i>Base Model</i>
	Coefficient
Dependent Variable	(S.E)
INNOVATION (-1)	0.572799*** (0.013795)
FDI	0.003511*** (0.000755)
RDGDP	0.303609*** (0.040504)
GDP	0.036377*** (0.011544)
EDUGDP	-0.003451 (0.007883)
OPENNESS	-0.07512** 0.036293
J-statistic	47.9998
Prob(J-statistic)	0.796351

Notes: ***Significant at less than 1%. **Significant at less than 5%. *Significant at less than 10%.

Equation 2 in Step 1 examined whether FDI had an impact on overall innovations in developing countries. According to the table, FDI had a statistically significant coefficient, implying that FDI was associated with an increase in the number of economy-wide innovations. RDGDP, GDP, and OPENNESS were statistically significant as well. The positive coefficients of the three variables supported common wisdom about FDI-induced innovation spillovers.

Step 2's Equation 3 examined whether FDI had an impact on each governance variable. This stage, according to B&K (1986), treated each mediator as a separate outcome variable. Table 7 summarises the findings of the study.

Table 7: Results of GMM Analysis in Step 2

	1	2	3	4	5	6
<i>Dependent Variable</i>	VAC	ROL	STABLE	RQ	CC	GOEF
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
<i>Independent Variables</i>	(S.E.)	(S.E.)	(S.E.)	(S.E.)	(S.E.)	(S.E.)
VAC(-1)	0.780881*** (0.001391)					
ROL(-1)		0.670644*** (0.002487)				
STABLE(-1)			0.733413*** (0.011448)			
RQ(-1)				0.621768*** (0.00356)		
CC(-1)					0.77553*** (0.005126)	
GOEF(-1)						0.624017*** (0.001476)
FDI	-0.001455*** (0.000289)	0.003166*** (0.000881)	-0.000908*** (0.000377)	0.010053*** (0.001245)	0.004994*** (0.000536)	-0.000505 (0.000338)
RDGDP	-0.018999 (0.010487)	0.000641 (0.011375)	-0.128898*** (0.030952)	-0.031018*** (0.012933)	0.022996* (0.012928)	-0.044907*** (0.00566)
GDP	0.003518*** (0.000755)	0.045005*** (0.001934)	0.052595*** (0.006685)	0.050888*** (0.001506)	0.017195*** (0.001491)	0.023125*** (0.002051)
EDUGDP	-0.002243*** (0.000476)	-0.00497*** (0.000855)	0.000716 (0.009355)	-0.001979 (0.002249)	-0.00478*** (0.000948)	-0.002365*** (0.000941)
OPENNESS	-0.11947*** (0.006741)	-0.027566*** (0.001508)	-0.119472*** (0.006741)	-0.01486*** (0.00209)	-0.021233*** (0.004024)	-0.03964*** (0.001179)
J-statistic	35.03563	41.56373	58.17494	53.09009	51.94227	53.15038
Prob(J-statistic)	0.956958	0.796351	0.199718	0.355968	0.398093	0.317424

Notes: ***Significant at less than 1%, **Significant at less than 5%, *Significant at less than 10%.

Table 7 shows that the coefficients of FDI are statistically significant in all models except Model 6 with GOEF as the dependent variable. Five of the six individual governance factors are affected by FDI: VAC, ROL, STABILITY, RQ, and CC. Because just five governance variables stratify the condition in Step 2, we left GOEF out of the estimation in Step 3.

Table 8: Results of GMM Analysis in Step 3.

<i>Model</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Dependent Variable</i>	<i>INNOVATION</i>	<i>INNOVATION</i>	<i>INNOVATION</i>	<i>INNOVATION</i>	<i>INNOVATION</i>
<i>Variable</i>	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
	(S.E)	(S.E)	(S.E)	(S.E)	(S.E)
INNOVATION (-1)	0.574576***	0.576737***	0.58127***	0.560644***	0.578752***
	0.0126	0.00722	0.010135	0.015685	0.011841
RDGDP	0.303307***	0.292026***	0.281823***	0.279027***	0.285762***
	0.0515	0.025903	0.037358	0.042313	0.036432
LOGGDP	0.050019***	0.046598***	0.046809***	0.05942***	0.044363***
	0.0126	0.008639	0.008839	0.011661	0.010553
EDUGDP	-0.0027	-0.011179**	-0.011412*	-0.007844	-0.005032
	0.0081	0.004703		0.005293	0.006827
OPENNESS	-0.095795***	-0.100438***	-0.093642***	-0.110153***	-0.098214***
	(0.033941)	(0.02785)	(0.028368)	(0.041106)	(0.028856)
VAC	-0.0555**				
	0.0223				
ROL		-0.079258***			
		0.01692			
STABLE			-0.039481***		
			0.00913		
RQ				-0.179256***	
				0.02723	
CC					-0.012354
					0.016599
J-statistic	49.71105	53.22802	51.60438	49.29986	50.06843
Prob(J-statistic)	0.4448	0.314785	0.372334	0.461124	0.43076

Notes: ***Significant at less than 1%, **Significant at less than 5%, *Significant at less than 10%. All models share the same dependent variable, INNOVATION. Model 1 tests the impact of VAC, in the absence of FDI, on INNOVATION. Models 2 to 4 test the effects of ROL, STABLE, and RQ on INNOVATION, respectively, in the absence of FDI.

Step 3 examines the impact of the remaining five governance variables on innovation in the absence of foreign direct investment. Only the coefficient of CC is not statistically significant, according to Table 8. The remaining

four governance variables have significant coefficients. As a result, we did not estimate the model containing CC as a dependent variable in Step 4 or Equation 5.

Table 9: Results of GMM Analysis in Step 4.

<i>Model</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Dependent Variable</i>	<i>Innovation</i>	<i>Innovation</i>	<i>Innovation</i>	<i>Innovation</i>
Independent Variable	Coefficient	Coefficient	Coefficient	Coefficient
	(S.E.)	(S.E.)	(S.E.)	(S.E.)
LOGPATENTD(-1)	0.599276*** (0.019418)	0.608647*** (0.015342)	0.600976*** (0.016082)	0.607418*** (0.017372)
FDIGDP	0.003129*** (0.000878)	0.00289*** (0.001048)	0.002536** (0.001006)	0.002875*** (0.000685)
RDGDP	0.389701*** (0.073344)	0.424418*** (0.052006)	0.405943*** (0.059866)	0.4161*** (0.062746)
GDP_CAP	0.000701 (0.0004)	0.000141 (0.00661)	0.00000589 (0.000004)	0.000499 (0.000329)
EDUGDP	0.003844 (0.009327)	-0.002025 (0.010971)	-0.000521 (0.005847)	-0.003571 (0.007984)
OPENNESS	-0.030132 (0.0413528)	-0.047817 (0.079295)	-0.076029 (0.048577)	-0.047499 (0.038998)
VAC	-0.062337** (0.024705)			
ROL		-0.044198 (0.040195)		
RQ			-0.124649*** (0.044918)	
STABLE				-0.03493 (0.024058)
J-statistic	47.1295004	47.76186	48.12084	45.94164
Prob(J-statistic)	0.467259968	0.441606	0.427244	0.557568

Notes: ***Significant at less than 1%, **Significant at less than 5%, *Significant at less than 10%. All models share the same dependent variable, INNOVATION. Model 1 measures the impact of VAC, in the presence of FDI and FDI-governance interaction terms, on INNOVATION. Models 2 to 4 measure the effects of ROL, STABLE, and RQ on INNOVATION, respectively, in the presence of FDI and FDI-governance interaction terms.

Table 9 shows that the prominent control variables influencing economy-wide innovation are FDI and RDGDP. Their coefficients are statistically significant, which is consistent with most of the previous literature. Regarding mediating impact of governance variables in the relationship between FDI and innovation, only two governance factors pass Baron and Kenny’s (1986) fourth-step test. In the presence of FDI, the coefficients of VAC and RQ are statistically significant. This demonstrates that the relationship between FDI and innovation is mediated by voice and accountability and regulatory quality.

Next, we checked whether VAC and RQ exert total or partial mediating effects by comparing the coefficients of FDI without mediating variables in Equation 2 with those in the presence of mediating variables VAC and RQ in Equation 1. Those coefficients are repeated in Table 10 below.

Table 10: Comparing the Coefficients of FDI in the Presence of Mediating Variables

<i>Coefficients</i>	<i>Original Equation (Table 6, Equation 2)</i>	<i>Equation with VC (Equation 1, Table 9, Column 2)</i>	<i>Equation with RQ (Equation 1, Table 9, Column 9)</i>
FDI	0.003511	0.003129	0.002536
VC		0.062337	
RQ			0.124649
Combined effect		0.06546	0.127226

Note: Figures in this table were derived from those in Tables 6 and 9.

The inclusion of the VC and RQ as mediating variables in Equation 1 (Table 9) caused the FDI coefficient to diminish from 0.003511 to 0.003129 and to 0.002536, respectively. This demonstrated that the direct relationship between FDI and innovation was partially mediated by voice and accountability and regulatory quality. The combined effects of FDI and the two mediating variables were 0.06546 and 0.127226, respectively.

In summary, the majority of the studies in the body of literature that had shown that foreign direct investment directly impacts domestic innovation were supported by the findings. The study presented in this paper revealed a novel finding: when individual governance variables were introduced as mediating factors, two governance variables, voice and accountability and regulatory quality, exerted mediation effects in the positive association between FDI and innovation. The findings indicate that when the impact of FDI is paired with the effects of mediating variables on domestic innovation, the impact of FDI on domestic innovation will be stronger.

DISCUSSION AND POLICY IMPLICATIONS

The findings of our study's mediation analysis using Baron and Kenney (1986)'s method demonstrate that FDI directly influences domestic innovation in developing nations. Therefore, an increase in FDI inflows will lead to more innovations across the entire economy. This is the result of FDI's positive economic spillovers to host nations.

The analysis of mediating effects demonstrates the FDI's indirect impact on innovation. The FDI influence on voice & accountability and regulatory quality sets the stage for governance's mediating function. After that, the two mediating factors have an impact on domestic innovation. The combined effects of FDI and mediating factors have a more significant impact on domestic innovation than FDI alone does.

There are numerous justifications for the mediating roles that voice and accountability and regulatory quality play in fostering innovation. Citizens' voice and accountability, to start, enable locals to effectively express their ideas. It covers issues like speech freedom, media freedom, political rights, and civil liberties. There is therefore more room for experimentation. More MNC investments may spur more innovation among local businesses with greater freedom of expression, which would have mediating effects.

Institutional environments are similarly affected by voice and accountability. Poor institutional frameworks resulting in cronyism and favouritism can lead to resource misallocation which can hamper innovation, in societies with little voice and accountability. Higher voice and accountability contribute to better institutions and decision-making. It boosts civic engagement, cuts down on corruption, and stops ineffective government interference, which would free up more resources for innovative activities. The findings of Nadeem et al. (2020) revealed that low voice and responsibility had a negative effect on innovation in Pakistan.

For some countries, regulatory reform may be needed. Reforming the regulatory environment encourages market dynamics, eliminates barriers to competition, and ensures the basic well-being of society. Innovation performance will improve with a regulatory change that lowers corruption, increases transparency, and strengthens law enforcement.

Regulations of different kinds have varying effects, and even those of the same kind might have varied effects on innovation, depending on how they are applied. For instance, Blind (2021) found that pricing regulation that doesn't interfere with business price setting is clearly highly beneficial

for a nation's capacity for innovation. Environmental restrictions that are appropriate can encourage the creation of new eco-friendly procedures, goods, and technologies. The G7 nations' R&D output is influenced by institutional rules that guarantee that intellectual property rights are properly implemented. Innovation performance in OECD economies is boosted by a general legal and regulatory environment that supports enterprise competitiveness.

The implications of our findings are pertinent to policy. Policymakers should be aware that without improvements in governance quality, the traditional policy prescription, such as increasing government spending on R&D and education, may not be adequate to increase FDI's innovation spillovers. Our research shows that improving governance quality enhances the benefits of conventional economic parameters. Voice and accountability and regulatory quality are individual governance factors that mediate innovation. In terms of voice and accountability, it is crucial for the government to make sure that citizens are included in the decision-making process. To improve the flow of knowledge and information and to foster innovation and new technologies, both public and private engagement should be promoted.

Due to the quick pace of technological advancement, governments have been grappling with increased complexity and unpredictability in the regulatory domains. Therefore, it is crucial to create an atmosphere that is conducive to foreign investment and to put necessary regulatory reforms into place, such as those that enhance competition protection, property rights protection, and transparency in multilateral collaboration.

CONCLUSION

While the majority of research in the body of literature examined the relationship between FDI and innovation, this paper goes a step further to determine whether governance mediates this relationship in developing economies. The data from The World Bank Development Indicators and the Worldwide Governance Indicators (2019) databases were used to form a 25-year time series-cross sectional data of 55 developing countries from 1995 to 2019. A system GMM was used to estimate this panel dataset. According to the study's findings, the relationship between FDI and innovations is mediated by two governance factors including voice and accountability and regulatory quality. The results imply that, in the absence of high governance quality, the traditional policy prescription—such as increasing government spending on R&D and education—may not be adequate to promote FDI's innovation spillovers.

Governments in developing nations should work to enhance the voice and accountability and regulatory quality in order to increase the impact of FDI on local innovations. This is because the FDI-innovation relationship is mediated by those two governance indicators. Regarding voice and accountability, it is critical for the government to ensure that citizens are involved in decision-making and that public and private participation is encouraged because this may result in the flow of knowledge and information that encourage innovation. Regarding regulatory quality, the government must foster an environment that is welcoming to foreign investment and implement the appropriate regulatory reforms, such as those that strengthen competition protection, property rights protection, and transparency in the operations of the organisations implementing policies.

References

- Alakbarov, Y.B. (2016). Corruption and foreign direct investments in emerging market economies. *Ecoforum*, 5(2): 303-308.
- Al-Sadiq, A.J. (2021). *The role of e-government in promoting foreign direct investment inflows*. IMF Working Paper WP/21/8. <https://www.imf.org/en/Publications/WP/Issues/2021/01/15/The-Role-of-E-Government-in-Promoting-Foreign-Direct-Investment-Inflows-49981>
- Arrow, K.J. (1962). The economic implication of learning by doing. *Review of Economic Studies*, 29:155-173.
- Baron, R. & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Belloc, F. (2012). Corporate governance and innovation a survey. *Journal of Economic Surveys*, 26(5): 835-864.
- Biglaiser, G., & Staats, J. L.(2009). Do political institutions affect foreign direct investment? A survey of U.S. Corporations in Latin America. *Political Research Quarterly*, 63(3): 508-522.
- Blind, K. (2012). The influence of regulations on innovation: A quantitative assessment for OECD Countries, *Policy Research*, 41(2012) , 391-400.
- Bucar, M., Rojec, M., & Stare, M. (2009). Backward FDI linkages as a channel for transferring technology and building innovation capability: The case of Slovenia. *European Journal of Development Research*, 21: 137-153.
- Cheung, K.-y., & Lin, P. (2004). Spillover effects of FDI on innovation in China: Evidence from the provincial data. *China Economic Review*, 15: 25-44.

- Damanpour, F. (2009). An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management*, 21: 996-1010.
- Dimov, T. and Ivanov, P. (2021). Regulatory quality and innovation- The best approach and practices from the European Union and the world and regulatory policy in Bulgaria, European Union Institution of Public Administration, <https://elib.ipa.government.bg/xmlui/handle/123456789/1057>
- Eden, L. (2009). Letter from the Editor-in-Chief: FDI spillovers and linkages. *Journal of International Business Studies*, 40: 1056-1069.
- Farooque, O.A., & Yarram, S.R. (2010). Corporate governance and foreign direct investment inflows: Cross-sectional international evidence. *American Journal of Finance and Accounting*, 2(1), 1-15.
- Fazio, G. & Talamo. (2008). How “attractive” is good governance for FDI, in J. Jay Choi, Sandra Doe (Ed.) *Institutional approach to global corporate governance: Business systems and beyond*: 35-54. Emerald Group Publishing Limited.
- García, F., Jin, B. & Salomon, R. (2010). Does inward foreign direct investment improve the innovative performance of local firms? *Research Policy*, 42(1): .231–244.
- Griffith, R., Huergo, E., Mairesse, J., & Peters, B. (2006). *Innovation and productivity across four European countries*.Oxford Review of Economic Policy,22(4): 483-498.
- Hsu, W.H.L., Wang, G.Y., Tsai, H.L., & Lu, C.W.(2012). The moderating and mediating effects of corporate governance on firm performance. *Recent Researches in Applied Computers and Computational Science*, Proceedings of the 11th WSEAS international conference on Applied Computer and Applied Computational Science, 11-13 May 2012, Singapore: 113–119. ACM Digital Library.
- Hu, J., Wang, Z., Huang, O., & Zhang, X. (2019). Environmental regulation intensity, foreign direct investment, and green technology spillover-An empirical study. *Sustainability*, 11,10:2-15.
- Huang, Q., & Yuan, T. (2021). Does political corruption impede firm innovation? Evidence from the United States. *Journal of Financial and Quantitative Analysis*, 56(1). 213-248.
- Gani, A. (2007). Governance and Foreign direct investment links: Evidence from panel data estimations. *Applied Economics Letters*, 14: 753-756.
- Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows the role of governance infrastructure. *World Development*, 3(11): 1899-1919.
- IFC. (2021). Investment reform map for Lao PDR A foundation for a new investment policy and promotion strategy, International Financial Corporation

policy paper, https://www.ifc.org/wps/wcm/connect/region_ext_content/ifc_external_corporate_site/east+asia+and+the+pacific/resources/investment+reform+map+for+lao+pdr

- Javorcik, B.S. 2008. Can survey evidence shed light on spillovers from foreign direct investment? *The World Bank Research Observer*, 23(2): 139-159.
- Jia, N; Huang, K.G.; Zhang, C.M. (2019). Public governance, corporate governance, and firm innovation: An examination of state-owned enterprises. *Academy of Management Journal*.62, (1), 220-247. Research Collection Lee Kong Chian School of Business. Available at: https://ink.library.smu.edu.sg/lkcsb_research/6549
- Kaasa, A., Kaldaru, H., & Parts, E. (2007). *Social capital and institutional quality as factors of innovation: Evidence from Europe*. Tartu: Tartu University Press.
- Kettl, F. (2021) Weberian bureaucracy and contemporary governance. *Perspective on Public Management and Governance*. 5: 111-120.
- Lall, S. & Narula, R. (2004). Foreign direct investment and its role in economic development: Do we need a new agenda? *The European Journal of Development Research*, 16(3): 447-464
- Law, S.H. & Azman-Saini, W.N. (2012). Institutional quality, governance, and financial development. *Economics of Governance*, 13,3, 217-236
- Lin, H.-l., & Lin, E. S. (2010). FDI, trade, and product innovation: Theory and evidence. *Southern Economic Journal*, 77(2): 434-464.
- Liu, X., & Zou, H. (2007). The impact of greenfield FDI and mergers and acquisitions on innovation in Chinese high-tech industries. *Journal of World Business*, 43:352-364.
- Mathur, R.D. & Chatterjee, S. (2003). Governance and transparency for investment, OECD conference, 17-18 November, Johannesburg South Africa, <https://www.oecd.org/daf/inv/investmentstatisticsandanalysis/19479227.pdf>
- Mengistu, A.A. & Adhikary, B. K. (2011). Does good governance matter for FDI inflows? Evidence from Asian Economies. *Asia Pacific Business Review*, 17(3): 281-299.
- Muhammad, F.(2014). Leadership, governance and public policy implementation competencies in the broader public sector. *European Journal of Business and Management*, 6(36): 66-74.
- Mukherjee, A., Wang, Leonard F.S., Tsai, & Y. (2011). *Governance and foreign direct investment: Is there a two-way relationship?* Discussion Research Paper 11/02, University of Nottingham, School of Economics, U.K.

- Nadeem, M.A., Jiao, Z , Nawaz, K. & Younis A. (2020). Impacts of voice and accountability upon innovation in Pakistan: Evidence from ARDL and Maki cointegration approaches, *Hindawi Mathematical Problems in Engineering*, 2020, 1-18.
- Nadolny, A.J. (2010). Rethinking the “innovative firm”: innovation creation in the Australian water technology industry. *Journal of Knowledge Management Practice*, 11(1): 1-15.
- Newig, J. & Koontz, T.M. (2014). Multi-level governance, policy implementation, and participation: The EU’s mandated participatory planning approach to implementing environmental policy. *Journal of European Public Policy*, 21(2): 248-267.
- Nestor, S, Yasui, T & Guy, M.L. (2010). The relevance of corporate governance to Euroasian transition economies.
- North, G.C. (1990). *Institutions, institutional change, and economic performance*. New York: Cambridge University Press.
- OECD. (2022). Regulatory reform efficient markets, effective government, <https://www.oecd.org/gov/regulatory-policy/42203181.pdf>
- OECD. (2003). China: Progress and policy review, <https://www.oecd.org/daf/inv/investmentfordevelopment/33830343.pdf>.
- Olson, M.L. (1982). *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. New Haven: Yale University Press.
- Perez-Segura, A. (2014). *FDI and human development: What is the role of governance?*, unpublished Ph.D. Dissertation, Lund University, Sweden.
- Phene, A., & Almeida, P. (2008). Innovation in multinational subsidiaries: The role of knowledge assimilation and subsidiary capabilities. *Journal of International Business Studies*, 39, 901-919.
- Saggi, K.(2002). Trade, foreign direct investment, and international technology transfer: A survey. *The World Bank Research Observer*, 17(2): 191-235.
- Schumpeter, J.A. (1970). *Capitalism, socialism, and democracy*. London: Irwin University Books.
- Sin C. & Leung, W. (2001). Impact of FDI liberalization on investment inflows. *Applied Economics Letters*, 8: 253-56.
- Tang, Y., Shapiro, D., Wang, M., & Zhang, W. (2015). The effects of corporate governance on the innovation performance of Chinese SMEs. *Journal of Chinese Economic and Business Studies*, 13(4): 311-335.
- Vedantham, V. Mallika & Kamruddin, S. (2015). Good governance and public policy in India, *International Journal of Social Sciences*, Special Issue, 1(1): 787-889.

- Vo, T.T. & Nguyen, A.D. (2012). "Experiences of Vietnam in FDI promotion: Some lessons for Myanmar." In *Economic Reforms in Myanmar: Pathways and Prospects*, edited by Hank Lim and Yasuhiro Yamada, BRC Research Report No.10, Bangkok Research Center, IDE- JETRO, Bangkok, Thailand.
- Weber, M. (1968). *Economy and society*. New York, NY: Bedminster.
- World Bank. (2015). *World Development Indicators*. <http://data.worldbank.org/data-catalog/world-development-indicators>. Accessed 0 January 2020.
- World Bank (2015). *Worldwide governance indicators*. http://info.worldbank.org/governance/wgi/sc_country.asp.
- Zeneli, V. (2014). The role of institutions and good governance for attracting foreign investments: Evidence from Southeast Europe, *Business and Economics Journal*, 5(2): 1-20.