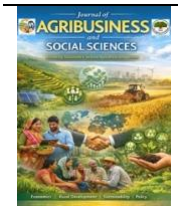

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The Nexus of Financial Inclusion and Economic Performance: Role of Governance in Asia

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A B S T R A C T

Asian developing economies are placing greater emphasis on financial inclusion and increasing awareness about its importance to reducing poverty and improving economic performance. Many kinds of research regarding financial inclusion and economic performance have been undertaken. However, there is a lack of literature on Asia's financial inclusion and economic performance. This study examined the effect of financial inclusion on economic performance across 23 Asian nations. Moreover, the study also investigates the moderating role of governance in the nexus of financial inclusion and economic performance for Asian economies. The study uses the Euclidean distance method to compute the economic performance and financial inclusion indexes for Asian countries. Furthermore, the governance index has also been computed using principal component analysis in this research. Moreover, the Panel data analysis techniques and Driscoll Kraay standard error estimation method are used to conduct data analysis. The empirical evidence concluded that financial inclusion contributes positively and significantly to the economic performance of Asia. At the same time, inflation harms the economic performance of Asia. It also revealed that governance moderates the relationship between financial inclusion and economic performance in Asia. Based on the findings, countries with relatively low financial inclusion would benefit from improved governance. In order to maximize the impact of financial inclusion on the economic performance of Asian countries, our recommendation is to create a national strategy that will improve access to finance and policies that will enhance governance.

Introduction

In the early 2000s, financial inclusion (FI) received widespread attention due to studies linking FI as an integral part of economic performance (Babajide et al., 2015). Over the last decade, FI, also known as expansion in the financial system, financial services, or financial goods to allow more access to adults in society, has become a topic of discussion among academics, policymakers, and regulators in emerging economies (Van et al., 2021). FI contributes to expanding the financial network and efficiently moving funds inside a country's borders. FI is supposed to increase people's chances of success, reduce poverty, and boost the development of the economy. According to statistics, several countries have established FI as an official aim to promote their economic performance (Sahay et al., 2015). The financial literature does not have a universal definition of FI because it is multidimensional and involves different approaches based on a country's different objectives (Sanderson et al., 2018). FI is a macro-level concept associated with accessibility, availability, and use. FI, however, can be defined as anyone having a bank account with a formal financial institution (Zins & Weill, 2016).A bank account holder is more likely to begin saving, borrowing, investing, and borrowing (Sahay et al., 2015). Simply put, it is the process of acquiring and using official financial services, such as establishing a payment method with a financial institution. According to (Evans & Adeoye, 2016), FI refers to situations in which a large proportion of individuals and families have access to financial services, providing them with timely and adequate credit access, as well as affordable financial products. In addition to integrating the financial sector, enhancing FI is critical for improving lives, decreasing poverty, and encouraging performance of the economy (Chibba, 2009; Manji, 2010).

The objective of FI is to ensure that all individuals, households, businesses, and members of the community have access to and use formal financial products and services, such as transactional products, credit cards, payments, savings, and insurance while acting suitably when delivering these products (K. Singh & Singh Kondan, 2011). In addition to using insurance products to reduce financial risks, including fire, floods, and agricultural damage, Access to traditional financing from financial institutions is also part of FI (Demirguc-Kunt et al., 2017). Moreover, through FI, access to accounts boosted farmers' savings, resulting in higher farm production and family spending (Demirguc-Kunt et al., 2017). People living in the poorest rural families would significantly benefit from this. FI contributes to reducing poverty and inequality in this respect. The poor, particularly women, have access to education and investment opportunities through this system. They can obtain loan coverage for various risks and receive bank loans while facilitating and securing payments (Avais, 2014; Mader, 2018). An efficient financial system can help increase new businesses and grow existing ones (Demirguc-Kunt & Levine, 2008) and enable youth, women, and other vulnerable groups to participate in financial systems (Hendriks, 2019; Siddik, 2017). Various studies suggest that open access to financial services can increase the country's economic performance (Ghosh, 2013; Sarma & Pais, 2011).

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Asia has emerged as a worldwide economic powerhouse due to its remarkable economic development. Asia's gross domestic product (GDP) has grown twice as fast as that of industrialized nations since 1970 (Nayyar, 2019). During the 1990s, rapid growth in Asia dramatically reduced absolute poverty. By 2040, half of the world's GDP will come from Asia, resulting in a shift in the world's gravitational axis (McKinsey., 2019). FI activity is an integral part of modern economics. A system of FI improves intermediary financial quality, quantity, efficiency, and ultimately the people's lives (Babajide et al., 2015). FI promotes economic performance by enhancing the lives of the people. According to (Babajide et al., 2015), FI improves savings, investments, and local business. A recent study shows that technological innovations can also enhance access to financial services such as ATMs and prepaid virtual cards (Frame et al., 2018). The population of Asian countries is the youngest in the world. Asia, including China and India, is home to half of all internet users on the planet (McKinsey., 2019). With a profit of USD700 billion in 2018, Asia accounted for 37% of worldwide banking earnings in 2018 (McKinsey., 2019). Due to the economic growth miracle in the region, FI has gained considerable attention among governments, practitioners, and scholars as a potent instrument for poverty alleviation and the prosperity gap.

Despite over a half-century of expertise in meeting the poor's credit requirements and the nation's relative improved economic performance, advancement toward achieving sustainable and inclusive development, particularly the provision of a comprehensive financial sector, has lagged behind actual demands (Gebregziabher & Makina, 2015). For example, Throughout South Asia, 33 percent of people without bank accounts, 45 percent in Central and East Asia, and 55 percent in East Asia (Culpeper, 2012). In East Asia and the Pacific (EAP), there are 1,756 bank accounts per 1,000 individuals, compared to 635 in emerging nations. Despite this, when it regards deposit account prevalence, there is much variety within the area (Gebregziabher & Makina, 2015).

On the other hand, there are 245 bank loans per 1,000 individuals in underdeveloped nations, compared to 272 in East Asia Pacific EAP. Malaysia has 963 bank loans for every 1,000 individuals, whereas Cambodia has only 27 loans for every 1,000 adults (Llanto & Badiola, 2011; The World Bank, 2014). Pakistan has one of the lowest degrees of FI globally and is one of the least financially inclusive countries. People without official or informal financial institutions make up a more significant population. Over 53% of the population does not have access to financial services. A mere 23% are provided formally; 24% rely on informal financial services. A formal bank account is held by only 13% of individuals, compared to 35% in India and 40% in Bangladesh. A similar pessimistic picture emerges from other FI statistics (Zulfiqar et al., 2016).

FI is important, especially for Asian markets whose financial development levels are far behind the levels of western countries' levels and access to credit. The FI supports economic mechanisms for development. The poorest quintile can increase their income by facilitating access to financial services, easing consumption, and decreasing income inequality (Bacchetta & Gerlach, 1997; Jappelli & Pagano, 1989; Ludvigson, 1999) consequently, saving costs can be increased (Dupas & Robinson, 2013). Emerging markets in Asia are the fastest-growing regions globally, but only 33 percent reported possessing a secured credit line (Bhardwaj et al., 2018). The issue has been discussed more widely in recent years. Many countries have integrated FI as part of their inclusive growth strategies (Loukoianova et al., 2018). Currently, very few studies have examined the impact of FI on economic performance for Asian countries (J. Ali & Khan, 2020). Many studies have focused on specific geographic areas like the MENA and OIC countries. In contrast, Asia has largely been overlooked (J. Ali & Khan, 2020).

A study looking at the economic performance of Asia in the context of FI would be fascinating (J. Ali & Khan, 2020). It is diverse in culture, politics, economic size, and economic performance. In terms of population, Asia still contains 60 percent of the world's population and takes up 30 percent of the planet's landmass; it is also the fastest-growing continent in terms of GDP (J. Ali & Khan, 2020). In addition, a study has also been conducted for MENA nations on the connection between FI and economic performance with governance as a moderating factor. According to the study's findings, governance affects FI and economic performance in MENA countries (Emara & El Said, 2021). As part of our study, we will also examine how governance influences the connection between FI and economic performance among Asian economies. In this way, our research contributes to the literature by introducing governance. This variable has been largely ignored in previous studies of the FI-economic performance nexus in Asia.

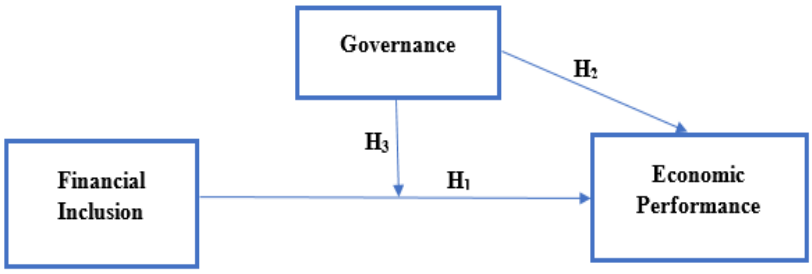
This research aims to examine the relationship between financial inclusion (FI) and economic performance in Asian countries. The study further investigates the role of governance indicators in influencing economic performance and analyzes how governance moderates the relationship between financial inclusion and economic performance across Asian economies. Specifically, the research seeks to determine the impact of financial inclusion on the economic performance of Asia, to explore the role of governance in shaping economic outcomes in Asian countries, and to measure the response of the financial inclusion–economic performance nexus in the presence of governance indicators. In this context, the study addresses several key research questions, including how financial inclusion affects the economic performance of Asian economies, what role governance plays in improving economic performance, and how governance indicators moderate the relationship between financial inclusion and economic performance in Asian countries.

Review of Literature

Special Agent Theory

The specific theory has argued that financial services should be distributed to a section of society. A person hired to provide financial services to those excluded from financial services. According to this theory, Special agents should be highly skilled and bring the excluded population into formal financial services. Hired people tend to have personal relationships with their principal. Financial institutions and technology also play an essential role in the special agent theory (Ozili, 2020). We are more focused on the role of FI in the country's economic growth in our scenario. According to financial-economic literature, expanding banking services such as account holdings and good financial infrastructures, such as ATMs and bank branches in remote areas, promotes entrepreneurial activities, induces savings, and boosts productivity and domestic investment, all of which help the economy. (Ozili, 2020). (Fanta & Makina, 2019) stated that FI ensures that formal financial services are available, accessible, and used by the "unbanked" population, according to the statement. They went on to say that FI plays two critical roles in economic performance: ensuring citizens' access to a variety of formal financial services ranging from credit and savings to insurance and pensions, and ensuring the availability of a diverse set of financial service providers to promote competition, which lowers service costs and boosts entrepreneurial activity and economic performance. Therefore, based on the theory discussed, our research framework would be explained in figure 2.1

Figure 2. 1 Conceptual Framework of the Study



Hypothesis Development

Financial Inclusion and Economic Performance

Researchers have conducted extensive research on FI, including the relationship and economic performance. There has been limited research on the function of FI in the Asian region and its potential effects on economic performance. Thus, we briefly describe the most frequently cited literature, followed by a description of how this literature has been combined. FI had gained much traction since the late 1990s, when policymakers began to pay attention to the plight of socially excluded people. Researchers began to conduct studies on the FI of these same socially excluded people (Kim et al., 2018). Numerous studies on FI have produced contradictory findings regarding the link between FI and economic performance. The first group concluded that increased FI leads to increased economic performance based on several FI metrics. (Wong, 2015), for example, discovered that FI had a favorable effect on economic performance in underdeveloped countries. (Inoue, 2019) Investigated how commercial banks have developed in India and their impact on poverty.

The necessity of a solid financial sector to alleviate inequality and economic instability was underlined by (Ullah et al., 2021). Economies with a reasonable and well-developed monetary sector can sprout quicker over a more extended period, eventually reducing socio-economic imbalances by expanding opportunities for development (World Bank, 2017). A poverty model in Indian states and union territories from 1973 to 2004 was estimated by estimating models of FI and deepening using unbalanced panel data, respectively, for public and private sector banks. Public sector banks display statistically significant negative correlations with poverty ratios, but private sector banks do not. So, public sector banks helped reduce poverty in India due to their breadth and depth that helps in economic performance. (Nkwede, 2015) used time data spanning the years 1981 to 2013 to examine the impact of FI on Nigerian economic development. Multiple regression models based on the Ordinary Least Square method were used to assess the variables' contributions. According to the findings, FI has had a substantially detrimental effect on Nigeria's economic performance. The study's author explains the findings by pointing to Nigeria's high rate of FI among bankable adults. (Sanderson et al., 2018) analyses main determinants of FI in Zimbabwe and credible evidence indicating that it is positively and strongly associated with demographic factors and internet connectivity.

Several studies have shown that FI has a significant impact on economic performance at the national level (Aduda & Kalunda, 2012). They concluded that in various nations, FI stimulates economic performance. FI may be used as a strategic tool to improve rural businesses and the livelihoods of vulnerable Indian farmers, as shown by (Babajide et al., 2015; Dev, 2006; Onaolapo, 2015; Sharma, 2016). According to (N. Mehrotra et al., 2009), access to financial institutions makes it easier to save, move, and invest money, all of which contribute to quicker economic performance. Furthermore, (Swamy, 2010) stressed the need for FI for long-term inclusive development. According to (Lenka & Sharma, 2017), economic performance in India correlates positively with credit availability. Researchers from the second group found that more FI hurts the economy. For example, (Naceur & Ghazouani, 2007) found that the expansion of the banking sector harmed economic growth in the MENA area, indicating that the development of the banking sector harms economic growth.

Owning an account in a financial institution enhances income. It authorizes women, enhances family spending, boosts productive investment, and contributes to faster economic performance (Allen et al., 2012). FI makes it possible to organizations to function inside a well-defined regulatory, organizational, and performance standard framework. It provides economic stability by ensuring the continuation of money in organizations' performance. It aids in distributing financial risks among agents who are capable of beating them without suffering financial harm (Demirguc-Kunt & Levine, 2008).FI increases competitiveness in the market by providing prospective consumers with more options and lower costs. Increased economic and financial depth reduces poverty by promoting inclusive growth and development. On the other side, financial exclusion causes the development of chaotic financial markets ripe for exploitation and financial low literacy rates (Sharma, 2016). Furthermore, (Pradhan et al., 2016) and (Raza et al., 2019) showed that the connection between FI and economic performance is substantially favorable. FI usually has a favorable effect on the degree of economic performance (Anand & Chhikara, 2013; Karpowicz, 2016). (LeChuc et al., 2019) the conducted study from 2004 to 2016, the study examined several 31 Asian nations. Composite indicators are produced based on standardized variables with the (PCA). The findings indicate that increased FI impacts on financial efficiency are negative while economic growth is favorable. (Kim et al., 2017; Pradhan et al., 2016; Raza et al., 2019) Have shown that the association between FI and economic performance is very beneficial.

H1: There is a positive and significant relationship between FI and economic performance in the Asian economies.

Governance and Economic Performance

In order to be felt far beyond self-governing limits, geo-economic consequences necessitate resolving e-government and governance system challenges (De Ceukelaire & Bodini, 2020). Through solid institutional quality procedures and effective e-government, investors can make informed decisions for sustainable development. In order to achieve sustainable development, institutions must be of high-quality governance (Ullah et al., 2021). Based on empirical research, Undeveloped nations imply lower per capita GDP and less governance (Fayissa & Nsiah, 2013). However, more robust governance allows backward countries to make the most of the relatively backward movement to achieve faster economic performance than developed countries (Murrell & Olson, 1991). With a lower WGI, GDP per capita improves according to the rule unit. Compared with a higher WGI, the improvement in GDP per capita is less (Zhang & Wang, 2013). The positive effect of governance indicators on economic performance is becoming more and more critical in countries with lower management quality than in countries with better management quality (Seldadyo et al., 2007). As a result, some scholars believe that the relationship between quality of governance

and economic performance is very complex and inconsistent (Huynh & Jacho-Chávez, 2009). (Law et al., 2013), Between 1990 and 2008, the Granger causality test examined whether the institutional quality was related to economic performance in 60 countries. The study analyzed the ICRG and the World WGI. According to the estimation results, economic performance and institutional development are two-way relationships. This relationship varies across the income distribution spectrum. The economic growth rates of developing countries with better institutional quality are higher, while those with lower incomes are higher. The effect on the economic development of all six aspects of WGIs is examined by studies (Fayissa & Nsiah, 2013; Gani, 2011). (Cooray, 2009) shows that government quality is essential to economic performance.

Furthermore, a bidirectional causation impact between the two variables was discovered in this study. (Zhuang et al., 2010) explored the relationship between governance and growth. The study compares income per capita and inequality to six indicators used by the World Bank to determine institutional quality from 1998 to 2008. Compared to other nations globally, the efficacy of government and law and order in growing Asian economies should be sought as the core development aim. (Balach & Law, 2015) discovered that strong institutional quality promotes Asian nations' economic success. In light of the above discussion, we may conclude the following.

H2: Governance has a positive and significant relationship to the economic performance of Asia.

Financial Inclusion and Governance

There has been very little research on the relationship between FI and governance with economic growth in the past. There has been very little research done on the relationship between these variables. However, the study of the relationship between FI and governance for Asia has not yet taken place intensively. This section will review some past studies that have been done on the impact of FI on economic performance at the nexus of governance.

Malik et al. (2021) For Asian countries, the link between governance, FI, and financial stability was investigated. The study discovered a substantial positive relationship between governance, financial stability, and FI. (Bandura & Dzingirai, 2019) Between 1982 and 2016, researchers looked at the association between FI and economic performance in 27 Sub-Saharan African nations with various institutional frameworks. It is discovered that once a certain degree of institutional quality is achieved, FI may considerably influence economic performance. The FI is favorably connected with a few well-developed institutions, and the institutions and the accompanying FI are complementary. As a result, policymakers and competent authorities must take strict steps to assure adequate institutional development and the region's financial sector's long-term economic success. In 45 countries of Islamic Cooperation, (Hussain et al., 2021) examined the moderating impact of governance on the connection between FI and financial development. The empirical study is based on panel data from 2000 to 2016. The authors employed the GMM and two-stage least-squares estimation methods to create multidimensional findings. The empirical findings of this study demonstrate that FI, governance, and development are all positively associated. The authors' discovery that governance moderates FI while having a considerable beneficial influence on development is intriguing.

A country's governance plays a crucial role in developing its financial sector (Sayılır et al., 2018a). According to (Park & Mercado jr, 2018), the rule of law, a WGI, is significantly positive for FI in thirty-seven Asian countries. In addition to the quality of the regulatory system and the control of corruption, (Ajide, 2017) highlights the benefits of the rule of law on FI. (Hussain et al., 2021) observed the connections among financial literacy, financial freedom, governance, and FI by analyzing cross-sectional and panel data. The results were analyzed using system GMM and OLS estimators on a sample of 98 countries from 2007 to 2018. Financial literacy and governance influence FI positively, as indicated by the estimation results. In addition, governance strongly affects the implementation of economic literacy. (Tran & Dinh, 2021) studied Vietnamese provincial governance and FI at the micro-level. As shown in new research, families in provinces with superior governance are more likely to have banking accounts, bank deposits, and Cards and get larger traditional loans. The research findings suggest that improved governance in provincial areas can be an excellent way to increase FI for rural Vietnamese households and wage earners.

Furthermore, the quality of institutions and governance affects the development of financial markets. Economic growth Governance boosts FI (Law & Azman-Saini, 2012), which boosts banking and finance utilization (Eldomiaty et al., 2020) hence, therefore, resulting in better growth (Sethi & Acharya, 2018).On the other hand, a recent study shows that an absence of proper governance, such as corruption, has a beneficial impact on a country's economic growth; this approach is termed "greasing the wheels" (Hoinaru et al., 2020). In order to promote FI through financial intermediaries by large sections of the population, nations require good governance and an institutional structure of high quality (Eldomiaty et al., 2020). In light of the above discussion, we will examine the following hypothesis in our study.

H3: Governance significantly moderates the relationship between FI and economic performance in Asian countries.

Material and Method

To investigate the relationship between financial inclusion and economic performance in Asian countries, this study constructs econometric models by considering both theoretical concepts and previous empirical findings. The purpose of these models is to analyze the impact of financial inclusion on economic performance, assess the contribution of governance, and examine how governance indicators influence the relationship between financial inclusion and economic performance. To improve the reliability of the analysis, important macroeconomic variables are also included as control variables. The study applies panel data techniques using annual observations from selected Asian economies covering the period 2004–2020. The following model equations are developed to explain the relationship among the study variables.

Model Equations

General equation: EP=f(FI,GR,X) (1)

A general equation describes the function of the variables in this study. Eq. 1 illustrate the function between financial inclusion (FI), governance (GR) and control variables (X).

FI Model: $$\boldsymbol{EP = \alpha + \beta 1FI + \beta 2INF + \beta 3INV + \beta 4TR + e}$$ (2)

The EP model will inspect the connection between FI and the economic performance of Asia.

$$\text{GR Model: } \boldsymbol{EP = \alpha + \beta 1FI + \beta 2GR + \beta 3INF + \beta 4INV + \beta 5TR + e} \quad (3)$$

GR model is used to examine governance effect on economic performance for Asian countries.

Moderator Model:

$$\boldsymbol{EP = \alpha + \beta 1F1 + \beta 2FIGR + \beta 3INF + \beta 4INV + \beta 5TR + e} \quad (4)$$

The moderator model will be used to investigate governance's moderating effect on FI and economic performance for Asian countries. EP represents economic performance as our dependent variable, whereas FI represents financial inclusion as our independent variable. Our moderator variable is GR governance. The control variable is donated as X. INF Inflation, TR Trade Openness, and INV Investment are three control variables in this study. α, β_1, β_2, $\beta 3$, β_4, β_5 are coefficient of equations (eq. 2, 3 and 4). Lastly, e represents error estimation.

Population, Sample-Set and Data Collection

It is a quantitative and applied study utilizing secondary data on Asian economies. The population of this research is Asian countries. We selected 23 Asian countries as a sample set based on data availability. A list of the selected Asian countries as the sample is depicted in Table 1. We utilized panel data for Asian nations from 2004 to 2020 to evaluate the study. The data for FI and economic performance indicators has been compiled from the WDI of the World Bank.

Furthermore, the study used control variables. Data were also obtained from the WDI of the World Bank. The WGIs of the World Bank were used to compile the data for the six governance indicators.

Table 1 List of Selected Asian Countries

Sr.	Economy	Sr.	Economy	Sr.	Economy
1	Armenia	9	Kazakhstan	17	Pakistan
2	Azerbaijan	10	Lebanon	18	Philippines
3	Bangladesh	11	Malaysia	19	Saudi Arabia
4	Brunei Darussalam	12	Maldives	20	Singapore
5	China	13	Mongolia	21	Tajikistan
6	Georgia	14	Myanmar	22	Thailand
7	India	15	Nepal	23	Turkey
8	Israel	16	Oman		

Variables and Measurements

Financial Inclusion Index Development

We have followed (Sarma, 2008) methodology to construct the FI index. We have taken ATMs per 100,000 people, bank branches per 100,000 people, and bank accounts per 1,000 adult proxies (Sarma, 2008). Using the formula below, we can calculate a dimension index for each aspect of FI. (Sethi & Sethy, 2019) also used the below equation 5 to construct FI index for their study to micro-level on Indian states.

$$\text{Di} = \frac{\text{Ai} - \text{mi}}{\text{Mi} - \text{mi}} \quad (5)$$

Di is the dimension index (d) of the i^{th} dimension. Ai represents the actual value, mi represents the minimum value, and MI represents the maximum value of dimension i.

The FI index is computed by dividing the normalized inverse Euclidean distance between that dimension point and its ideal point by the dimension index for each dimension. A dimension's superior value is (1), whereas its worst value is (0). The formula below is used to construct FI indices based on this point.

$$IFI_i = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + .. + (1-d_n)^2}}{\sqrt{n}} \quad (6)$$

Economic Performance Index Development

(Sarma, 2008) introduced the methodology used in computing the FI index discussed above. This will also be used in computing the economic performance index. The index is constructed using four measures of economic performance, which are Foreign direct investment (FDI), GDP per capita (constant 2010 US$), education (Primary education pupils), and employment (The labor force participation rate, total (% of total population ages 15+).

All three dimensions will be measured separately based on the following equation that makes sure $0 \leq di \leq 1$; Using the formula below, the first step is to calculate a dimension index for each dimension of economic performance.

$$\text{Di} = \frac{\text{Ai} - \text{mi}}{\text{Mi} - \text{mi}} \qquad (7)$$

where d_i is the dimension index (d) for the ith dimension. Ai is the dimension i's real value, mi is the dimension i's minimum value, and Mi is the dimension i's maximum value. The EPI index for Asia would be generated after computing the normalized inverse Euclidean distance using the following equation.;

$$\boldsymbol{EPI_i = 1 - \frac{\sqrt{(1-d_1)^2+(1-d_2)^2+..+(1-d_n)^2}}{\sqrt{n}}} \qquad (8)$$

The index will fall between zero and one, depending on the number of dimensions used. A country with more FI will have an EPI value closer to one. In contrast, a country with minor economic inclusion will have an EPI value closer to zero.

Governance (GR) Index Development

The governance (GR) index must be calculated to check the moderating governance effect with FI and economic performance. In that instance, we will compute the GR index using PCA. PCA is a multivariate dimensionality reduction approach (Bartholomew, 2010) that allows a small number of variables to express a considerable amount of data (Dray & Josse, 2015). Using this approach, a set of highly correlated variables can also be turned into a group of uncorrelated variables (Asongu et al., 2019). In order to generate the GR index, we will create factor loading for each indicator of governance and then multiply each indicator's value by factor loading sum and divide by factor loading sum.

Other Variables (Control Variables)

Investment is measured by gross fixed capital formation (% of GDP). World development indicators are used to collect gross fixed capital formation data.

The trade openness can be constructed by calculating Trade (% of GDP). WDI (World Development Indicators) of the World Data Bank provides trade openness data as a percentage of GDP. As a proxy for inflation, consumer prices (annual%) are used. Inflation data is also derived from the WDI. Tables 2 & 3 provide a detailed description and variable measurement.

Table 2 Variables & Measurements (A)

Variables	Nature	Proxy	Measurement	Reference	Data Source
Financial Inclusion	Impact Variable (IV)	Financial institution access	ATMs per 100,000 adults	(Emara & El Said, 2021), (Sarma, 2008)	WDI (world development indicators of world bank)
			Commercial bank branches for 100,000 adults.		
			Bank accounts per 1000 adults		
		GDP	Per capita GDP (constant 2010 US$)	(Sarma, 2008)	
Economic Performance	Target Variable (DV)	FDI	Foreign direct investment inflows (% of GDP)		
		Employment	Labor force participation rate, total (% of total population ages 15+)		
		Education	Number of primary level students		

Table 3 Variables & Measurements (B)

Governance (Proxies)	Measurement	Reference	Data Source
Voice and Accountability	To the degree that people of a nation may engage in the government's choosing mechanism, freedom of speech, affiliation, and independent press.	(Emara & Jhonsa, 2014)	(WGI) World governance indicators of World bank
Political Stability and Absence of Violence/Terrorism	Politically uncertainty & violent condition, involving terrorist activities.	(Naceur & Kandil, 2009)	
Government Effectiveness	It includes the quality and freedom of public infrastructure and political influences that impact local government. The effectiveness of policy development and execution and administration credibility promises.	(Kaufmann et al., 2005)	
Regulation Quality	Government's capacity to develop and execute good private industry rules and regulations.	(Rajan & Zingales, 2003)	
The Rule of Law	To the degree that market participants trust and comply with social norms as well as the effectiveness of enforcing contracts	(Kaufmann, 2007), (Easterly, 1999)	
Control of Corruption	Public authority, including significant kinds of corruption, could be exploited for private gain	(Beck et al., 2004), (Mauro, 1998)	
Control Variables			
Inflation	consumer prices (annual %)	(Emara & El Said, 2021)	WDI (world development indicators of world bank)
Investment	gross fixed capital formation (%age of GDP)		
Trade Openness	It concludes the sum of imports and exports & divided with GDP $x + \frac{M}{GDP}$*100		

Results and Analysis

Preliminary Tests for Panel Data Sets

Cross-Sectional Dependence (CD) Tests

Notes: Under the null hypothesis of cross-section independence, CD ~ N (0,1)

Table 4 Cross-Sectional Independence Tests

Variables	FI	EP	INF	INV	TR	CC	GE	PSA	RQ	RL	VA
CD-stats	31.25*	10.16*	23.55*	0.68	7.44*	5.75*	3.33*	4.88*	1.56	8.38*	-0.30
Prob-value	0.00	0.00	0.00	0.494	0.00	0.00	0.001	0.00	0.120	0.00	0.767

Residuals cross-sectional independence

	Pesaran CD test	Friedman's test	Frees' test
Prob-value	5.298* 0.00	3.309* Alpha at 1%= 0.2928	46.343* 0.002

Note: * shows 1% level of significance

Before evaluating the panel unit root tests, the CD test is used to discover cross-sectional dependencies (Liu et al., 2018). (Friedman, 1937) Moreover, (Frees, 1995) and the parametric testing procedure proposed by (H. Pesaran, 2004) is used to calculate the degree of cross-sectional dependency between FI, governance, and economic performance within the Asian countries panel. In Table 4, CD tests are shown, preliminary estimations that help detect cross-sectional correlations between variables. CD tests are employed to determine the correlation of input and output variables in Asian countries. CD examines the null hypothesis, which asserts that all economies (cross-sections) are independent. Despite CD test findings, research reject H0, suggesting that Asian economies are significantly cross-sectionally dependent.

Panel Unit Root Test

Null of CADF= Variable (FI) has unit root process

CIPS= H0 (homogeneous non-stationary): bi = 0 for all I i.e., unit root

Table 5 Panel Unit Root Tests

Variable	CADF	Variable	CADF	Variable	CIPS	Variable	CIPS
FI	-5.664*	CC	-3.163*	**FI**	-1.690**	CC	-2.413*
	(0.00)		(0.001)		[-1.58]		[-2.32]
EP	-0.078	GE	-3.783*	EP	-1.641*	GE	-2.545*
	(0.469)		(0.000)		[-1.58]		[-2.32]
ΔEP	-11.013*	PSA	-2.230*	-	-	PSA	-2.214**
	(0.000)		(0.013)				[-2.15]
INF	-3.253*	RQ	-3.303*	INF	-2.187*	RQ	-2.443*
	(0.001)		(0.000)		[-1.76]		[-2.32]
INV	-1.068	RL	-2.367*	INV	-1.380	RL	-2.243**
	(0.143)		(0.009)		[-1.47]		[-2.15]
ΔINV	-6.104*	VA	1.171	ΔINV	-3.161*	VA	-1.491
	(0.000)		(0.879)		[-1.76]		[-2.07]
TR	-0.304	ΔVA	-7.882*	TR	-1.411	ΔVA	-3.416*
	(0.381)		(0.000) *		[-1.47]		[-2.32]
				ΔTR	-3.141*		
					[-1.76]		

The CD test findings indicate that those Asian nations are cross-sectionally reliant. As a result, the traditional panel unit root tests are ineffective for investigating integration sequences (Hafeez et al., 2019). In order to find the order of integration, 2nd generation panel unit- root tests, such as (CIPS) and (CADF) are used (M. H. Pesaran, 2007). The results of both unit root tests in Table 5 imply that all variables under consideration are stationary at level.

Governance (GR) Index Development

PCA is used to construct the GR index. The PCA was introduced by (Pearson, 1901). To avoid the issue of multi-collinearity and evaluate robustness, PCA is used to build the index (Aluko & Ibrahim, 2020). In this study, six governance indicators are used to construct the index. These indicators include CC, GE, PSA, RQ RL, and VA. Equation 5.1 is used to construct the factor loading of each indicator of GR.

$$\sum_{i=1}^{6} FL\,i \times GRi \qquad (9)$$

In this equation, i represents sub-dimensions of GR, such as GR1 = CC, GR2 = GE, GR3 = PSA, GR4 = RQ, GR5 = GRRL, and GR6 VA. Where FLi is the weight of each indicator, which may be determined using the formula below.

$$\text{FLi} = \frac{vi}{\sum_{i=1}^{6} vi} \qquad (10)$$

Vi is the value of each indicator. The PCA of governance indicators for selected Asian countries is presented in Table 5, containing 391 observations and six composite and eigenvector values. Component 1 (CC) explained the 4.36 variation in GR variables, Comp 2 (GE) explained the 1.00 variation, Component 3 (PSA) explained the 0.43 variation, Component 4 (RQ) explained the 0.10 variation, Component 5 (RL) explained the 0.05 variation, and Component 6 (VA) explained the 0.03 variation. Thus, all the components are relevant to constructing the GR index. Additionally, factor loading values are CC explaining 72.69 %, GE 89.5 %, PSA 96.6 %, RQ 98.38%, RL 99.37%, and VA 100%. The GR index is calculated by multiplying each indicator's value by the calculated factor loading value and summing all the values, dividing it by the sum of all factor loading. Equation 9 is used to calculate the index.

Table 6 presents the results of Principal Component Analysis (PCA) conducted for the governance indicators included in the study. The main objective of applying PCA is to reduce the dimensionality of multiple governance variables and combine them into a smaller set of components while preserving the maximum possible variation in the data.

The first section of the table reports the eigenvalues, differences, proportion of variance, and cumulative proportion explained by each component. The results show that the first principal component has an eigenvalue of 4.36124 and explains approximately 72.69% of the total variation among the governance indicators. The second component explains an additional 16.83% of the total variance. Together, the first two components account for nearly 89.51% of the cumulative variation, indicating that most of the information contained in the governance variables is captured within these components. The remaining components contribute only a very small proportion of the total variance, suggesting relatively lower explanatory importance.

The second section of the table presents the factor loadings of individual governance indicators. The results indicate that Rule of Law (RL), Control of Corruption (CC), Regulatory Quality (RQ), and Government Effectiveness (GE) have relatively high positive loadings, showing their strong contribution to the overall governance structure. In contrast, Political Stability and Absence of Violence (PSA) and Voice and Accountability (VA) exhibit comparatively lower factor loadings, indicating a smaller contribution to the composite governance index.

Overall, the PCA findings suggest that the governance indicators are closely associated with one another and can effectively be represented through a composite governance measure for subsequent econometric estimation and analysis.

$$GR = \frac{\sum_{i=1}^{6} FL_i * GR_i}{\sum_{i=1}^{6} FL_i} \qquad (11)$$

$$GR \quad \frac{0.4610 * \text{cc} + 0.4603 * \text{ge} + 0.3008 * \text{psa} + 0.4605 * \text{rq} + 0.4686 * \text{rl} + 0.2312 * \text{va}}{0.4610 + 0\ 4603 + 0.3008 + 0.4605 + 0.4686 + 0.2312}$$

Table 6 Principal Components (Eigenvectors)

Component	Eigenvalue	Difference	Proportion	Cumulative
CC	4.36124	3.3517	0.7269	0.7269
GE	1.00954	.579536	0.1683	0.8951
PSA	.430001	.328255	0.0717	0.9668
RQ	.101745	.0418294	0.0170	0.9838
RL	.059916	.0223549	0.0100	0.9937
VA	.037561	.	0.0063	1.0000

Variables	Factor Loading
CC	0.4610
GE	0.4603
PSA	0.3008
RQ	0.4605
RL	0.4686
VA	0.2312

Panel Regression Estimations Results and Discussion

In our data, there is no unit root issue. So, we can now go to DK regression to examine the long-run connection between the variables. The DK estimating approach is used to calculate the influence of FI on economic performance, with governance acting as a moderator for a panel of 23 Asian nations. We also investigate the association between six indices of governance moderation and FI and economic performance. The DK method estimation approach employs mean scores as from product of explanatory variables including residuals, which are then allocated as loads to calculate HAC prediction models using standard errors, that have recently included cross-sectional dependency for robust estimators(Jalil, 2014; Özokcu & Özdemir, 2017). Table 5.6 presents the results of FI on EP and the moderating effect of GR indicators using the DK standard error panel regression method. The table above shows the results of the four models used in this study.

Financial Inclusion Model Results and Discussion

In table 7, our first model, FI, is used to analyze the effect of FI on Asian countries' economic performance. It was determined that FI has a positive and significant effect on EP at the significance level of 0.0816 (p-value 0.05). The results showed that a 1% increase in FI would result in an 8.16 % increase in Asian countries' economic performance. In addition, the diagnostic statistics results, such as the Wald test, are 19.08 (p-value 0.00). As a result, this model is justified, and all of the instruments are valid, thereby rejecting the null hypothesis (H_0).

Control variables such as inflation are shown to have a negative and significant impact on the economic performance of Asian countries at the (0.009) level of significance, which means low inflation will increase the performance of Asian economies. In contrast, control variables like investment and trade openness are insignificant. As a result of the empirical evidence, this study accepts the H1 that the FI positively impacts the EP of Asia.

Governance (GR) Model Results and Discussion

In our second model, we analyze how governance affects the economic performance of Asian countries using the GR model in table 7 At a significance level of 0.010, it was determined that GR impacts EP significantly, and the p-value is 0.05. It was found that a 1% increase in GR would result in a 10% increase in economic performance for Asian countries. Further, diagnostic statistics, such as the Wald test, result in a score of 26.17 (p-value 0.00). Therefore, this model is justified, and all instruments are valid, thereby rejecting the null hypothesis (H_0).

Trade openness and inflation, for example, have adverse but substantial effects on economic performance in this model, with significance levels of (0.046) and (0.10),

respectively. Conversely, a control variable like the investment is found to be insignificant. These findings are also in line with previous research. As a result of the findings, governance positively impacts Asian economic performance. This study accepts hypothesis H2, that governance positively impacts Asia's economic performance.

Table 7 Driscoll-Kraay (DK) Standard Error Method for Panel Regression

	Dependent variable = EP								
Variable	FI model	GR model	FIGR model	Governance indicators Models (GIM model)					
	FI	GR	FI*GR	FI*CC	FI*GE	FI*PSA	FI*RQ	FI*RL	FI*VA
FI	0.0816*** (0.05)	0.080*** (0.10)	0.062*** (0.09)	0.106* (0.03)	0.082*** (0.10)	0.118** (0.03)	0.089* (0.00)	0.107** (0.02)	0.117** (0.02)
GR	-	0.010** (0.05)	-	-	-	-	-	-	-
FI*GR	-	-	0.027** (0.04)	-	-	-	-	-	-
FI*CC	-	-	-	0.045 (0.16)	-	-	-	-	-
FI*GE	-	-	-	-	0.008 (0.82)	-	-	-	-
FI*PSA	-	-	-	-	-	0.0455*** (0.07)	-	-	-
FI*RQ	-	-	-	-	-	-	0.042 (0.18)	-	-
FI*RL	-	-	-	-	-	-	-	0.061*** (0.10)	-
FI*VA	-	-	-	-	-	-	-	-	0.0504*** (0.06)
INF	-0.002* (0.009)	-0.002** (0.046)	-0.002** (0.037)	-0.002** (0.03)	-0.003* (0.00)	-0.002* (0.01)	-0.002** (0.02)	-0.002** (0.05)	-0.002* (0.01)
INV	0.0013 (0.296)	0.0013 (0.248)	0.0015 (0.227)	0.0014 (0.27)	0.0012 (0.34)	0.0005 (0.59)	0 .001 (0.24)	0.001 (0.23)	0.0015 (0.11)
TR	-0.0001 (0.573)	-0.001*** (0.10)	-0.001*** (0.10)	-0.001 (0.27)	-0.0001 (0.64)	-0.0002 (0.16)	-0.0001 (0.29)	-0.0002 (0.20)	-0.0001 (0.28)
constant	0.367* (0.00)	0.362* (0.00)	0.365* (0.00)	0 .364* (0.00)	0.366* (0.00)	0.391* (0.00)	0.361* (0.00)	0.361* (0.00)	0.359* (0.00)
Countries	23	23	23	23	23	23	23	23	23
Wald test	19.08* (0.00)	26.17* (0.00)	10.79* (0.00)	17.02* (0.00)	18.30* (0.00)	45.38* (0.00)	14.34* (0.00)	13.18* (0.00)	19.08* (0.00)
RMSE	0.1401	0.1397	0.1393	0.1397	0.1402	0.1393	0.1398	0.1394	0.1392
Observation	391	391	391	391	391	391	391	391	391

Note: * shows 1% level of significance, ** shows 5% level of significance, *** shows 10% level of significance

Overall Moderating Effect of Governance

In table 7, Our third model FIGR examines the overall moderating effect of governance on FI and economic performance for Asia. The relationship between FI and economic performance is positively moderated by governance at a significant level of 0.04. Better governance in Asia is associated with better economic performance in the region. Also, control variables such as Trade openness and inflation have negative but significant impacts on economic performance in the presence of moderated effects of governance at significance levels of (0.037) and (0.10), respectively. Also, control variables such as Trade openness and inflation have negative but significant impacts on economic performance in the presence of moderated effects of governance at significance levels of (0.037) and (0.10), respectively. Investment has no significant impact on economic performance. Additionally, diagnostic statistics, such as the Wald test, result in a score of 10.79 (p-value 0.00) in the model. Due to the justified nature of this model and the validity of all instruments, H0 is rejected, and the analysis adopts hypothesis H3, which states that governance moderates the link between FI and Asian economic performance.

Indicators Wise Moderating Effect of Governance

Governance indicators model GIM presents the influence of each indicator separately on FI and EP relationships in table 7. According to the study results, the rule of law, voice and accountability, political stability and absence of terrorism has significantly moderated the relationship between FI and EP with a significant level of (p-value 0.10), (p-value 0.06) and (p-value 0.07), respectively. Whereas control of corruption, government effectiveness, and regulatory quality were found insignificant.

Conclusions and Implications

This study examined the impact of financial inclusion on economic performance in 23 Asian countries over the period 2004–2020, while also investigating the moderating role of governance indicators. Secondary data were collected from the World Bank database. To measure the key variables, the study developed composite indices for financial inclusion (FI) and economic performance (EP) using the Euclidean Distance Method. In addition, a governance (GR) index was constructed through Principal Component Analysis (PCA) to evaluate the moderating effect of governance on the relationship between financial inclusion and economic performance. Inflation, investment, and trade openness were incorporated as control variables in the analysis. The Driscoll-Kraay (DK) regression approach was applied to estimate the long-run relationship among the variables under study. The empirical findings reveal that financial inclusion has a positive and statistically significant impact on economic performance in Asian economies. The results suggest that greater access to financial services improves economic activities, enhances investment opportunities, and contributes to overall economic growth.

The study further indicates that governance plays an important role in strengthening economic performance by promoting a stable business environment, improving institutional quality, and reducing policy inefficiencies. The moderation analysis shows that Political Stability and Absence of Violence (PSA) positively and significantly moderates the relationship between financial inclusion and economic performance. Political stability supports sustainable development by creating a secure environment for investment and economic activities. Similarly, Rule of Law (RL) also demonstrates a positive moderating effect, indicating that strong legal systems and effective enforcement mechanisms enhance the contribution of financial inclusion toward economic growth. Voice and Accountability (VA) was also found to positively influence economic performance, suggesting that democratic participation, transparency, and public involvement in governance contribute to stronger economic outcomes. On the other hand, the moderating effects of Control of Corruption (CC), Government Effectiveness (GE), and Regulatory Quality (RQ) were found to be statistically weak in influencing the relationship between financial inclusion and economic performance in Asian economies. Overall, the study concludes that financial inclusion and good governance collectively play a significant role in improving economic performance across Asian countries.

Recommendations

Based on the findings of the study, several policy recommendations can be proposed to improve financial inclusion and economic performance in Asian countries. First, governments should formulate comprehensive national strategies aimed at improving access to financial services for individuals, businesses, and institutions. Expanding financial infrastructure through an increased number of bank branches, automated teller machines (ATMs), and digital banking facilities can help enhance financial inclusion across both urban and rural areas. In addition, policies that encourage savings behavior and improve public awareness regarding formal financial services may further strengthen economic participation and financial stability.

Furthermore, since governance was found to play an important role in economic performance, policymakers should focus on improving institutional quality and transparency. Strong measures should be adopted to reduce corruption, enhance government effectiveness, and ensure the implementation of clear and consistent regulations. Maintaining political stability, strengthening the rule of law, and promoting accountability and democratic participation are also essential for creating a favorable economic environment. Improvements in these governance dimensions can increase investor confidence, support sustainable development, and strengthen the positive impact of financial inclusion on economic performance in Asian economies.

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Appendix

Table 4 List of Selected Asian Countries

Sr.	Economy	Sr.	Economy	Sr.	Economy
1	Armenia	9	Kazakhstan	17	Pakistan
2	Azerbaijan	10	Lebanon	18	Philippines
3	Bangladesh	11	Malaysia	19	Saudi Arabia
4	Brunei Darussalam	12	Maldives	20	Singapore
5	China	13	Mongolia	21	Tajikistan
6	Georgia	14	Myanmar	22	Thailand
7	India	15	Nepal	23	Turkey
8	Israel	16	Oman		

Table 5 Variables & Measurements (A)

Variables	Nature	Proxy	Measurement	Reference	Data Source
Financial Inclusion	Impact Variable (IV)	Financial institution access	ATMs per 100,000 adults	(Emara & El Said, 2021), (Sarma, 2008)	WDI (world development indicators of world bank)
			Commercial bank branches for 100,000 adults.		
			Bank accounts per 1000 adults		
		GDP	Per capita GDP (constant 2010 US$)	(Sarma, 2008)	
Economic Performance	Target Variable (DV)	FDI	Foreign direct investment inflows (% of GDP)		
		Employment	Labor force participation rate, total (% of total population ages 15+)		
		Education	Number of primary level students		

Table 6 Variables & Measurements (B)

Governance (Proxies)	Measurement	Reference	Data Source
Voice and Accountability	To the degree that people of a nation may engage in the government's choosing mechanism, freedom of speech, affiliation, and independent press.	(Emara & Jhonsa, 2014)	(WGI) World governance indicators of World bank
Political Stability and Absence of Violence/Terrorism	Politically uncertainty & violent condition, involving terrorist activities.	(Naceur & Kandil, 2009)	
Government Effectiveness	It includes the quality and freedom of public infrastructure and political influences that impact local government. The effectiveness of policy development and execution and administration credibility promises.	(Kaufmann et al., 2005)	
Regulation Quality	Government's capacity to develop and execute good private industry rules and regulations.	(Rajan & Zingales, 2003)	
The Rule of Law	To the degree that market participants trust and comply with social norms as well as the effectiveness of enforcing contracts	(Kaufmann, 2007), (Easterly, 1999)	
Control of Corruption	Public authority, including significant kinds of corruption, could be exploited for private gain	(Beck et al., 2004), (Mauro, 1998)	
Control Variables			
Inflation	consumer prices (annual %)	(Emara & El Said, 2021)	WDI (world development indicators of world bank)
Investment	gross fixed capital formation (%age of GDP)		
Trade Openness	It concludes the sum of imports and exports & divided with GDP $x + \frac{M}{GDP}$*100		

Table 4 Cross-Sectional Independence Tests

Variables	FI	EP	INF	INV	TR	CC	GE	PSA	RQ	RL	VA
CD-stats	31.25*	10.16*	23.55*	0.68	7.44*	5.75*	3.33*	4.88*	1.56	8.38*	-0.30
Prob-value	0.00	0.00	0.00	0.494	0.00	0.00	0.001	0.00	0.120	0.00	0.767
	Residuals cross-sectional independence										
	Pesaran CD test		**Friedman's test**		**Frees' test**						
Prob-value	5.298* 0.00		3.309* Alpha at 1%= 0.2928		46.343* 0.002						

Table 5 Panel Unit Root Tests

Variable	CADF	Variable	CADF	Variable	CIPS	Variable	CIPS
FI	-5.664*	CC	-3.163*	**FI**	-1.690**	CC	-2.413*
	(0.00)		(0.001)		[-1.58]		[-2.32]
EP	-0.078	GE	-3.783*	EP	-1.641*	GE	-2.545*
	(0.469)		(0.000)		[-1.58]		[-2.32]
ΔEP	-11.013*	PSA	-2.230*	-	-	PSA	-2.214**
	(0.000)		(0.013)				[-2.15]
INF	-3.253*	RQ	-3.303*	INF	-2.187*	RQ	-2.443*
	(0.001)		(0.000)		[-1.76]		[-2.32]
INV	-1.068	RL	-2.367*	INV	-1.380	RL	-2.243**
	(0.143)		(0.009)		[-1.47]		[-2.15]
ΔINV	-6.104*	VA	1.171	ΔINV	-3.161*	VA	-1.491
	(0.000)		(0.879)		[-1.76]		[-2.07]
TR	-0.304	ΔVA	-7.882*	TR	-1.411	ΔVA	-3.416*
	(0.381)		(0.000) *		[-1.47]		[-2.32]
				ΔTR	-3.141*		
					[-1.76]		

Table 6 Principal Components (Eigenvectors)

Component	Eigenvalue	Difference	Proportion	Cumulative
CC	4.36124	3.3517	0.7269	0.7269
GE	1.00954	.579536	0.1683	0.8951
PSA	.430001	.328255	0.0717	0.9668
RQ	.101745	.0418294	0.0170	0.9838
RL	.059916	.0223549	0.0100	0.9937
VA	.037561	.	0.0063	1.0000

Variables	Factor Loading
CC	0.4610
GE	0.4603
PSA	0.3008
RQ	0.4605
RL	0.4686
VA	0.2312

Table 7 Driscoll-Kraay (DK) Standard Error Method for Panel Regression

Dependent variable = EP									
Variable	FI model	GR model	FIGR model	Governance indicators Models (GIM model)					
	FI	GR	FI*GR	FI*CC	FI*GE	FI*PSA	FI*RQ	FI*RL	FI*VA
FI	0.0816*** (0.05)	0.080*** (0.10)	0.062*** (0.09)	0.106* (0.03)	0.082*** (0.10)	0.118** (0.03)	0.089* (0.00)	0.107** (0.02)	0.117** (0.02)
GR	-	0.010** (0.05)	-	-	-	-	-	-	-
FI*GR	-	-	0.027** (0.04)	-	-	-	-	-	-
FI*CC	-	-	-	0.045 (0.16)	-	-	-	-	-
FI*GE	-	-	-	-	0.008 (0.82)	-	-	-	-
FI*PSA	-	-	-	-	-	0.0455*** (0.07)	-	-	-
FI*RQ	-	-	-	-	-	-	0.042 (0.18)	-	-
FI*RL	-	-	-	-	-	-	-	0.061*** (0.10)	-
FI*VA	-	-	-	-	-	-	-	-	0.0504*** (0.06)
INF	-0.002* (0.009)	-0.002** (0.046)	-0.002** (0.037)	-0.002** (0.03)	-0.003* (0.00)	-0.002* (0.01)	-0.002** (0.02)	-0.002** (0.05)	-0.002* (0.01)
INV	0.0013 (0.296)	0.0013 (0.248)	0.0015 (0.227)	0.0014 (0.27)	0.0012 (0.34)	0.0005 (0.59)	0 .001 (0.24)	0.001 (0.23)	0.0015 (0.11)
TR	-0.0001 (0.573)	-0.001*** (0.10)	-0.001*** (0.10)	-0.001 (0.27)	-0.0001 (0.64)	-0.0002 (0.16)	-0.0001 (0.29)	-0.0002 (0.20)	-0.0001 (0.28)
constant	0.367* (0.00)	0.362* (0.00)	0.365* (0.00)	0 .364* (0.00)	0.366* (0.00)	0.391* (0.00)	0.361* (0.00)	0.361* (0.00)	0.359* (0.00)
Countries	23	23	23	23	23	23	23	23	23
Wald test	19.08* (0.00)	26.17* (0.00)	10.79* (0.00)	17.02* (0.00)	18.30* (0.00)	45.38* (0.00)	14.34* (0.00)	13.18* (0.00)	19.08* (0.00)
RMSE	0.1401	0.1397	0.1393	0.1397	0.1402	0.1393	0.1398	0.1394	0.1392
Observation	391	391	391	391	391	391	391	391	391