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Econometric Insights into Economic Growth, Poverty and Social Protection in Asia: A Fresh Evidence

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ABSTRACT

The current research undertakes an empirical investigation into the effects of social protection and poverty on economic growth across varying income levels in the Asian context employing a balanced panel dataset covering the years 2005 to 2021. For this purpose, this analysis employs fixed and random effects estimations guided by the outcomes of the Hausman test. The empirical outcomes reveal distinct patterns across income groups as poverty exerts a negative and significant impact on economic growth in high-income, upper-middle-income, lower-middle-income, and overall Asian nations. Social protection exhibits positive and significant effect on economic growth in all income groups and in overall Asia except high income countries where it is insignificant. Labor has positive significance and governance has a negative significant impact on economic growth in all income groups and overall Asia except upper middle-income countries where both these indicators are insignificant. Capital is positive yet insignificant in all income groups and overall Asia except upper middle-income countries where it is positive and has significant impact on economic growth. Consequently, the study advocates for an increase in social security spending to bolster consumption for the sake of poverty reduction and consequently foster economic growth.

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1. Introduction

Human civilization has always been characterized by periods of invention, technical advancement, and commerce, all of which have contributed to economic growth[1] (Mokyr, 2009). Societies have always worked to raise living standards and boost production, from the agricultural revolution to the industrial revolution and beyond (Acemoglu, Johnson, & Robinson, 2001). Although labor and capital are still regarded as the two main drivers of EG, economists have realized throughout time how important it is to include other factors in order to fully represent the complexity of economic growth. Some additional variables that have been added over time are as follows: human capital which includes labor force knowledge, skills, and capacities, has become a crucial factor in determining EG. Education, training, and healthcare expenditures all help to build human capital, which boosts creativity and productivity (Lucas Jr, 1988). Technological innovation is a driven force in expanding EG by boosting productivity, cutting expenses, and opening up new markets for both production and consumption, technological innovation (Romer, 1990). Maintaining long-term growth requires both the implementation of new technology and spending in research and development (R&D). To support economic activity and to foster growth, there must be an adequate infrastructure, which includes utilities, communication networks, and transportation networks (Aschauer, 1989). Infrastructure expenditures increase connectivity, lower transaction costs, and draw funding from the private sector. Globalization and international commerce have grown in importance as drivers of EG,

1 The short form of economic growth is EG.

allowing nations to access new markets and excel in areas where they have a comparative advantage (Rodrik, 1998). Liberalization of trade and incorporation into international value chains have the potential to boost innovation and productivity. Investment, entrepreneurship, and economic progress are all made possible in large part by financial market efficiency and access to capital (Levine, 1997). Financial systems that are in good working order distribute resources to profitable ventures, promote creativity, and reduce risks. Natural resource endowments, including minerals, energy, and agricultural land, can support EG by generating income through exports and fostering industrial development (Sachs & Warner, 1995). Nonetheless, in order to prevent resource depletion and environmental damage, it is essential to handle natural resources sustainably.

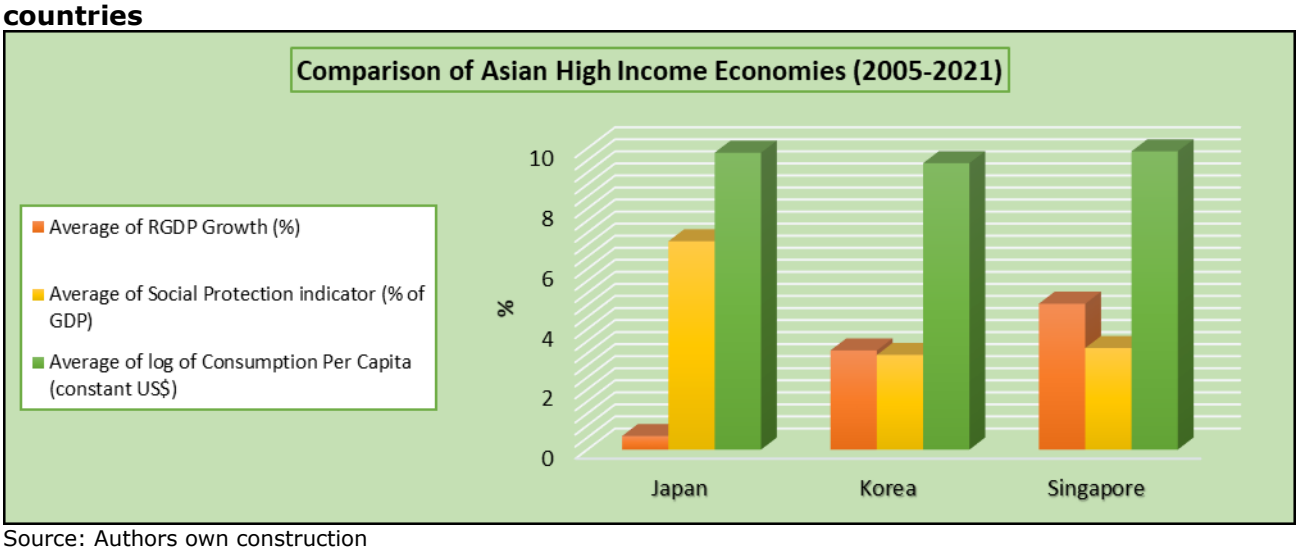
Over the past few decades, economy of Asia has grown remarkably, making the area a key contributor to the extension of the global economy. The following significant numbers illustrate the growth trajectory: in high income countries Japan with a long history of economic growth is one of the biggest high-income nations in Asia. Japan's GDP growth rate was 2% in FY2023 (International Monetary Fund, 2024). Quick economic growth has been witnessed in South Korea, dubbed the "Miracle on the Han River." The GDP growth rate of South Korea was around 1.4% in FY2023 (International Monetary Fund, 2024). Singapore, a wealthy city-state, has experienced remarkable economic expansion propelled by commerce and banking. Singapore's GDP was 1.1% in FY2023 (International Monetary Fund, 2024). In upper middle income countries China boasts the second-largest nation in the world because to its remarkable EG. China's GDP growth rate was around 5% in FY2023 (IMF, 2024). Malaysia's economy has grown steadily, propelled by exports, services, and manufacturing. Malaysia's GDP growth rate was 4% in FY2023 (International Monetary Fund, 2024). Thailand's economy has grown rapidly, especially in the travel and tourism, industrial, and agricultural sectors. Thailand's GDP growth rate was 2.7% in FY2023 (International Monetary Fund, 2024). Indonesia has grown significantly in recent years. Indonesia's GDP growth rate was 5% in FY 2023 (International Monetary Fund, 2024). While in lower middle income economies Philippines, India, Bangladesh, Cambodia and Viet Nam GDP growth rates were 5.3%, 6.3%, 6%, 5.6% and 4.7% in FY2023 (International Monetary Fund, 2024). The presence of poverty is a hindrance to economic growth. Access to necessities like food, lodging, and garments is restricted, which additionally makes individuals feel denied. Their essential right to choose and act is abused. If they are not so destitute they can enjoy it freely. Needy and poor individuals ordinarily come up short on political clout and have less impact to change regulations that straightforwardly influence their day-to-day routines. They are more vulnerable to unforeseen increase in inflation and changes in the pace of economic growth. Subsequently, when financial emergencies or regular disasters strike, they experience more noteworthy misfortunes and expenses than the rich(Dhivya et al., 2023; Ragmoun, 2023; Ragmoun & Ben-Salha, 2024).

Asia's varied socioeconomic environment is reflected in the complex and diversified problem of poverty circumstances. Asia's large population reflects a range of economic conditions, from developing nations with thriving economies to impoverished areas (World Bank, 2019). Bestowing to the Asian Development Bank (Bank, July 2019), income inequality is a persistent problem that is seen across urban and rural differences as well as among various socioeconomic strata. Due to the lack of access to basic amenities and reliance on unstable agricultural incomes, rural poverty endures (United Nations Development Programme., 2019, February 22). Urban poverty has been made worse by the spread of slums and informal settlements brought about by fast urbanization (Bank, 2019). The poor's situation is made worse by their vulnerability to natural catastrophes, with earthquakes, floods, and other calamities disproportionately affecting Asia (World Bank, 2019). Many people still struggle to have access to high-quality healthcare and education, which feeds poverty cycles that last across generations (UNESCO, 2019). Gender inequality is still present, with women and girls encountering more obstacles to social inclusion and economic development (UN Women, 2021, August 3). Furthermore, attempts to reduce poverty and worsen humanitarian crises are hampered by conflict, political unrest, and issues with governance in a number of Asian nations (UNDP, 2020). Now the question arises what will be its cure? How poverty can be abridged and at the same time growth can be increased? The answer of this question lies in the adoption of social protection measures. As social protection can be used as a catalyst in achieving the goal of reducing poverty and increasing EG. Because social protection helps needy households and is also an effective engine of economic growth, it is frequently seen as a development plan with a twofold dividend

policy. Social protection has been seen as a means of guaranteeing one's livelihood, a human right and a reaction to risk in policy. Notwithstanding, social security is frequently viewed collectively as public and private measures that safeguard and protect household and individuals from the most serious pressures and shocks. It stands apart because it goes above or more to support strong livelihoods. Yet, pretty much every government action may be viewed as having some kind of circuitous association with the social well-being net. This perspective characterizes social protection as including a large number of strategies related to improvement, for example, medical care, pension plans, educational policies, and many others development related measures. Accordingly, to fight poverty and advance economic development, it is vital to take an interest in individuals' well-being, education, and training(Ahmed, Azhar, & Mohammad; Mohammad, 2015).

In Asia, social protection refers to a broad category of laws and initiatives designed to give economically disadvantaged groups support and stability. These programs might include cash transfers, social insurance, food aid, healthcare coverage, and job programs, and they differ between nations. In order to encourage inclusive growth and lower poverty in the area, the Asian Development Bank (ADB) places a strong emphasis on social protection (Asian Development Bank, 2019, July). In order to combat poverty and inequality, nations like China have put in place comprehensive social support programs, such as the Urban Lowest Living Standard Guarantee (Urban Dibao) and the Rural Lowest Living Standard Guarantee (Dibao) (Bank, 2019). The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India helps to reduce poverty and promote social inclusion by giving rural families access to work opportunities and salary security (United Nations Economic and Social Commission for Asia and the Pacific, 2020, April 8). In a similar vein, nations like Thailand have implemented extensive social insurance programs, notably the Universal Health Coverage (UHC) program, to guarantee that every person has access to medical treatment (WHO, 2019). Even though social protection coverage has increased throughout Asia, there are still issues to be resolved, such as insufficient financing, restricted service availability in distant locations, and coverage gaps for marginalized and informal workers (Bank, July 2019). However, in order to achieve sustained economic growth and lessen sensitivity to social risks and economic shocks, it is imperative that efforts be made to fortify social protection systems throughout Asia (United Nations Economic and Social Commission for Asia and the Pacific, 2020, April 8). A graphical representation of economic growth, poverty and social protection trends is represented in figure 1.

Figure 1: Economic Growth, Social Protection and Poverty trends in High Income countries

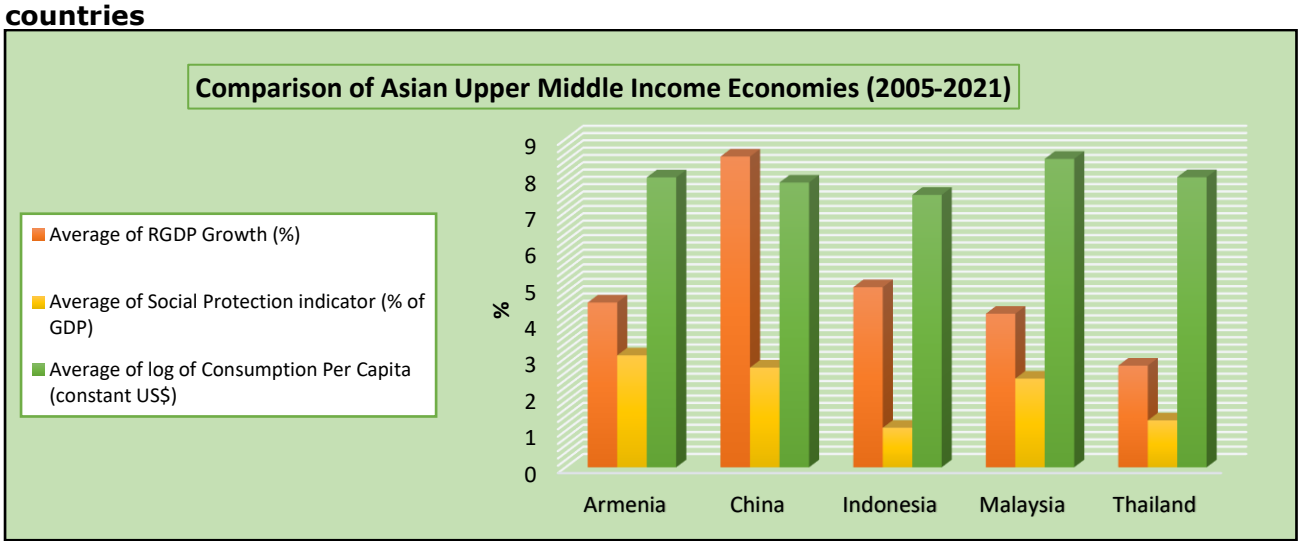


Source: Authors own construction

Social protection indicator is a better proxy of social protection as it covers all dimensions of it. It is the summation of social assistance, social insurance and active labor market programs. Expenditures of consumption per capita (CPY) are used as proxy of poverty due to less obtainability of its statistics (Odhiambo, 2009; Quartey & Prah, 2008). Figure 1 shows that in HIC, Singapore has higher RGDP growth rate of 5% and its expenditures on consumption per capita are 10% and its expenditures on social protection are 4 % on average. One noticeable thing is that Japan has less RGDP growth rate of 1% but its spending on social protection are 7% on average that is high as compared to other high income countries. The reason is Japan has

comprehensive system of social programs like pension system, minimum wage, public assistance etc.

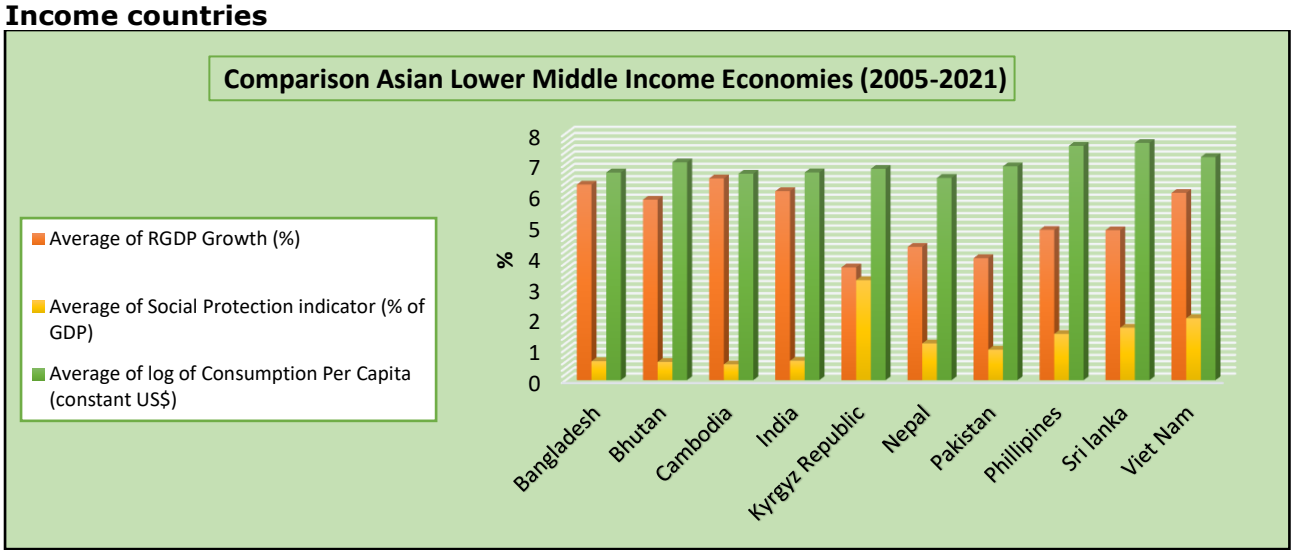
Figure 2: Economic Growth, Social Protection and Poverty trends in Middle Income countries



Source: Authors own construction

Figure 2 shows that in UMIC China has higher RGDP growth rate of 8.5% and its CPY are 8% but its expenditures on social protection are 2.8% on average which are less than Armenia which are 3% on average. In UMIC all countries have high values of CPY which show less Poverty there. As high CPY means that they have more income to spend which shows the prevalence of less poverty there.

Figure 3: Economic Growth, Social Protection and Poverty trends in Lower Middle Income countries



Source: Authors own construction

Figure 3 shows that in LMIC, Philippine and Sri Lanka exhibits high consumption expenditures as 7.5% and 7.6% but RGDP growth rate of Viet Nam and Cambodia is high as 6% and 6.5% and expenditures on social protection in Kyrgyz Republic are high as 3.5% on average. Bangladesh, Bhutan and India have RGDP growth rate of 6.5%, 6% and 6.2% respectively and their social protection expenditures are 0.5%, 0.5% and 0.6% respectively, on average, which manifest with least social protection values. It means that it is not necessary that a country which has high growth rate will spend more on its consumption or social protection system. It is all based on sound system of social protection, income and consumption patterns of a country. It is all evident by the graphical representation of Asian countries desegregated by various income levels. The prominence of the research is its examination of the state of poverty in Asia, both overall and disaggregated by income category (HIC, UMIC, and LMIC), and in the contribution that social protection made to reducing poverty and its possible impact on economic growth. This study has the following goals to achieve.

- To conduct an empirical investigation of the long-term impacts of social protection and poverty on EG in both overall and disaggregated Asia by income.
- To verify robustness of the empirical estimates.

The study is systemized in the following way. There are five sections to this research. The introduction of the research is contained in the first section. The next section, literature review provides a review of theoretical and empirical research. How variables connect to the dependent variable is explained in the third section i.e. conceptual framework. The fourth section contains description of variables, model specification and suitable estimation method. The estimated outcomes are shown and discussed in the fifth section i.e. results and discussions. The sixth section contains conclusion of the research, policy recommendations, limitations and future prospects.

2. Review of Literature

Economic theory has placed a strong emphasis on economic growth, and a number of influential publications have advanced our knowledge of its dynamics and forces. As according to Solow growth model (1956) exogenous technical advancement is the main factor in determining long-term EG. Romer (1990) expanded on this paradigm to develop endogenous growth theory, emphasizing the contribution of innovations and human capital investments to long-term growth via rising returns. In his theory of economic growth, Schumpeter (1911) highlighted the significance of innovation and entrepreneurship, contending that progress is driven by creative destruction, which replaces outmoded technologies with new ones. Aghion and Howitt (1990) emphasized the significance of creative destruction and knowledge spillovers in promoting economic expansion, further integrating aspects of endogenous growth theory with Schumpeterian theory. Furthermore, institutional viewpoints like those of Acemoglu, Johnson and Robinson (2001) emphasize the role that institutions like the rule of law and ownership rights have in determining long-term economic trajectory of a country. Theoretical literature examining the interconnections among economic growth, poverty, and social protection offers valuable insights into the dynamics shaping development trajectories. Amartya Sen's seminal work "Development as Freedom" underscores the notion that economic growth alone does not guarantee human development; rather, it is the expansion of individual capabilities and freedoms that should be central to development agendas (Sen, 1999).

In his research (Ravallion, 2001) emphasizes the nuanced association between EG, inequality and poverty. He argues that while EG can contribute to poverty reduction, its impact is heavily mediated by the distributional effects, with social protection measures playing a crucial role in mitigating inequality and poverty. The World Bank's "World Development Report 2015: further delves into the behavioral dimensions of poverty and social protection, highlighting the importance of understanding human decision-making and social norms in designing effective social policies. Barrientos and Hulme (2008) underscore the transformative potential of social protection systems in reducing poverty and promoting inclusive growth by enhancing human capital, reducing vulnerability, and fostering social cohesion. The research of Kabeer (2017) emphasizes the gender dimensions of social protection, highlighting how gender-responsive policies can participate to poverty reduction and EG by addressing the specific limitations faced by women. Collectively, these theoretical perspectives underscore the importance of integrating social protection measures into development strategies to ensure that economic growth translates into meaningful improvements in human well-being and poverty reduction. Some important studies to elucidate the empirical association among economic growth, poverty and social protection are as discussed as follows. Castles and Dowrick (1990) investigate the relation between government spending (health and education) and economic growth. Data is taken from 18 OECD nations during the time period 1960-1985. They estimate the model using pooled OLS methodology. The results indicate a positive relation of government sending and EG. Fan, Hazell and Thorat (2000) examine the effect of government spending and poverty on EG. Data is taken from rural India for the time period of 1970-1973. FIML2 method is used for estimation.

The findings indicates that government spending has favorable impact on EG while poverty has negative impact on EG. The association among education, poverty and EG in case of

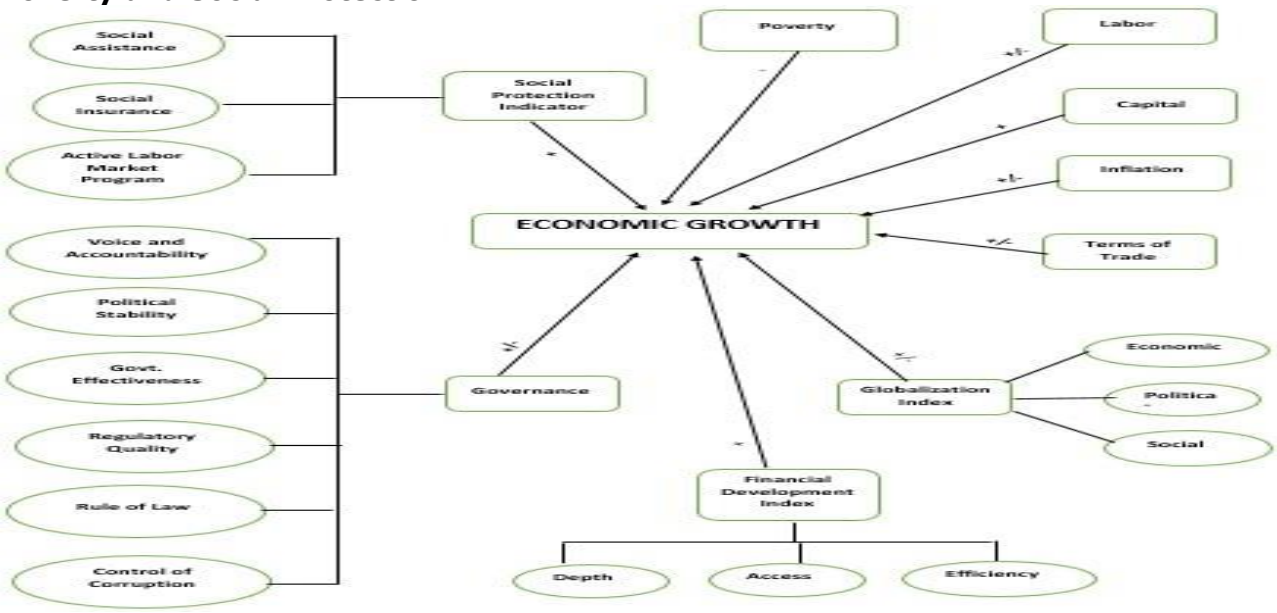
2 Full form of FIML is Full Information Maximum Likelihood

Pakistan for the time period 1971-2010 is examined by Afzal et al. (2012). They use ARDL3 and TYAGC4 method for estimation. The findings show a positive relation of education and EG while a negative relation of poverty and EG. A study is carried by Lopez and Servén (2006) for 85 less developed countries for the time period 1960-2000. They examine the relationship between poverty and EG. Panel ARDL is used for estimation. The results show a negative relation of poverty and EG. Ahuja and Pandit (2020) carried a research to examine the relationship of government spending, population, unemployment and EG for 59 developing nations for the time period of 1990-2019. Granger Causality test is utilized to run the model. The results indicate a positive relation of government sending and a negative relation of population and unemployment with EG. Waqas, Awan and Sánchez-Juárez (2022) in case of Pakistan analyze the effect of poverty, social protection and inequality on EG for the time period of 1983-2015. For estimation they used Engle and Granger Cointegration test. The outcomes of the research show a positive impact of government spending on EG while a negative impact of poverty and inequality on EG.Marrero and Servén (2022) carried a research for 158 emerging nations for the time period 1960-2010. They investigate the effect of poverty and inequality on EG. They used GMM technique for estimation. The outcomes of the research show a negative impact of poverty and inequality on EG. Bhavsar and Samanta (2023) examine the relation of government expenditure and EG for 29 Indian states covering the time period of 2004-2020. They used GMM technique for estimation. The findings indicate a positive long run relation of government expenditures and EG. After reviewing literature results are found mixed owing to differences in estimation techniques, sample and time frame. However, there is a dearth of study of connection among poverty, social protection and EG. Mostly time series research has been conducted on social protection. Moreover, government expenditure is used as a proxy for social protection in most studies. There is also limitation on the poverty data. Different studies have used different proxies of poverty like income per capita, infant mortality rate, head count index data, consumption per capita expenditures etc. Furthermore, to the best of our information, no research has examined the connection among social protection, economic growth, and poverty in Asia in respect to both aggregated and disaggregated by income levels.

3. Conceptual Framework

The main core explanatory variables of this study are poverty, social protection, labor, capital and governance. However some other explanatory variables like inflation (INF), terms of trade (TOT), globalization (GLOB), and financial development (FDI) are used for robustness purposes. Endogenous variable of this study is EG. The inter linkages between explanatory variables and dependent variable is explained in figure 4.

Figure 4: Conceptual Framework of Inter Relationships among Economic Growth, Poverty and Social Protection



Source: Author self-constructed

3 ARDL is Auto Regressive Distributed Lag
4 TYAGC is Toda Yamamoto Granger Causality test

As per literature poverty has negative association with EG (Jonnadi, Amar, & Aimon, 2012). Economic costs of poverty and imbalances brought on by territorial, ethnic, racial, and gender concerns impede a nation's capacity to develop. Similar to how dejection from poverty may result in a worthless manner of acting and societal evils that can trap people, such as drug and alcohol abuse, crime, marital violence, and early pregnancy. The social protection has positive association with EG as suggested by Waqas, Awan and Sánchez-Juárez (2022) and (Barrientos & Hulme, 2008). Social protection programs provide assistance to the ill, crippled, and frail. Along with creating jobs, it contributes to keeping the demand for goods and services in check. It thus propels EG forward. According to literature labor can impact EG both in negative and positive way. Capacity of workers to create more output per unit of input has at least in part been the driving force behind EG. An economy's total human resources and labor efficiency increase with rise in the state of education (Clark, Ramsbey, & Adler, 1991; Duval & de la Maisonneuve, 2010). Labor may have a negative effect on EG because workers with fewer education and competence might have an inverse influence on the economy (Acemoglu, Johnson, & Robinson, 2001; Yakubu, Akanegbu, & Jelilov, 2020). The capital has a favorable effect on EG as suggested by Boamah et al. (2018); Troise, Tani and Jones (2020). An economy may have a faster growth in total revenue when capital formation is higher. The quantity of national income can rise by increasing the production of products and services.

According to some studies, there is an inverse relation between inflation and EG because inflation can increase uncertainty about the profitability of investment projects in the future (especially when rapid expansion is also associated with increased cost variability), which eventually results in lower levels of investment and EG (Khan, Senhadji, & Smith, 2006). Certain research indicates a positive association between inflation and EG. A rise in inflation-related nominal interest rates promotes investment over consumption. As a result, the economy is stimulated by an increase in capital accumulation (Mundell, 1963; Tobin, 1965). The terms of trade affect EG both in positive and negative way. A better term of trade suggests that the country may sell its goods abroad and receive more import units per unit of its product. Accordingly, foreign consumers find domestic products so appealing and competitive that they are prepared to pay an increasing price (Mendoza, 1997). A decline in TOT might make it more difficult to sustain the current account and trade deficits, which would result in massive external indebtedness. In emerging and low-income economies, the TOT shocks lead to changes in the business cycle (Wong, 2010). Globalization has three sub dimensions of economic, political and social globalization. A globalization index is constructed by utilizing its dimensions using PCA5 method. Globalization has both positive and negative effects on EG. New commercial sectors, improved trade and venture, cross-line innovation, and information flows have all been made possible by globalization. These developments have increased the prominence of EG, improved efficiency, and increased job creation across a range of locales (Samimi & Jenatabadi, 2014). The negative effects of globalization include rising inequality, corruption, declining authority, shattered social identities, and deteriorating environmental conditions (Ying, Chang, & Lee, 2014). The financial development Index has three sub dimensions called depth, access and efficiency. Financial development has a positive influence on EG as suggested by Hassan, Sanchez and Yu (2011); Levine (2002). Financial development increases the reserve funds rate, activates and pools investment funds, and generates knowledge about investments, all of which contribute to EG progress through capital accumulation and creative advancement.

4. Data, Model and Methodology

4.1. Data Description

This research employs a balanced panel data of 18 Asian nations covering the time spans of 2005-2021 to examine the association among economic growth (EG), poverty (POV) and social protection (SPI) while considering inflation (INF), terms of trade (TOT), globalization (GLOB) and financial development (F.DEV) as control variables. The Cross-sections are further desegregated into high income countries[6], upper middle income countries[7], and lower middle income countries[8] based on the income categorization of World Bank for 2022–2023. The above-mentioned time span is chosen since social protection statistics for these eighteen Asian countries

5 PCA stands for principal component analysis. PCA is a statistical technique that helps you condense the information contained in massive data tables and used to construct indexes.
6 In HIC Japan, Singapore and Korea Republic are included.
7 In UMIC China, Indonesia, Armenia, Malaysia, Thailand are included.
8 In LMIC Cambodia, India, Bangladesh, Bhutan, Kyrgyz Republic, Nepal, Pakistan, Sri Lanka, Philippine, Viet Nam are included.

are available. Brief description of variables is elaborated in the subsequent table 1. In this research, the dependent variable is EG. We utilized log RGDP (local currency unit) as a proxy of EG. Social protection and poverty are the two main independent variables. The empirical literature on social protection is quite limited. In this analysis, we utilize the total social protection indicator as a proxy of social protection whose data comes from Asian Development Bank (ADB) publications that have averaged over missing values. The total of social assistance, social insurance, and active labor market programs is the social protection indicator. Different studies have employed different proxies for poverty. Omar and Inaba (2020); Solarin (2021) use head count index data for poverty. Per capita income used by (Adekoya, 2018), infant mortality rate used by Tsaurai (2018). Per capita consumption expenditure as proxy for poverty used by Nyasha, Gwenhure and Odhiambo (2017); Sehrawat and Giri (2016). Therefore, in this study, log of per capita consumption expenditures are used as a proxy for poverty. The labor force (LF), capital (GCF), and governance (GOV) are control variables. We have also included other explanatory variables like inflation (INF), terms of trade (TOT), globalization (GLOB) and financial development index (F.DEV) for robustness purposes.

Table 1: Brief Explanation of Variables

	Variables	Symbols	Proxy	Unit	Expected Sign	Sources
Endogenous variable	Economic Growth	EGit	RGDP(LCU) (in log)	%	----	WDI
	Social Protection Indicator	SPIit	Social Protection Indicator(% of GDP)	%	+	ABD Reports
	Poverty	CPYit	Consumption per capita expenditures (constant 2015 US$) (in log)	%	-	WDI
Exogenous variables	Capital	GCFit	Gross Capital Formation(% of GDP)	%	+	WDI
	Labour	LFit	Labour Force participation rate for ages 15+ (total %)	%	+/-	WDI
	Governance	GOVit	Governance index constructed by PCA method.	Index	+/-	WGI
	Inflation	INFit	GDP Deflator annual inflation	%	+/-	WDI
Other Exogenous Variables for Robustness	Globalization	GLOBit	Globalization index	Score 0 to 100	+/-	KOF Swiss Economic Institute
	Term of Trade	TOTit	Net Barter Terms of Trade Index	Index	+	WDI
	Financial Development	F.DEVit	Financial development Index	Index	+	IMF

Source: Author's constructed

4.2. Model

The following linear static model is used to empirically estimate the relation between EG, Poverty and SPI using balanced panel data. The expected signs based on literature are shown in parentheses. The brief explanation of variables used in equation 1 is represented in table 1.

$$EG_{it} = \alpha + \underset{(+)}{\beta_1 SPI_{it}} + \underset{(-)}{\beta_2 CPY_{it}} + \underset{(+)}{\beta_3 GCF_{it}} + \underset{(+/-)}{\beta_4 LF_{it}} + \underset{(+/-)}{\beta_5 GOV_{it}} + \nu_{it} \quad (1)$$

4.3. Methodology

In this section we are going to specify the suitable methodology that can supports our conceptual framework

4.4. Cross Sectional Dependence (CD)

In an econometric investigation, determining the direction of dependence of the cross-sections is the first step. The CD test is utilized in a panel setup to determine whether your

variables or residuals are correlated between groups. This test is crucial because efficiency gains predicted from comparing the outcomes of ordinary least-squares regressions (OLS) for each cross section will be reduced if one chooses to pool a population of cross sections that is similar in the slope parameters but ignores cross-sectional dependence. To choose which unit root test should be used, CD test is utilized. This study utilize (Pesaran, 2004) CD test.

4.5. Panel Unit Root Test

To confirm that the data is stationary, unit root tests are performed. The unit root test must be performed if values in the panel data are determined to be non-stationary in order to obtain reliable results. For variables that are cross sectional independent, the first generation unit root test Im, Pesaran, and Shin (IPS) unit root test is utilized for variables that are cross sectional dependent, the cross sectional augmented Im, Pesaran, and Shin (CIPS) unit root test is employed.

4.6. Fixed Effect Model (FEM)

The fixed effects model postulates that the impacts of unchanging, unmeasured factors may be captured by time-invariant, individual-specific dummy variables. It makes it possible to look at how within-unit changes over time. The least squares dummy variable (LSDV) estimator is another name for the fixed effect estimator. We may use different group-specific values to estimate each constant for each unique segment as dummy variables allows.

4.7. Random Effect Model (REM)

In addition to the FE model, another technique for estimating panel data is the random effect technique. Unlike the FEM, the constant term is treated as a random variable with a fixed average value in the RE model. The aforementioned equation indicates that a random error component, often referred to as an individual error component, should be included in the intercept term, which contains the distinctive characteristics of each entity. According to the equation, the random error component would change the value of ai. It is thought that there is no connection between the explanatory factors and any particular error component.

4.8. Hausman Test

Hausman (1978) is commonly used to choose among the FEM and REM (Greene, 2012). The null hypothesis of the Hausman test suggests that there does not exist a association among the error component term and the exogenous variable. If the null hypothesis is not rejected, we will use the REM to generate unbiased estimators. We will use fixed effects to estimate the model in the event that it is rejected.

4.9. Post Estimation Tests

In order to get unbiased and BLUE9 results the estimation outcomes must be free from hetero and autocorrelation problems. For this purpose this study used the Breusch and Pagan (1980) to address the hetero-skedasticity issue. Panels that are balanced or imbalanced can both employ this test. The hypothesis are:

Ho: The residuals are homo-skedastic
H1: The residuals are hetero-skedastic
To solve the autocorrelation problem Wooldridge auto correlation test is used. Its hypothesis are
Ho: Serial autocorrelation is not present
H1: Serial autocorrelation is present

5. Estimation Results and Discussion

5.1. Descriptive Statistics

An overview of the summary statistics of variables, shedding light on how variation is spread across these indicators in different income categories in Asia and overall Asia is presented in table 2.

The mean value of terms of trade is high in Asia for LMIC and UMIC. In comparison with other variables, the standard deviation of terms of trade is likewise high. It indicates that there is greater turbulence in terms of trade in these areas. Compared to UMIC and LMIC, the economic

9 BLUE stands for best linear unbiased estimates.

growth and social protection indicators in HIC have higher mean values, which demonstrate that HIC is outperforming SPI and EG on average.

Table 2: Summary Statistics of Variables

	Variables	Mean	Minimum	Maximum	St.Dv.	Obs.
Asia						
Endogenous variable	EGit	30.5721	24.0601	36.9475	3.2183	
	SPIit	2.0560	0	12.36	2.6101	
	CPYit	7.7221	6.2492	10.0378	1.0656	
Exogenous variables	LFit	61.8469	39.6670	77.2	8.7337	
	GCFit	29.5950	14.1206	69.4726	9.0615	306
	GOVit	-6.16e-09	-1.5491	2.0821	1.0000	
	INFit	5.1797	-5.9922	42.3033	5.3574	
Exogenous Variables for Robustness	TOTit	93.2888	46.2763	152.2557	25.0022	
	GLOBit	61.6760	27	84	12.1171	
	F.DEVit	.4017	.0681	.9245	.2424	
HIC						
Endogenous variable	EGit	31.8398	26.2251	35.1889	3.7354	
	SPIit	4.4755	.1	12.36	4.3006	
	CPYit	9.7552	9.3350	10.0379	.1894	
Exogenous variables	LFit	64.3194	59.01	71.219	4.1825	
	GCFit	27.5013	21.5069	33.6668	3.5242	
	GOVit	-3.73e-09	-1.8243	1.1359	1.0000	51
	INFit	1.1781	-1.8807	4.6739	1.5106	
Exogenous Variables for Robustness	TOTit	69.9808	50.1947	87.6225	11.8584	
	GLOBit	77.6352	68	84	4.4706	
	F.DEVit	.7934	.6890	.9245	.0663	
UMIC						
Endogenous variable	EGit	30.9808	27.3162	36.9475	3.1232	
	SPIit	2.1211	.03	5.8	2.0616	
	CPYit	7.9281	7.0724	8.7831	.4010	
Exogenous variables	LFit	66.2701	60.129	73.997	4.1235	
	GCFit	30.5115	17.4085	47.9428	8.9231	
	GOVit	-2.04e-08	-1.7556	1.9298	1.0000	85
	INFit	3.9233	-5.9922	18.1498	3.8242	
Exogenous Variables for Robustness	TOTit	106.6386	79.0487	139.8044	14.5291	
	GLOBit	67.7690	55	81.0492	7.0341	
	F.DEVit	.4791	.1041	.7372	.1913	
LMIC						
Endogenous variable	EGit	29.9874	24.0602	36.1747	2.9669	
	SPIit	1.2975	0	5.75	1.5373	
	CPYit	7.0092	6.2492	7.9290	.4227	
Exogenous variables	LFit	58.9852	39.667	77.2	10.2451	
	GCFit	29.7649	14.1206	69.4726	10.1570	170
	GOVit	1.38e-08	-1.3488	2.8568	1.0000	
	INFit	7.0100	-1.7165	42.3033	5.9030	
Exogenous Variables for Robustness	TOTit	93.6063	46.2763	152.2557	26.9806	
	GLOBit	53.8418	27	66	8.7863	
	F.DEVit	.2455	.0681	.5158	.1127	

Source: Author self-construction

The high value of CPY, a proxy for poverty, in the HIC indicates high consumption per capita expenditures. Compared to other areas, the minimal value of labor, capital, social protection, and economic growth is lower in LMICs. In LMICs, the standard deviation of inflation is greater which shows the prevalence of high inflation there. Overall, our results are not skewed, and none of the four panels showed any notable fluctuations over the sample period. The variable's range is evident from its maximum and lowest values, which fall inside these parameters.

5.2. Correlation Results of Asia, HIC, UMIC and LMIC

In Table 3 correlation analysis is reported which shows that with respect to Asia, three variables including social protection, consumption per capita expenditures and labor force has

positive weak linear association as these have values 0.1609, 0.1400 and 0.1658 respectively, while capital with value of -0.0892 and governance with value of -0.1125 show a negative weak association with dependent variable.

Table 3: Correlation Outcomes

Indicators	Egit	SPIit	CPYit	LFit	GCFit	GOVit
ASIA						
EGit	1.0000					
SPIit	0.1069	1.0000				
CPYit	0.1400	0.5241	1.0000			
LFit	0.1658	0.0693	0.2525	1.0000		
GCFit	-0.0892	-0.0669	-0.1303	0.1153	1.0000	
GOVit	-0.1125	0.3647	0.7892	0.1588	0.2085	1.0000
HIC						
EGit	1.0000					
SPIit	0.1608	1.0000				
CPYit	-0.6219	0.3624	1.0000			
LFit	-0.8758	-0.1273	0.3735	1.0000		
GCFit	0.3988	-0.2163	-0.7931	-0.0463	1.0000	
GOVit	-0.7023	0.2156	0.6700	0.6462	-0.6127	1.0000
UMIC						
EGit	1.0000					
SPIit	-0.1680	1.0000				
CPYit	-0.6764	0.5936	1.0000			
LFit	0.2851	-0.1933	-0.3417	1.0000		
GCFit	0.3507	-0.1521	-0.3803	0.3249	1.0000	
GOVit	-0.4979	0.1155	0.7048	-0.0148	-0.1616	1.0000
LMIC						
EGit	1.0000					
SPIit	0.0020	1.0000				
CPYit	0.1421	0.4068	1.0000			
LFit	0.2327	0.0206	0.1370	1.0000		
GCFit	-0.3449	0.0727	-0.0296	0.1022	1.0000	
GOVit	-0.3063	-0.0494	0.3653	0.0179	0.6649	1.0000

Source: Author own calculation

In HIC, two variables social protection and capital with values 0.1608 and 0.3988 shows positive and weak association whereas, three variables consumption per capita expenditures, labor force and governance with values of –0.6219, -0.8758 and -0.7023 depict strong negative association with dependent variable. In UMIC social protection with value -0.1680 show weak negative association as its value suggest, two variables consumption per capita expenditures and governance with values -0.6764 and -0.4979 shows strong negative association whereas, two variables labor force and capital with values 0.2851 and 0.3507 show positive weak association with dependent variable. In LMIC, three variables social protection, consumption per capita expenditures and labor force with values 0.0020, 0.1421 and 0.2327 show positive weak association whereas, two variables capital and governance with values -0.3449 and -0.3063 show negative weak association with dependent variable.

5.3. Cross Sectional Dependence (CD) and Panel Unit Root Results

Table 4 indicates a mix order of integration and no variable is found of I(2). The detailed discussion on unit root results and cross sectional dependence results are not reported here in order to conserve space.

Table 4: CD and Panel Unit Root Results

Variables	CD P-value	CD Status	1st Generation Test (IPS)			2nd Generation Test (CIPS)		
			(c,t) At level	(c,t) 1st diff	Order	(c,t) At level	(c,t) 1st diff	Order
Asia								
EGit	0.000 *	Dep				-1.470	-3.555*	I(1)
SPIit	0.000*	Dep				-2.936**	----	I(0)
CPYit	0.000*	Dep				-2.226	-4.209*	I(1)
LFit	0.067***	Dep				-1.535	-2.794**	I(1)
GCFit	0.845	Ind	0.6682	0.000*	I(1)			
GOVit	0.000*	Dep				-2.762	-4.710*	I(1)

INFit	0.000*	Dep				-3.448*	----	I(0)
GLOBit	0.000*	Dep				-2.708***		I(0)
TOTit	0.000*	Dep				-2.591	-4.288*	I(1)
F.DEVit	0.000*	Dep				-2.293	-4.247*	I(1)
HIC								
EGit	0.000 *	Dep				-1.710	-3.901 *	I(1)
SPIit	0.000*	Dep				-2.639	-4.907 *	I(1)
CPYit	0.000*	Dep				-1.852	-2.844 ***	I(1)
LFit	0.002*	Dep				-1.593	-3.996*	I(1)
GCFit	0.218	Ind	0.4763	0.0071*	I(1)			
GOVit	0.002*	Dep				-2.405	-3.449*	I(1)
INFit	0.263	Ind	0.0471**	---	I(0)			
GLOBit	0.000*	Dep				-3.017**	---	I(0)
TOTit	0.000*	Dep				-1.858	-4.309*	I(1)
F.DEVit	0.000*	Dep				-2.925**	---	I(0)
UMIC								
EGit	0.000*	Dep				-1.578	-3.007*	I(1)
SPIit	0.000*	Dep				-2.593	-4.641 *	I(1)
CPYit	0.000*	Dep				-1.046	-3.500 *	I(1)
LFit	0.022 **	Dep				-2.579	-3.697*	I(1)
GCFit	0.629	Ind	0.8415	0.0330**	I(1)			
GOVit	0.428	Ind	0.1757	0.0003*	I(1)			
INFit	0.000*	Dep				-3.127**	---	I(0)
GLOBit	0.000*	Dep				-3.277*	----	I(0)
TOTit	0.397	Ind	0.0905***	----	I(0)			
F.DEVit	0.000*	Dep				-2.033	-3.859*	I(1)
LMIC								
EGit	0.000*	Dep				-1.158	-3.367*	I(1)
SPIit	0.000*	Dep				-3.171*	----	I(0)
CPYit	0.000*	Dep				-2.379	-4.356*	I(1)
LFit	0.097***	Dep				-1.441	-2.764 ***	I(1)
GCFit	0.608	Ind	0.4635	0.0048*	I(1)			
GOVit	0.000*	Dep				-2.897***	---	I(0)
INFit	0.000*	Dep				-3.981*	---	I(0)
GLOBit	0.000*	Dep				-2.295	-3.900*	I(1)
TOTit	0.000*	Dep				-2.579	-4.043*	I(1)
F.DEVit	0.000*	Dep				-2.731	-4.216*	I(1)

Notes: IPS use p-value while CIPS use calculated values and critical values, Critical values in case of CIPS for Asia are -2.92, -2.73 and -2.63 at 1%, 5% and 10% level of significance for HIC, UMIC and LMIC at 1%, 5% and 10% are -3.15, -2.88 and -2.74, Source: Author self-constructed, *, **and *** denotes level of significance at 1%, 5% and 10% respectively.

5.4. Fixed and Random Effects Model Empirical Outcomes: 2005-2021

In table 5 empirical results with both fixed and random effects model are presented. The Hausman test outcome indicates that random effects are suitable for both the disaggregated panel LMIC and the aggregated Asia panel. The Hausman test p-value is 0.9938 and 1.000 in Asia and LMIC respectively, meaning that it is significant at the 5% level. Therefore, we are unable to reject H0, indicating that RE are suitable. Fixed effects are suitable in HIC and UMIC since the p-value of Hausman test is 0.000 in both panels. The significance level is less than 5%. Thus, we reject H0. Upon doing a diagnostic test, we discovered that auto correlation issues were present in all four panels (Asia, HIC, UMIC, and LMIC) as well as hetero issues in the UMIC and Asia panels. To address this concern, we have calculated the Generalised Least Square (GLS) in Asia and LMIC as well as the Driscoll and Kraay standard errors (D-KSE)10 in HIC and UMIC. The next part contains a thorough representation of the amended results.

10 D-KSE full form is Driscoll and Kraay standard errors. It is the remedy for hetero-skedasticity and auto correlation problems in fixed effect models. GLS stands for generalized least square method and FEM stands for fixed effects Model.

Table 5: Fixed and Random Effects Estimation Outcomes

Endogenous Variable = Economic Growth (RGDP)it								
	Asia		**HIC**		**UMIC**		**LMIC**	
Variables	Co-ef	St.Er (P-value)	Co-ef	St.Er (P-value)	Co-ef	St.Er (P-value)	Co-ef	St.Er (P-value)
SPIit	.012	.003 (0.000)*	.001	.003 (0.615)	.007	.007 (0.015)*	.026	.007 (0.000)*
CPYit	1.080	.031 (0.000)*	1.837	.177 (0.000)*	.054	.054 (0.000)*	1.1273	.0415 (0.000)*
LFit	.005	.003 (0.082)**	.040	.009 (0.000)*	.003	.003 (0.831)	.0006	.004 (0.851)
GCFit	.005	.001 (0.000)*	.006	.005 (0.223)	.001	.001 (0.021)*	.005	.001 (0.000)*
GOVit	.015	.028 (0.307)	-.072	.0285 (0.014)*	.016	.016 (0.167)*	.019	.033 (0.560)
Constant	21.773	.884 (0.000)*	11.172	1.598 (0.000)*	.492	.492 (0.000)*	21.782	1.251 (0.000)*
Summary Statistics								
Obs.	306		51		85		170	
Cross sections	18		3		5		10	
Prob> chi2(RE) Prob> F(FE)	0.000*		0.000*		0.000*		0.000*	
R2	0.906		0.884		0.962		0.918	
Hausman Test Outcome								
Prob> chi2	(0.994)		(0.000)*		(0.000)*		(1.000)	
Conclusion	REM		FEM		FEM		REM	
Diagnostic Tests Outcomes								
BP Heteroskedasticity Test [H0: constant variance]								
Prob> chi2	0.0143*		0.3644		0.000*		0.9380	
Conclusion	Heteroskedasticity		No Heteroskedasticity		Heteroskedasticity		No Heteroskedasticity	
Woolridge Auto correlation Test [Ho: No first order autocorrelation]								
Prob> F	0.0002*		0.0069*		0.0012*		0.0005*	
Conclusion	Auto correlation		Auto correlation		Auto correlation		Auto correlation	

Source: Author self-constructed Note: *, ** and *** denotes level of significance at 1%, 5% and 10% respectively.

5.5. Panel FEM and REM Results with GLS and (D-KSE): 2005-2021

In Table 6 because of the concern of hetero and auto correlation in panels we have applied robust methodologies to remove these concerns. Specifically we have calculated Driscoll and Kraay standard errors to solve these problems in HIC and UMIC and Generalized Least Square Method to tackle these concerns in Asia and LMIC. As a result of this, the model is now free of auto correlation and hetero issues. Empirical results show that in Asia and LMIC out of five, four variables in HIC and UMIC three variables are statistically significant. In Asia social protection has positive and significant association with EG. As 1% rise in social protection on average increase EG by .0230% in long-run during the period of 2005-2021. The positive impact of social protection on EG is aligned with the study of Ahuja and Pandit (2020) and Waqas, Awan and Sánchez-Juárez (2022). The reason of their positive association is that in developing nations, social protection may start an idealistic economic cycle that boosts productivity, efficiency and overall economic growth because it is not only an investment in individuals but also in the larger economy.

Per capita consumption expenditures significantly improves EG, as 1% rise in CPY rise EG on average by 1.1899% during reference period. The p-value suggests that this variable is highly statistically significant. Poverty decreases as consumption per capita rises, leading to higher income levels. As the rate of poverty declines, EG will rise. The results are aligned with the study of Barak (2022) and Lopez and Servén (2006). They also depict the inverse relation between poverty and EG. Labour has positive association with EG. A 1% rise in the labour force increase

EG by .0536% on average in long run during reference period. The result is aligned with the studies of Mujahid and uz Zafar (2012) and Shahid (2014). According to their results the degree of labor force participation may play a critical role in sustaining the GDP growth trend. When more people enter the workforce, businesses are able to expand their production and workforce. Governance has a negative significant effect on EG. EG is declined by.4935% on average over the long term during reference period with every unit rise in governance, holding other factors constant. The p-value suggests that this variable is highly statistically significant. The negative symbol indicates that high levels of corruption in countries with inadequate governance caused public funds that could have been used to support the impoverished to be diverted (Azam, 2022; Tharanga, 2018).

Table 6: Panel FEM and REM Results with GLS and D-KSE

Endogenous Variable = Economic Growth (RGDP)it								
	Asia (GLS)		**HIC (FEM)**		**UMIC (FEM)**		**LMIC (GLS)**	
Regressors	**Co-ef**	**St.Er (P-val)**	**Co-ef**	**(D-KSE) (P-val)**	**Co-ef**	**(D-KSE) (P-val)**	**Co-ef**	**St.Er (P-val)**
SPIit	.0230	.0012 (0.00)*	.0014	.0020 (0.48)	.0169	.0082 (0.05)*	.0522	.0070 (0.00)*
CPYit	1.1899	.0197 (0.00)*	1.8376	.1418 (0.00)*	.8766	.0633 (0.00)*	.8064	.0447 (0.00)*
LFit	.0536	.0012 (0.00)*	.0399	.0073 (0.00)*	-.0006	.0019 (0.73)	.0308	.0021 (0.00)*
GCFit	.00047	.0014 (0.39)	.0059	.0087 (0.50)	.0031	.0014 (0.04)*	.0024	.0015 (0.11)
GOVit	-.4935	.0141 (0.00)*	-.0726	.0233 (0.00)*	.0227	.0213 (0.30)	-.2167	.0300 (0.00)*
Constant	18.398	.1909 (0.00)*	11.172	1.7753 (0.00)*	23.9418	.4956 (0.00)*	21.735	.3149 (0.00)*
Summary- Statistics								
Observations	306		51		85		170	
Cross sections	18		3		5		10	
Prob> chi2 (GLS) Prob>F(D-KSE)	0.000*		0.000*		0.000*		0.000*	

Source: Author's own-calculation Note: *, ** and *** denotes significance at 1%, 5% and 10% respectively.

In Asia capital has insignificant but positive effect on EG. For the duration of our reference period, it is insignificant. As a result, no meaningful conclusions can be made. In HIC the outcomes show that CPY significantly and positively affects EG. Economic growth increases by 1.837% on average in long-run when there is a 1% rise in CPY. The p-value suggests that the variable is highly statistically significant. The outcomes resemble those of Michálek and Výbošťok (2019); Stephen and Simoen (2013). They also demonstrated the inverse relationship between EG and poverty. As Rich nations have rich economies. Additionally, their GDP is large, which raises consumption per capita expenditures and reduces poverty by increasing EG. Labor has a positive significant effect on EG, a 1% rise in the labor force on average increase EG by .0399% in long run during said time period. The p-value suggests that this variable is highly statistically significant. The outcomes are aligned with the outcomes of Duval and de la Maisonneuve (2010) and Haque et al. (2019). As an individual's employer provides them with compensation while they are employed. They can now afford to spend money on a variety of items, including food, clothing, entertainment, and many other things. Demand increases in direct proportion to personal expenditures. It has a favorable effect on the economy growth. Regarding social protection and capital effect on EG, it is found that social protection and capital positively but insignificantly affects EG. Considering insignificance, no meaningful conclusions can be made. Governance has a negative significant effect on EG, a one unit rise in governance decrease EG by .0726% on average in long run during our concerned time period. The negative symbol indicates that high levels of misconduct in countries with poor governance lead to tax revenues being lost to tax evasion, which might have funded social expenditures on the poor and beneficial

government investments. The misuse of public funds that could be used to support the impoverished is another consequence of high levels of corruption. In 2022 Shittu et al. (2020). In UMIC social protection significantly and positively affects EG in relation to its influence. A 1% rise in social protection on average increase EG by .0169% in long run. According to literature, social protection has a theoretically consistent favorable influence on EG. The results are aligned to the results of Castles and Dowrick (1990) and Fan, Hazell and Thorat (2000). Expenses of government on infrastructure, productivity-boosting spending's, and poverty-reduction programmes for rural communities all contribute to growth and the decrease of poverty. The results show that CPY significantly influences EG in a positive way. A 1% rise in CPY increase EG by .8766% on average during our reference period 2005-2021. The p-value suggests that the variable is highly statistically significant. People in higher middle-class nations have more disposable income. They may spend more the more they own. A rise in consumption raises GDP, which helps EG even more. The outcomes are comparable to those of Mulok et al. (2012) and (Zhu, Bashir, & Marie, 2022). The impact of capital on EG is found to be statistically significant and positive. In the long term, a 1% rise in capital rise EG by an average of.0031%. The results are comparable to the results of Aslan and Altinoz (2021). As buildup of capital assets leads to investment and higher production of products and services, which raises demand and raises population income. Labour negatively and governance positively but both insignificantly impact EG. Given insignificance no reliable conclusion can be made.

In LMIC Regarding the effect of social protection on EG, it is found that EG is positively and significantly impacted by social protection. As a 1% increase in social protection increase EG by .0522% on average during our reference period. The outcomes are aligned with the outcomes of Waqas, Awan and Sánchez-Juárez (2022). Regarding the effect of CPY on EG, it is found that CPY significantly and positively affects EG. Over the long run during our concerned time period, a 1% rise in CPY on average increase economic growth by.8064%. P-value shows that the variable is significant. Since literature holds that rising consumption per capita expenditures equate to rising national income. Increased earnings lead to a reduction in poverty, which increases EG. The results are similar to the results of Garza-Rodriguez (2018). With respect to the effect of labor on EG it is found to be positive and significant. As a 1% rise in the labor force has increased economic growth by an average of .0308% during our reference time frame. The p-value suggests that this variable is highly statistically significant. The results are similar to the results of Mujahid and uz Zafar (2012). As labor is the human element in the making of the commodities and services that comprise a nation, it is imperative to find enough people with the necessary skills to fulfil the rising demand. In some industries, this typically results in salary increases, which boosts the economy. EG is negatively and significantly impacted by Governance. EG is declined by.2167% on average over the long term during our reference time period with every unit rise in governance. The p-value suggests that this variable is highly statistically significant. Theoretically, the indicator of good governance is compatible with the belief held in the literature that corrupt officials and politicians in countries with weak governance are to blame for the slow progress of development projects in general. These individuals embezzle financial assistance and contributions and use them for other, less productive purposes. Furthermore, inept bureaucrats and weak institutions make it difficult or impossible to develop and carry out pro-poor and pro-growth strategies (Elbargathi & Al-Assaf, 2019; Uzelac, Davidovic, & Mijatovic, 2020). As per results capital has insignificant and positive impact on EG in LMIC. It is insignificant for the duration of our reference time frame. Therefore no reliable conclusion can be drawn.

5.6. Robustness Results

In order to check sensitivity of parameters with respect to sign, significance and magnitude robustness analysis has been taken. For robustness analysis we have used other multiple explanatory variables. Those variables include inflation (lNF), terms of trade (TOT), globalization (GLOB) and financial development (F.DEV).

Table 7 shows that social protection, consumption per capita expenditures and governance are strongly robust with respect to sign and significance either we add inflation, terms of trade, globalization and financial development. However labor and capital are marginally robust as when we add F.DEV both change their sign from positive to negative and capital also become insignificant.

Table 7: Robustness Results (Asia)

Endogenous variable = Economic Growth (RGDP)it					
Variables	**Base line model**	**(1)**	**(2)**	**(3)**	**(4)**
Coefficient, (P-value), [St. Err.]					
SPIit	.023 (0.000)* [.001]	.019 (0.000)* [.002]	.005 (0.000)* [.001]	.008 (0.000)* [.001]	.006 (0.000)* [.001]
CPYit	1.190 (0.000)* [.020]	.962 (0.000)* [.015]	1.232 (0.000)* [.013]	.415 (0.000)* [.015]	.527 (0.000)* [.023]
LFit	.054 (0.000)* [.001]	.053 (0.000)* [.001]	.008 (0.000)* [.001]	.041 (0.000)* [.001]	-.014 (0.000)* [.002]
GCFit	.004 (0.392) [.001]	.001 (0.045)* [.001]	.003 (0.000)* [.0002]	.002 (0.000)* [.0004]	-.001 (0.404) [.001]
GOVit	-.494 (0.000)* [.014]	-.414 (0.000)* [.015]	-.204 (0.000)* [.007]	-.384 (0.000)* [.012]	-.392 (0.000)* [.037]
INFit		-.001 (0.063)* [.0003]			
TOTit			-.006 (0.000)* [.0002]		
GLOBit				.054 (0.000)* [.001]	
F.DEVit					.919 (0.000)* [.136]
Summary Statistics					
Obs.	306	306	306	306	306
Prob-value>chi2	0.000*	0.000*	0.000*	0.000*	0.000*

Source: Author's own-calculation Notes: (i) *, ** and *** denotes significance at 1%, 5% and 10% respectively. (ii) In parenthesis p-value and in square braces standard errors are mentioned

Table 8: Robustness Results (HIC)

Endogenous variable = Economic Growth (RGDP)it					
Variables	**Base line model**	**(1)**	**(2)**	**(3)**	**(4)**
Coefficient, (P-value), [St. Err.]					
SPIit	.001 (0.482) [.002]	.0004 (0.814) [.002]	.001 (0.623) [.002]	.001 (0.658) [.003]	.004 (0.186) [.003]
CPYit	1.837 (0.000)* [.142]	1.903 (0.008)* [.148]	1.743 (0.000)* [.123]	1.824 (0.000)* [.127]	1.780 (0.000)* [.178]
LFit	.040 (0.000)* [.007]	.042 (0.000)* [.008]	.044 (0.000)* [.009]	.040 (0.000)* [.008]	.038 (0.000)* [.007]
GCFit	.006 (0.505) [.009]	.004 (0.601) [.008]	.006 (0.532) [.009]	.006 (0.506) [.009]	.006 (0.450)* [.008]
GOVit	-.073 (0.007)* [.023]	-.079 (0.003)* [.023]	-.080 (0.009)* [.027]	-.074 (0.018)* [.028]	-.072 (0.011)* [.025]
INFit		.009 (0.140) [.006]			
TOTit			-.002 (0.131) [.001]		
GLOBit				.001 (0.882)	

				[.006]	
F.DEVit					.506 (0.071)* [.261]
Summary Statistics					
Obs.	51	51	51	51	51
Prob-value>F	0.000*	0.000*	0.000*	0.000*	0.000*
R2	0.8836	0.8864	0.8877	0.8837	0.8932

Source: Author's own-calculation Notes: (i) *, ** and *** denotes significance at 1%, 5% and 10% respectively. (ii) In parenthesis p-value and in square braces standard errors are mentioned

Table 8 shows that Social protection, CPY, labor and governance are strongly robust with respect to sign and significance either you add inflation, terms of trade, globalization and financial development. While capital is marginally robust as when we add F.DEV it changes its significance.

Table 9: Robustness Results (UMIC)

Dependent variable = Economic Growth (RGDP)it					
Variables	**Base line model**	**(1)**	**(2)**	**(3)**	**(4)**
Coefficient, (P-value), [St. Err.]					
SPIit	.017 (0.058)** [.008]	.011 (0.192) [.008]	.018 (0.060)** [.009]	.010 (0.100) [.006]	.011 (0.096)*** [.006]
CPYit	.877 (0.000)* [.063]	.880 (0.000)* [.057]	.862 (0.000)* [.068]	.824 (0.000)* [.068]	.805 (0.000)* [.061]
LFit	-.001 (0.733) [.002]	-.002 (0.376) [.002]	-.001 (0.817) [.002]	-.000 (0.983) [.003]	.006 (0.074)** [.003]
GCFit	.003 (0.048)** [.001]	.003 (0.062)** [.001]	.004 (0.076)** [.002]	.006 (0.032)* [.003]	.004 (0.024)* [.002]
GOVit	.023 (0.303) [.021]	.013 (0.419) [.015]	.027 (0.279) [.024]	.031 (0.223) [.024]	.025 (0.280) [.022]
INFit		-.007 (0.025)* [.003]			
TOTit			.001 (0.305) [.001]		
GLOBit				.014 (0.005)* [.004]	
F.DEVit					.676 (0.021)* [.264]
Summary Statistics					
Obs.	85	85	85	85	85
Prob-value>F	0.000*	0.000*	0.000*	0.000*	0.000*
R2	0.962	0.968	0.963	0.968	0.968

Source: Author's own-calculation Notes: (i) *, ** and *** denotes significance at 1%, 5% and 10% respectively. (ii) In parenthesis p-value and in square braces standard errors are mentioned.

Table 9 shows that consumption per capita expenditures, capital and governance are strongly robust with respect to sign and significance either we add inflation, terms of trade, globalization and financial development. However social protection and labor are not strongly robust as when we add inflation and globalization social protection became insignificant and by adding F.DEV labor changes its significance.

Table 10 shows that social protection expenditures and consumption per capita expenditures are strongly robust with respect to sign and significance either we add inflation, terms of trade, globalization and financial development. However labor, capital and governance are marginally robust as when we add F.DEV both labor and capital became negative and by adding globalization, governance changes its sign and significance.

Table 10: Robustness Results (LMIC)

Endogenous variable = Economic Growth (RGDP)it					
Variables	**Base line model**	**(1)**	**(2)**	**(3)**	**(4)**
Coefficient, (P-value), [St. Err.]					
SPIit	.052 (0.000)* [.007]	.058 (0.000)* [.007]	.020 (0.020)* [.009]	.020 (0.000)* [.004]	.029 (0.043)** [.014]
CPYit	.806 (0.000)* [.045]	.779 (0.000)* [.050]	.524 (0.000)* [.064]	.332 (0.000)* [,036]	.194 (0.017)* [.081]
LFit	.031 (0.000)* [.002]	.041 (0.000)* [.002]	.019 (0.000)* [.003]	.058 (0.000)* [.002]	-.073 (0.000)* [.007]
GCFit	.002 (0.110) [.030]	.002 (0.338) [.002]	.001 (0.545) [.002]	.003 (0.000)* [,001]	-.003 (0.234) [.002]
GOVit	-.217 (0.000)* [.315]	-.237 (0.000)* [.032]	-.112 (0.000)* [.028]	.023 (0.146) [.016]	-.819 (0.000)* [.046]
INFit		-.0002 (0.783) [.001]			
TOTit			-.013 (0.000)* [.001]		
GLOBit				.020 (0.000)* [.002]	
F.DEVit					4.93 (0.000)* [.567]
Summary Statistics					
Obs.	170	170	170	170	170
Prob- val chi2	0.000*	0.000*	0.000*	0.000*	0.000*

Source: Author's own-calculation Notes: (i) *, ** and *** denotes significance at 1%, 5% and 10% respectively. (ii) In parenthesis p-value and in square braces standard errors are mentioned.

6. Conclusions

Economic growth is commonly acknowledged as the primary indicator for the effectiveness of a country. Increased economic growth leads to more educational attainment, more work possibilities, and higher income levels. But one of the major obstacle to economic progress is poverty. The Asian Development Report (2023) shows that poverty is still widespread throughout Asia, with an estimated 155.2 million people living in severe poverty and surviving on less than $2.15 per day on average. Poverty impedes economic progress by undermining a country's ability to prosper economically. As a result, reducing poverty becomes a crucial requirement for promoting economic growth. There are several tactics that may be used to reduce poverty, but social protection is one that is very important. Social protection, which targets needy households while also accelerating economic growth, is frequently seen as a development strategy with dual advantages. Its conceptualization encompasses a range of viewpoints and includes ideas about human rights, risk management strategies used by governments, and livelihood security frameworks. This research employs a balanced panel data covering the time spans from 2005-2021. After performing summary statistics, correlation analysis, cross section dependence and panel unit root test this research estimate long run association between variables using fixed and random effects guided by the result of Hausman test. To solve the problem of hetero-skedasticity and auto correlation Driscoll and Kraay standard errors and Generalized east Square methods are used. In addition to diagnostic check robustness analysis is conducted to ensure the accuracy of empirical estimates by including other explanatory variables like inflation, terms of trade, globalization and financial development. The outcomes of the research suggest that in Asia, labor, CPY and SPI have positive significant and GOV has negative significant effects on EG, whereas capital has a positive insignificant effect on EG. In HIC, EG is positively and significantly impacted by labor and CPY, negatively and insignificantly impacted by governance, positively and insignificantly impacted by SPI and capital. In UMIC, labor has negative insignificant and GOV

has positive insignificant effect while SPI, CPY and capital has positive significant effect on EG. In LMIC, governance has negative insignificant effect and capital has positive insignificant effect while SPI, CPY and labor has positive significant effect on EG.

- The study suggest that in Asia and particularly in UMIC and LMIC, to ensure that the greatest number of people are benefited, social protection spending should be increased. To make sure that the benefits of current programs are reaching the poor, the government should launch additional social protection initiatives and monitor and balance those that already exist.
- In Asia and in HIC, UMIC, LMIC by creating more jobs and offering incentives to staff members, consumption expenditures should be increased.
- In Asia and particularly in HIC and LMIC by strengthening labor skills and actively promoting labor market programs, labor force participation should rise. The government should start training programs for this reason in order to give people better skills and employment chances. Conditions for law and order need to be strengthened. It is necessary to implement more effective and efficient government structures, processes, and services.
- In UMIC buildings such as roads, schools, canals, tube wells, and other infrastructure projects should be constructed in order to enhance capital creation. They can be an important way for the economy to create capital. Government should adopt such policies which enhance domestic investment and increase capital in the country. This capital should be used to enhance social protection programs.

There is not any research which is comprehensive in all its aspects. The present research is also not without limits. Firstly, consumption per capita expenditures have been employed as a proxy for poverty in this research owing to limited data on poverty. Secondly, this study used data from Asian Development Bank reports for 18 Asian nations, as there was a dearth of social protection statistics. Further research can be done with the utilization of dynamic model. Since this study has used static model. So, in future dynamic specification of the model can be utilized in order to see the trends over the time. Secondly, all those countries which are missed in this study they can also be further included. Furthermore, the long-term linkages among poverty, social protection, and economic growth have been calculated; short-term interactions can also be assessed in the future.

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