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Institutional, Economic and Demographic Determinants of the Public Spending: A Study of Selected SAARC Countries

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Abstract

This study explores the impact of institutional, economic, and demographic factors of public spending for selected SAARC countries. The data is used for 6 countries from 2001 to 2021. The fixed effect model is applied by following the results of Durbin-WU-Hausman test. The institutional variables are government effectiveness, political stability, regulatory quality, and voice and accountability. The economic variables are total tax revenue, total debt, output gap, balance of trade, and income equality. While The population ages from 15 to 64, and population ages from 65 and above are the demographic indicators. The results indicate that the voice and accountability, total tax revenue and demographic indicators have significant impact on public spending. But population more than ages of 65 years have negative impact on public spending, while population ages from 15 to 64 has positive impact. Government effectiveness, political stability, Regulatory Quality, total Debt, balance of trade is insignificant.

Keywords: *Institutions, Public Spending, Demographic factors, SAARC countries, Fixed Effect.*

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INTRODUCTION

Public spending is not only an economic phenomenon; it is also influenced by social, political, demographic, historical, and institutional factors. Nowadays, the focus of world has changed from economic to institutional factors. Economic, demographic and social determinants are considered main and most influencing determinants of macroeconomic policies. Since the concept of governance got importance in the world's economic matters, researchers have focused on institutional quality and its impact on different fields of life. In this study, along with demographic and economic factors we will include governance factors as institutional quality to find out its impact on public spending of SAARC region. Institutional quality helps in building politically and economically stabilized image of countries in the world which attracts different economic and non-economic opportunities in the country. Institutional quality removes bad bugs from the domestic sectors, along with reduction in gaps in bilateral and multilateral relations. (Mehmood, et al. 2022)

The demographic structure of the country determines the policy preferences. During the election year, politicians present the mandate 'a policy package' to attract the voters. Voters vote for the representatives who met their desired policy preference. Persson and Tabellini (2003) states that median voter is responsible for the policy choice. Voters are mainly classified according to age and income level. The old age people and unemployed people and lower income people vote for large redistributive programs. Citizens between 15 to 64 years vote for the provision of public goods and services. Thus demographic structure is also important for the policy choice of public spending and social welfare spending.

The economic factors which determine the size of the public spending are the tax base, investment, trade, and debt accumulation. The broader tax base leads the lower tax rate which reduces the burden of tax which resulting an increase in the well-being of citizen. The higher investment leads higher profit which ultimately leads economic growth. Trade surplus accelerate the industrial process which generate the revenue for the country. In last debt is accumulated to finance the budget deficit. All these well-structured economic factors are observed in Asian tigers1 and all developed countries. On the other hand, these economic factors are ill-structured in developing countries which affect the size of the government and its allocation. For example in Pakistan a heavy amount is thrown into the servicing of debt (Public Debt, Pakistan Economic Survey 2016). Tax base is narrow which lead the high tax rate which increases the burden on the citizen. Thus, in developing countries the ill-structured economic factors lead the size of the public spending which constraint the economic growth and welfare of the citizen.

Nowadays, the focus of world has changed towards the institutional set-up of countries. Institutions plays and important role in determination of economic, social, political, and policy set-up of countries. World governance institutions from the world bank are the most important institutions of any country. These world governance institutions include control of corruption, regulatory control, rule of law, political stability and absence of violence, voice and accountability, and government effectiveness.

In this study we analyze the institutional, economic and demographic determinants of public spending in SAARC countries. SAARC stands for South Asian Association for Regional Corporation. It is founded in 1985 with the goal that by 2020 South Asian countries will enjoy the free entry of labor and capital among SAARC countries and common currency for financial transaction like European Union. The SAARC treaty was signed for the economic well-being of south Asia. The SAARC countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. This study focuses on the SAARC countries due to several similar aspects that are; these are the neighboring countries constituting south Asia. These countries are world extremely populated countries with lower GDP growth. Political situation is also nearly similar, while political structure and institutions are different. Sri-Lanka and India are progressing among these SAARC countries. We are unable to find any study which particularly focus on this significant issue. Most of the studies which cover the SAARC areas focus on finding the determinants of economic growth, economic development, or trade openness and studies have revealed that public spending is one of the important determinants; but no study has found in which determinants of public spending are explored in SAARC region. Moreover, no study has explored the institutional determinants of public spending. The aim of the study is to finding out the significant institutional, economic, and socio-demographic determinants of public spending, because public spending is also one of the most important aspects which contributes in social and economic development. This study will help out policy makers to determine the economic, institutional, and socio-demographic factors which misleads or damage government size of SAARC region. This study consists of literature review, methodology and modeling, estimation and analysis of data.

LITERATURE REVIEW

In literature, authors have focused on different aspects of political system, the role of legislation, and the importance of election years in policy making of federal government. Literature has also thrown light on economic factors that influence the policy making of government. In this chapter, literature is added that has focused on the political and economic determinants of public spending and social welfare spending.

Literature on SAARC countries

Mehmood, et al. (2022) investigated the instituitonal determinants of economic growth in south-asian region. Their study reveals that corruption control, accountibility and rule of law has positive and significant impact on economic growth. The study has used panel data for Bangladesh, Bhutan, Nepal, India, Pakistan and Sri lanka.

Ansari, Khan, & Singh (2021) investigated the impact of public spendings on GDP growth in BRICS, ASEAN, and SAARC regions. The time span covered from 1991

to 2019 and fully modified OLS technique had used to estimate the data. The results have shown uni-directorial relationship between public spending and economic development. There is also found long run relationship between inflation, human capital, employement, unemployment, government size and economic growth.
Tasleem (2021) has explored the impact of external debt servicing on expediture of education and health in selected SAARC countries. The panel data has been collected from 1990-2016 and estimated the data by using fixed effect model. The study has revealed that increase in external debt servicing lead to decrease in education and health expenditures.

Chowdhury (2012) has examined the relation of foreign aid and real exchange rate with trade competitiveness. Vector error methodology for data set of 1971 to 2008 has been used. The results concluded foreign and is favorable for the trade competitiveness of SAARC countries excluding Nepal and Maldives, while terms of trade and government expenditures has negative impact on the competitiveness of trade. Sagacious macroeconomic policies with nominal exchange rate will be favorable for the improvement of trade competitiveness.

Samina and Khushbakhat (2012) have explored the impact of monetary and fiscal policies on the business cycle of the SAARC countries. The authors have used two monetary variables i.e. inflation and nominal interest rate and the fiscal variable was goveremnt public spedning. The study revealed that institutions of macroeconomic policies in SAARC countries are pro-cyclical.

Obino (2009) has argued that SAARC need to achieve regional unity to achieve its goals. Regional problems must be solved beyond the ground of political. Rather providing policies SAARC need to focus on their institutions. Regional issues of SAARC can be handled via sincere political will.

The issue of trade has been explored deeply by Ghuman and Madan (2006). They concluded that trade issues in Pakistan and India are derived through political interest even ignoring economic losses. Both countries are trying to reduce the trade dependency. Trade can bring a huge hike in economic growth of both countries. But political interests, historical backgrounds, and conflicts are leading ignorance from economic gain from trade.

Amjad, Khan and Bilquees (2004) has worked on the deteminants of growth in SAARC countries. The treaty of SAARC has minimum imapct on the growth of the region. The authors has evaluated the performance for SAARC by finding out the determinanats of growth. They have found many flaws in policies and objectives of SAARC treaty.

Yahya (2004) suggested to bulid up strong trade ties between ASEAN and SAARC countries, Pakisan and India have to improve terms of bilateral trade with each other as well as with the countries of ASEAN region. She has also suggested that Pakistan has to adopted the strategies of SAFTA to bulid up trade ties with india, and she also suggested to develop solid and effecitive infrastructual bonds with india to open the gates for trade and development.

Sengupta and bani (1997) discussed the benefits of trade which can be availed, if SAARC countries jointly and peacfully strengthen their ties for trade and investmet. He discussed that it will open the road for employment especially. If once the SAARC countries become successful in making the economic bonds, the political agression will automatically decreases for the sake of development.

Kayathwal (1992) analysed the characteristics of SAARC countries, the part of india played in economic corporation of SAARC countries, and the summit of SAARC. He drawn up the coclusion that SAARC countries have to bulid up a strong infrastructure of by air, by road and by waters, and cold down the hot political issues among SAARC countries to become economically strong region.

The studies on SAARC countries focus on issues related to trade and growth of SAARC countries (Subhani 2009), quality of economic institutions and its impact on selective SAARC countries (Anwar and Munir 2013), human development in SAARC countries (Saha 2005) (Al-Zyoud, Ali and Ahmad 2021), social development among SAARC countries (Mangi 2005), role of exchange rate in determination of economic growth (Imran and Sial 2021), institutional determinants of financial development (Ellahi, et al. 2021) foreign direct investment and economic growth (Erum, Hussain and Yousaf 2016).

There has not been conducted significant study on the determinants of public spending and social welfare spending in SAARC countries, but different authors have done significat work on determinants of public spending and social welfare spending in developed countries such as OECD countries, and EU countries which is covered under next heading.

Literature on Non-SAARC Countries

Haelg, Potrafke, & Sturm (2022) have explored the determinants of social expenditure in OECD countries. The panel data consist of 31 cross sections and time span includes data from 1980 to 2016. The study revealed that fractionalization of party system, fiscal balances, and globalization are negatively affect the social expenditure, while unemployment, population aging, banking crises, social globalization, and public debt are positively associated with social expenditures.

McManus (2019) analyzed the impact of global financial crisis on the political dynamics which affects social spendings in European 28 OECD countries. The panel data has split into two portions, pre-crisis data from 1990 to 2007, and post crisis data from 2008 to 2013. The study has explored that political partisan has great effect post crisis. While before crisis the partisan effect was insignificant.

Alesina and Passalacqua (2015) discussed the political economy of the govt. debt. According to him the political institutions are the cause of the illiterate voters or if voters are active, the problem is the asymmetric information provided by the politicians to the voters. Voters focus on their short-term benefit i.e., a tax cut and higher spending on public goods which accumulates debt. Where the voters are active and they want to have information about the economic situation, politicians provide asymmetric information to save their interest. Alesina and Passalacqua discussed the political stunts that politicians use to extract the maximum and life time benefit from their govt. Fiscal illusions of tax cut and high expenditure on public goods is created to win the elections. Political budget cycle will be small if there is transparency in the governance. Political budget cycle is created when politicians spend the govt. revenues to save their interest. Politician prefers to spend on the visible low economic return public goods rather spending on education health etc. Politicians delayed the stabilization process by using their veto power to block the policies which contradicts their interest. According to Alesina and Andrea Passalacqua the social, culture and history contributes in the institutional structure of the country which also influence the govt. debt. Politician also uses debt as the state variable; if there is no surety of reappointment of the govt., they increase the deficit by higher spending and by accumulating debt to generate the constraint for the future govt. policies or actions as a result future govt. have to cut the spending in order to finance the debt. Behind all the political stunts rent seeking is the main interest of the politician. For the sake of rent extraction, they influence the budget institution and its redistribution. Alesina and Passalacqua argued that transparency and accountability will help to get rid of the bad political economic institutions.

The study of Taydas & Peksen (2012) has founded that social welfare spending paly an important role in mainiting peace in country. This study founds that welfare spending decrease the risk of civil conflict and maintain the peace in the socity.

Fleck (2008) argued that voter brings about big policy change. He has analyzed the behavior of voters during great depression and the migration of African people to America. During the great depression, voters used their voting right to change the government in order to change the policies. In case of migration Policy change occurred when African people migrated in America which had increased the number of voters. Thus, the political factor – electoral weight – and economic condition – policy outcomes – lead a change in policies.

Afonso (2008) has used panel data for two sample sets of OECD countries and EU countries to find out that which factor determines the economic growth of the country. Government revenue and government expenditure determined the budget, debt and economic of the country. The results have shown that the increase in total revenue ad total expenditure tend to decrease output by 0.12 percent in OECD countries and 0.13 percent in EU countries. The volatility of total expenditure has negative and significant effect on economic growth for EU countries not for OECD countries. The size and volatility of government revenue has negative and significant effect on economic growth for both OECD countries and EU countries. Transfers have the positive impact on the growth of EU countries only. The author has discussed the determinants of growth in terms of size and volatility of revenue and expenditures while our study focuses on the determinants of size of government with respect to political economy.

Rudra (2004) has analyzed the time-series, cross-section, and panel data sets of 35 LDCs and 11 OECD to compare the effect of globalization on the income distribution of the LDCs. The results explored that overall welfare spending has negative impact on income distribution of the LDCs while in case of OECDs welfare spending has positive impact on income distribution. The author argued that the structure of the institution is responsible for negative impact of social spending because of lobbying and clientelism. The purpose of social spending in LDCs is political control and patronage rather redistribution.

Milesi-Ferretti, Perotti and Rostagno (2002) analyzed the effect of electoral institution on the public spending in OECD and Latin American Countries. The electoral institutions are the majoritarian system and proportional system. In majoritarian system, many electoral regions/districts elect one representative, while in proportional system whole country as single district elect three representatives. His results predict that transfer spending is higher in proportional system and low in majoritarian system.

Persson and Tabellini (2002) found out the determinants of three aspects of fiscal policy, such as budget deficit, social welfare spending and public spending. The author concluded that fiscal policies are not only influenced by the cultural, political, social, demographical, geographical and historical aspect but also influenced by the constitutional features.

Persson and Tabellini (2000), has adopted the political economic approach to analyze the economic policies, because the economic analyses are not sufficient to explore the political phenomena. Thus, the political economic approach is an alternate to explain the behavior of economic policies under the umbrella of political institutions. Redistribution of income occupied an important place in the structure of public spending. The general redistribution pattern is discussed under the umbrella of general-interest politics. The size and structure of the redistribution program depends on the voter's preferences. Thus, the redistribution program is determined by the median voter equilibrium. The general transfers include pension programs, assistance to the poor, unemployment insurance, and labor market regulations are determined by the age profile of the population, distribution of income, concentration of risk, and size of each jurisdiction, respectively. While on the other hand, the narrowly determined redistributive programs are discussed under the special interest politics. Such programs target a specific group. Thus, the size and structure of redistributive program is determined by the institutions of lobbying, legislative bargaining and electoral competition.

Schram (1991) has discussed that welfare spending decreases poverty and welfare dependancy. The author has compared the pre-transfer or pre-welfare poverty by excluding each and every type of welfare spending of government with post welfare poverty rate by including all the welfare spending. The author suggested that welfare spending reduce poverty and dependency as it enable the poor to achieve the basic needs such as educational and health facilities.

Mogull (1990) has analyzed the effect of economic and political factor on the welfare public spending in USA. In his study the dependent variable is public welfare expenditure and independent variables are level of economic activity, political control, poor below the poverty line – the needy people, the tax burden, Reagan budget, social trend, and war. He reveals that public spending is positively related to the need, tax burden, affordability, wars, trend and Regan administration, and inverse relationship with strength of Democratic Party and national income. Hasenfeld & Rafferty (1989) have investigated that the demand for social rights or citizenship rights lead the welfare state program. These social rights are determined by the social ideology, economic individualism, social equality, work ethic and collective responsibilities. The study revealed that welfare state programs are determind by the socially and economically vulnerable groups which will be stronger in future.

Pampel & Williamson (1988) founded that theories of welfare states differ from the industrialized countries in many dimesnsions. They found the social, demograhic, political, adminstrative determinants of welfare spending to test the theories in industrial democracies. The resultes show that economic, political, and demographic variables are more significant to the social welfare spending than Class and state variables.

Tanzi (1997) has discussed the role of the government and its determinants such as social; attitude, level of economic development, the degree of openness of the economy, technological developments, and quality of the public administration. Moreover, the author has discussed the increasing intervention of the government in the economy and its consequences. He has also explained the positive and normative role of the government. He concluded that the political, social, economic and administrative constraint on the policy making of state is restricting the role of state by privatization, by reduction on the trade tariffs, by reducing the control over interest rate, credit and prices.

Darzen (1997) has discussed that what the political economic concern are behind the financing government expenditures via debt rather taxes. He explained that govt. issue debt to avoid tax distortions and to create short-run stability. Another reason could be to create crowding out effect as domestic debt crowds out investment and capital accumulation. Debt is also issued to constraint the decisions of future govt.

According to Persson and Tabellini (1997) political economy plays an important role in macroeconomic decision making. Institutions are important determinates of policy because it may deviate the optimal policy from its path. They have discussed the political economic concerns of monetary policy, fiscal policy and growth. In part of fiscal policy, they have discussed govt. debt issue and taxation of wealth. In case of govt. debt issue, according to them, the maturity structure of govt. borrowings and spending is influence by political preference of two parties. The ruling party formulates the policies according to the probability of re-election in the govt. If there are chances of re-election, the party will adopt the efficient debt policy. If there are less chances of re-election of the party, the party will increase the public spending in its current year of rule, and adopt the inefficient debt policy or raise the debt to high level, to subject the future spending of another govt. In third part of Politics and Growth, they have addressed the question, “political factors or political institutions are correlated with long term economic growth”. Income distribution, political instability like frequent regime change and political unrest or violence offset the economic growth while better protection of property rights is positively related to economic growth.

Income inequality is described as unbalanced distribution of income among population of country. According to Meltzer and Richard (1981) there is positive relationship between income inequality and size of the government. They postulated that high income inequality will become the characteristic of median voter which will pressurize the government to increase the size of the government. While on the other hand, Benabou (2000), Furman and Stiglitz (1998) have founded inverse relationship between income inequality and size of the government. According to them high income inequalities raises cost of redistribution as a result redistribution of wealth remain low. While in times of low-income inequality, redistribution is kept high to avoid future inequalities. Lee and Roemer (1999), Alesina and Perotti (1994 and 1996) and are point of the view that political interest of stockholders influence the redistributive policies by ignoring the economic impact. Rent extraction, office occupation, creation of hindrance in the performance of next government is the main political interests. Authors have discussed that redistributive policy.

Business cycle is defining as the ups and downs in the long term trend of economic growth. There are four phases of business cycle i.e. boom, recession, depression and recovery. Gavin and Perotti (1997) have discussed the nature of fiscal policy in Latin America. He argued that fiscal policies of Latin America are pro-cyclical i.e. In time of prosperity fiscal policy expands and in time pf depression or recession fiscal policy tend contract. Talvi and Vegh (2000) discussed that fiscal policies are pro-cyclical in nature in developing countries while a-cyclical in nature in developed countries. Kaminsky, Reinhart, and vegh (2004) have discussed that counter-cyclical, a-cyclical and pro-cyclical fiscal policies are supported by Keynesians, neoclassicals and political economist. Piana (2001) argued those political institutions that determine the nature of anti-cyclical or pr-cyclical. Thus, expansion and contraction of tax base and rate, debt accumulation, and public spending are determined by the nature of political institutions.

The literature presented on SAARC countries focus on the social, regional and human development issues, institutions of SAARC treaty, issues in trade, economic growth, and political structure influencing the regional cooperation. There is lack of academic literature investigating the role of macroeconomic policies in development of SAARC countries. However, much work has been done on the determinants of public spending and social welfare spending in developed countries like OECD, EU, and USA etc.

ECONOMETRIC METHODOLOGY AND DATA

Data and Variables Description

The model has constructed for panel analysis. There are total 8 countries in SAARC treaty, Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka but we took 6 countries due to data availability. The data is on 6 countries for 21 years from 2001 to 2021.

The institutional variables are government effectiveness (GE), political stability (Pols), regulatory quality (rq), and voice and accountability (va). The economic variables are total tax revenue(ttr), total debt (td), output gap (ygap), balance of trade (bot), and income equality (gini). While The population ages from 15 to 64 (pop1564), and population ages from 65 and above are the demographic indicators.

The data for institutional quality is collected from world Governance Indicator (WDI), economic indicators and demographic indicators from the database of world bank. Proxy has been used for Gini coefficient as data were missing for few values. Residuals of real GDP are used as output gap. Further, Total tax revenue, total debt, output gap, and balance of trade is used as ratio to GDP.

Econometric Methodology

In this study panel data is used which includes time period of 21 years and 6 SAARC countries as cross-section entities. The data is balanced panel data because each panel has same number of observation. Either Random effect or fixed effect techniques are used to analysis the panel data. On the basis of the assumptions and the complexity of data, Borensteina, et al. (2010), Nickell (1981), Laird and Ware (1982), Menegaki (2010) have argued that for micro panel analysis the fixed effect and random effect techniques are suitable. The selection of technique is done by Durbin-WU-Hausman test. The null hypothesis of Durbin-Wu-Hausman test selects the random effect technique as efficient technique and alternate hypothesis goes in the favor of fixed effect model. Fixed effect model assumes that there is correlation between the individual specification effect and independent variable. It implies that the variables in the model are correlated with other variables which are ignored and their impact is captured in error term. While Random effect model assumes that there is no correlation between the individual specification effect and independent variable. It implies that the variables in the model are not correlated with other variables which are not included in the model and their impact is captured in error term. The Durbin-WU-Hausman test has used to detect the best technique to estimate the model and the test suggested the fixed effect technique to estimate the balanced panel data.

The functional form of the model is

$$PS = f(GE_{it}, pols_{it}, rq_{it}, va_{it}, ttr_{it}, td_{it}, ygap_{it}, bot_{it}, gini_{it}, Pop15-64_{it}, Pop>65_{it}) \quad (1)$$

The econometric equation is:

$$PS = \alpha_i + \beta_1 GE_{it} + \beta_2 pols_{it} + \beta_3\, rq_{it} + \beta_4 va_{it} + \beta_5 ttr_{it} + \beta_6 td_{it} + \beta_7 ygap_{it} + \beta_8\, bot_{it} + \beta_9 gini_{it} + \beta_{10} Pop164_{it} + \beta_{11} Pop65_{it} + \mu_{it} \quad (2)$$

The and are the parameters of the regressors in equation (2). The is the error term which has cross sectional unobserved heterogeneity and stochastic error due to other variables.

RESULTS AND INTERPRETATION

Before estimating the final results, the data has passed through the tests of Normality, Multicollinearity The VIF test is used for multicollinearity test. Multicollinearity has not found. The results are given below in table 1:

Table 1: Results of VIF Testing

Variable	VIF	1/VIF
Rule of Law	5.56	0.0645
Control of Corruption	2.43	0.0804
Government Effective-ness	6.29	0.159
Political Stability	5.52	0.181
Total Debt	5.17	0.1934
Gini Coefficient	4.97	0.2011
Balance of Trade	3.85	0.2598
Voice and Accountability	3.4	0.294
Population ages from 15 to 64 years	2.77	0.3606
Total Tax Revenue	2.53	0.3952
Regulatory Quality	2.47	0.4047
Output gap	1.97	0.5072
Population Above 65 years	1.86	0.5365
Mean VIF	5.29	

We start our estimations from pooled panel regression, the results are given below in table 2:

Table 2: Results of Panel Pool Regression

Public Spendings (PS)	**Coef.**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf.**	**Interval]**
Government Effectiveness (GE)	3.6161	1.3328	2.71	0.008	0.9786	6.2536
Control of Corruption (CC)	-4.0171	1.2025	-3.34	0.001	-6.3969	-1.6374
Political Stability (Pols)	2.466	0.5232	4.71	0.000	1.4306	3.5013
Regulatory Quality (Rq)	3.6767	1.0576	3.48	0.001	1.5838	5.7696
Rule of Law (Rl)	-4.9034	1.9474	-2.52	0.013	-8.7574	-1.0495
Voice and Accountability (VA)	0.691	0.9778	0.71	0.481	-1.2439	2.6260
Total Tax Revenue (Ttr)	0.9259	0.1396	6.63	0.000	0.6497	1.2022
Total Debt (Td)	0.1183	0.024	4.94	0.000	0.0709	0.1657
Output Gap (Ygap)	-0.0007	0.0013	-0.57	0.569	-0.0033	0.0018
Balance of Trade (bot)	0.054	0.0479	1.13	0.262	-0.0408	0.1488
Gini Coefficient	3.5611	1.0946	3.25	0.001	1.395	5.7272

Population from 15 years to 64 years	0.2627	0.0824	3.19	0.002	0.0997	0.4257
Population above 65 years	-1.7943	0.1997	-8.98	0.000	-2.1896	-1.3991
_cons	-12.5017	6.0485	-2.07	0.041	-24.4715	-0.5319

The results of table 2 indicate that most of the variables are significant. But the residual analysis results in table 3 given below indicate that there is heteroscedasticity in the residual.

Table 3: Results of White and IM Tests for Heteroscedasticity

Source	chi2	df	P
Heteroscedasticity	136.02	103	0.0163
Skewness	28.67	13	0.0073
Kurtosis	5.22	1	0.0224
Total	169.91	117	0.001

The results in table 3 show that there is still heteroscedasticity in the residual because the test values are significant at 5% level of significance. That is why we shift to fixed-random effect modeling. The Durbin-WU-Hausman test suggests that the fixed effect is the appropriate model for our analysis. The results of fixed effect model are given below in table 4.

Table 4: Results of Fixed Effect Model

Public Spending (PS)	**Coef.**	**Std. Err.**	**t P>|t|**	**[95% Conf.**	**Interval]**
Government Effectiveness (GE)	0.3820	1.4067	0.786	-2.4027	3.1666

Political Stability (PS)	0.1012	0.5281	0.848	-0.9443	1.1466
Regulatory Quality (Rq)	-0.6595	0.8143	0.420	-2.2716	0.9525
Voice and Accountability	1.8094	0.8393	0.033	0.1479	3.4709
Total Tax Revenue (TtR)	0.3086	0.1326	0.022	0.0462	0.5711
Total Debt (td)	-0.0267	0.0205	0.194	-0.0672	0.0138
Output Gap (ygap)	0.0014	0.0009	0.109	-0.0003	0.0032
Balance of Trade (bot)	0.0051	0.0327	0.876	-0.0597	0.0699
Gini Coefficient (gini)	1.2893	0.9403	0.173	-0.5721	3.1507
Population from 15 years to 64 years (pop1564)	0.1611	0.0890	0.073	-0.0151	0.3373
Population above 65 years (Pop65)	-0.6294	0.3027	0.040	-1.2286	-0.0302
_cons	6.5935	6.2264	0.292	-5.7323	18.9193

The fixed effect model explored that only one institutional indicator that is 'Voice and Accountability (VA)' has significant and positive impact on public spendings of SAARC region. In case of economic variables, only total tax revenue has positive and significant impact on public spendings. And on the demographic indicators, both variables have significant impact. But population more than ages of 65 years have negative impact on public spending, while population ages from 15 to 64 has positive impact. Government effectiveness (GE), political stability (Pols), Regulatory Quality (Rq), total Debt (td), balance of trade (bot) is highly insignificant.

Among institutional, economic, and demographic indicators, only all demographic indicators are highly significant. As SAARC region consists of two countries India and Pakistan which includes in high populated countries of the world. People above 65 years have negative and significant impact on public spendings. As ratio of people increases in senior citizens, public spendings goes down. Senior citizens are considered burden on the economy, as economy has to pay them pensions, they are the part of welfare schemes etc. While people ages from 15 to 64 are the productive asset of the economy. As the ratio of the age group increases in population, public spending of the region increases. People from this age are mostly involved in economic activities. In case of institutional indicators, only a single variable is influencing the public spending that is voice and accountability. As, accountability increases, so, public spending increases. SAARC region is one of the regions which consists of highly corrupt countries due to which accountability is nearly absent similarly 'voice'. The person who raises voice or the party who raises voice against corrupt system are subject to different sentences. In last, the economic indicator, Total Tax revenue is the main determinant of public spending. But due to high rate of corruption government face tax avoiders and evaders. SAARC region has to focus on the policies which could increase the accountability in the region, reduces corruption, implement rule and law etc. The region has to pass such laws and regulations that could scan tax avoiders and evaders. The region has to develop a joint policy system to increase its tax base. And the SAARC region must focus on its population's skill development so that as much as people can work in early and last ages. Among all these policies SAARC region has to focus on voice and accountability in region.

CONCLUSION

From the empirical analysis we have found that among all the significant determinants, the impact of voice and accountability is higher than other significant factors. The change occurs due to voice and accountability is 1.809 while the change due to total tax revenue is 0.308. Population ages from 15 to 64 brings change of 0.1611 while population more than 65 years brings -0.6294 units change in public spending. The SAARC region has to focus on institutional reforms in the region so that it may avoid corrupt system. Among demographic variables, population ages from 65 and above have greater impact. The SAARC region has to focus on the human development so that people of these ages may work in that age also.

FUTURE RECOMMENDATION & FUTURE RESEARCH

In case of institutional indicators 5 indicators out of 6 i.e., Government effectiveness, control of corruption, political stability, regulatory control, and rule of law are significant to size of government. Policy makers of SAARC region must focus on betterment of institutional framework so that SAARC countries may open new capacities in trade which will expand the size of government. Secondly, demographic variables are highly significant especially population above 65 years have negative impact on public spending. SAARC region must revise their employment policies and social welfare policies so that they can generate more employment opportunities and reduce the burden on government expenditure. Moreover, they should also adopt adequate demographic policies which can control the population growth. In case of economic indicators, income inequality has significant and positive impact on size of government. SAARC region must adopt more strong distribution policies which could reduce income inequality which in turn increase size of government.

In future research, same study can be conducted for development expenditure and social welfare expenditure. Secondly, more political indicators such polity and democratic indicators may be added to the study. Moreover, Same study can be compared with European region and OECD countries by applying GMM methodology. Thirdly institutional impact can be trace on revenue generating capacity of SAARC region

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