CHAPTER 2

REVIEW OF LITERATURE

Introduction

The present study examines the causal nexus between government expenditure and Economic growth. Besides, it attempts to investigate the socio-economic and political determinants of public expenditure in Kerala. In this context, it is essential to examine the earlier literature pertaining to these issues which will enable us to identify the gap of the study. For simplicity and clarity the earlier studies pertaining to the above issues are classified as:-

(1) Studies pertaining to causal nexus between public expenditure and economic growth and

(2) Studies related to socio-economic and political determinants of public expenditure.

Studies Pertaining to Causal Nexus Between Public Expenditure and Economic Growth

Gupta (1968) examines the relationship between public expenditure and levels of economic development with a cross section sample of 53 countries. The relationship is examined by comparing government expenditure as a share of gross national product and per capita income. The main conclusion of the study are (i) the ratio of government expenditure to gross national product increases at a diminishing rate with increasing level of economic development.
(ii) Geographical location of a country is one of the main determinants of public expenditure.

S. Lall (1969) examined the relationship between per capita income and the size of the government expenditure for 46 developing countries for the year 1962-64. Simple regression analysis was carried out to examine the objective. Besides, the selected countries were divided into three income groups to identify the existence of differences in the results pertaining to the relationship between public expenditure and growth. The criteria for grouping the countries are:

(i) Per capita G.N.P. upto $124,

(ii) Per capita G.N.P. of $125 to $249, and,

(iii) Per capita G.N.P. of $250 to $675.

The main conclusions of the above analysis can be summarised as follows:

(i) There was no significant relationship between per capita gross national product and government expenditure as a percentage of gross national product for any group of countries.

(ii) No significant relationship between per capita gross national product and total current expenditure for any group of countries.
(iii) Social service expenditure as a percentage of total expenditure are not at all increased with the rising incomes of any group of countries.

(iv) Education expenditure as percentage of total government expenditure increased for group (i), (ii) and (iii) groups together.

(v) Health expenditure also showed a raising trend whenever there is a rise in income for groups of countries (i) and (ii).

(vi) Expenditure on agriculture as a percentage of total expenditure and gross national product showed a consistently declining trend for groups (ii) and (iii) and all those taken together.

(vii) Expenditure on transport and communication as a percentage of total expenditure for group (ii), (iii) and all three groups together showed an increasing trend.

(viii) Expenditure on economic services as a percentage of total expenditure reveals a fairly low correlation coefficient with gross domestic product for the two richer groups.

Richard E Wagner and Warren E Weber (1977) attempted to investigate the validity of Wagner's Law for the year 1950-72 pertaining to 34 countries. The necessary information for this study are collected from the International Financial Statistics. The analysis revealed that Wagner's law is invalid in most of the selected countries.
Daniel Landau (1983) attempted to investigate the relationship between the share of government consumption expenditure to gross national product and real per capita gross national product. To examine the objective, he selected a sample of 104 countries for the year 1960-77. The analysis reveals that there is a negative relationship between the share of government consumption expenditure in gross domestic product and per capita gross domestic product for all the selected countries.

Tripathy (1985) examines the problems of public expenditure and economic growth in underdeveloped countries. According to him, economic development requires large investment expenditure for the creation of social overhead capital which in turn will facilitate the development of both manufacturing industries and agriculture. Thus, the role of public sector in the disposal and command over national resources tends to increase. The socially desirable productive investment tends to occupy an important role in every day public expenditure. The greater the rise in administrative expenditure the lesser the resources available for capital formation. Thus, it becomes necessary to decrease administrative expenditure. Hence, he advocates that the developing countries have to take necessary steps to bring about an adequate rate of growth in their revenues and at the same time they must put an effective restraint on the marginal propensity to consume in the government sector.
Rati Ram (1986) examined the cause of nexus between public expenditure and national income for 63 countries. He used the data collected by Sumers and Heston (1984) which contains international comparable data on gross domestic product and government expenditure for the year 1950-1980.

Granger Causality test is employed to examine the causal nexus between government expenditure and national income. Besides dummy variable has been introduced in the estimated equation to capture the structural shift due to oil shock of 1973. The analysis concluded the existence of causal nexus between income and government expenditure in selected countries but the pattern of causality differ across the selected countries which may be due to vast differences in their socio-economic and political features.

Ashan et.al (1989) revealed the diverse set of causality results across the 24 selected OECD countries basically supporting bi-directionality as the dominant possible pattern of causality between public expenditure and national income with a few of them confirming the Keynesian view. Similarly the studies such as Sahni and Singh (1984a, 1984b) and Singh and Sahni (1986) for Canada, India and United States respectively also exhibited bi-directional relationship between the public Expenditure and National income.

James M. Holmes and Patrica A. Hutton (1990) examined the relationship between government expenditure and national income for the year
1950-81. Multiple rank ‘F’ test is employed to examine the objective. They concluded the validity of Keynesian hypothesis.

Diamond (1991) examined the contribution of government expenditure to the growth process with respect to both developed and developing countries. A widely used growth model of Dennison was employed to examine the objectives. His major findings are:- (i) basic infrastructural investment is a requirement of economic growth, (ii) a higher composition of total government spending is important for economic growth.

Afxentiou and Serleties (1991) employed Granger and Sims causality test to examine the causal relationship between government expenditure and gross domestic product for Canada for the year 1947 to 1986. The test results reveal the rejection of Wagner’s law. This rejection is due to the complexities of government spending that results in as government budgets are instruments designed to deal as sufficiently and institutionally possible with a host of ever changing economic, political and social problems.

Bhat et.al. (1991) examined the causal nexus between public expenditure and national income of Indian states. They employed Granger, Sims and multiple rank ‘F’ test, to examine the objective. The study is based on annual data and related to the period 1969-70 to 1989-90. Since the Granger test is sensitive to lag-length, an attempt has also been made to estimate the appropriate lag length, using Akaike final prediction error.
criterion. The findings of the study though not consistent across the test, by and large support the Keynesian view establishing the direction of causation from public expenditure to income.

**Studies Related to Determinants of Public Expenditure**

The pioneering study pertaining to the determinants of public expenditure has been the one by Fabricant (1952), in the U.S.A. and his 'Triko'. three variables. cover per capita income, degree of urbanization and density of population to explain 72 percentage of the variations in expenditure differences among states.

Martin and Lewis (1956) attempted to identify what patterns of public revenue and expenditure are appropriate to different levels of development. For the year 1953-54, a sample of 16 developed and developing countries was considered to examine the objective. They inferred that countries which make serious development effort must be expected to spend between 19 to 22 percentage in their gross national product. Besides, this study also stressed the importance of ideology as a determinant of government expenditure.

Earnest Kurnew's (1956) model explains more satisfactory the variability in per capita state and local expenditure of United States in 1952, than Fisher's or Fabricant's study. In order to improve the predictive ability of the model, the variable such as federal grants-in-aid, per capita personal income, degree of urbanisation, per capita federal aid, and student teacher ratio
were considered. The study reveals that per capita income, degree of organisation and federal grant are having positive relationship and student teacher ratio is having a negative relationship with per capita state and local expenditures.

Fisher (1961) examines the variations of state and local expenditure in terms of per capita income, density of population and urbanisation in 48 states of the United States in 1957. His analysis reveals that the density of population has a negative relationship with all expenditure except expenditure on police and fire protection. Besides, urbanisation is directly associated with increased expenditure except in the case of higher education, highways and natural resources. Thus, variations in population density, degree of urbanisation and per capita income explain the most part of the variation in per capita state and local government expenditure among the states.

Williamson (1961) considered a sample of 30 countries for the period 1950-57, to eliminate the bias from which the study by Martin and Lewis suffered due to their sample mainly consisting of welfare states. To examine determinants of public expenditure, Williamson employed double logarithmic function. His analysis revealed that industrialization, urbanization and per capita income are the main determinants of public expenditure.

Sacks and Harries (1964) attempted to investigate the factors influencing state and local government expenditure of U.S.A. by introducing state and
Federal aid as an additional explanatory variable. The analysis revealed higher levels of $R^2$ value (0.869) compared to earlier studies.

Bahl and Saunders (1965) identified the determinants of changes in expenditure of U.S.A. by using explanatory variables such as per capita income, density of population, urbanization, grants and public school enrolment. They identified that federal aid is the most important determinant of public expenditure.

Sharkansky (1967) found that the current level of state expenditure in U.S. is best explained by previous state government expenditure. Besides, the incorporation of previous expenditure as an explanatory variable provides an explanation for stability of government expenditure from one year to another.

Reddy (1972) examined the secular trend of public expenditure of India for the period 1872 to 1968. Besides, he made an effort to establish a theoretical link between growth of public expenditure and national income of the country. He concluded in his analysis that Wagner’s law and displacement effect are valid on account of two World Wars.

Enweze (1973) investigated the trends in public expenditure of a sample of 15 developing countries over a decade. Besides, he investigated the responses of public expenditure due to increase in income. The analysis revealed that the mean elasticities of public expenditure on administration.
defense and education are relatively higher than other items of expenditure. Besides, he found out a low rank correlation between growth of public expenditure and per capita income. This reveals that factors other than real income were also responsible for the behaviour of public expenditure.

Henning and Taussig (1974) attempted to investigate the determinants of public expenditure in U.S. for the year 1900 to 1971. The main findings of the study are (1) the elasticity of non-defense expenditure with respect to income is quite high (1.5) in the long run. (2) The short run public expenditure elasticity is relatively low owing to apparent sluggishness of government in responding to income changes and (3) Increasing defense spending appears to be at the expense of non-defense expenditure.

Diamond (1977) examined the supply factor in addition to demand factors influencing public expenditure on growth. The study revealed that for the poor developing countries the ability to raise finance is crucial in determining the level of public spending.

Niskanen (1978) tested the influence of federal deficit on increasing federal spending. The logical derivation of the estimated function for examining the above objective is that the demand function of the government functions for the average voter-taxpayer is shown below:

\[ Q = a (T_c)^b Y^c A^d \] .................(1)
The product AC shows that demand function for federal spending by the average voter-taxpayer.

\[ QC = a T^b C^{1-h} Y^c A^d N \] ........................(2)

The product ACN, where N is the number of voter-taxpayers, leading to the demand function for total federal spending.

\[ QCN = a T^b C^{1-h} Y^c A^d N \] ........................(3)

The variable T shows function of the fraction of federal spending financed by current taxes and the total number of voter-taxpayers as follows:

\[ T = (R/X)(1/N) \] ..........................(4)

Where,

\[ R = \text{Total federal tax revenue, and} \]

\[ X = \text{total federal spending (QCN)} \]

The variable C is assumed to be a function of the average wage rate in the private sector and the total number of voter-taxpayers.

\[ C = e W^f N^g \] ..........................(5)

Where, \( W = \text{the average private sector wage rate} \)

Substituting equation (4) and (5) into equation (3) leading to the following test equation.

\[ QCN = a[CR/X](1/N)]^b [eW^f N^g] 1 + b Y^c A^d N \] ..........................(6)
The above equation has been estimated by ordinary least squares in both the level and first difference form, using an annual time series sample for the period 1947 - 1976. The author concludes that there exist a positive relationship between federal deficits and the level of public spending.

Craig and Heins (1980) examined the effect of elasticity of tax structure on state government spending of U.S. The ordinary least square and two stage least square methods were employed by using the pooled data for the year 1970 and 1975, to test the hypothesis. The variables included for testing the hypothesis are per capita present income, per capita federal aid, density of population, percentage of urban population, percentage of population above 18 years, percentage of state and local revenues originating at state level and elasticity of tax structure. The analysis reveals the positive association between elasticity of tax structure and levels of spending by the state governments.

Letz (1980) examined the variation on the composition and size of government expenditure among thirty seven developing countries and the factors which influence government expenditure decisions by using cross section data. He classifies expenditure into economic services, education and health, social welfare and defence, and relates these types of expenditure with six socio-economic variable namely per capita income, percentage of population living in urban areas, exports of minerals and oil as percentage of gross national product, literacy rate and notes and coins per capita. He finds a
closer relationship between welfare expenditure and degree of organisation, literacy rate, per capita income and degree of monetisation. Besides, education and health expenditure is closely related to openness and per capita income. The defence expenditure and per capita income are found to have negative relationship.

Govinda Rao (1981) expressed that ideological leanings of the parties in power do not affect significantly the level of expenditure in the states but it tend to create imaginary "output differentials". On the stability considerations, less stable government tended to increase significantly higher levels of expenditure, particularly on social and economic services.

Dilorenzo (1982) test the hypothesis that higher levels of income elasticity of tax lead to higher levels of public expenditure due to fiscal illusion. To test the hypothesis he employed the following two models for a sample of 66 states for the year 1967-1977:-

\[
\Delta E_i = a + b_1 \Delta \text{POP}_i + b_2 \Delta \text{DENS}_i + b_3 \Delta \text{PCI}_i + b_4 \Delta \text{IGR}_i + b_5 T_i + e_i
\]

\[
\Delta E_i = a + b_1 \Delta \text{POP}_i + b_2 \Delta \text{DENS}_i + b_3 \Delta \text{PCI}_i + b_4 \Delta \text{IGR}_i + b_5 T_i + e_i
\]

Where,

\[
\Delta E_i = \text{Change in per capita expenditure in the ith country, at 1967 prices during the 1967-1977 period.}
\]

\[
\Delta \text{POP}_i = \text{Change in Population in the ith country during 1967-1977.}
\]
\[ \Delta \text{DEN}_i = \text{Change in Population density during 1967-1977}. \]

\[ \Delta \text{PCI}_i = \text{Change in per capita income}. \]

\[ \Delta \text{GR}_i = \text{Change in inter governmental revenue at 1967 prices}. \]

\[ T_i = \text{Ratio of percentage change in total tax revenues to percentage change in per capita real income in the ith country during 1967-77}. \]

\[ O_t = \text{Oate’s measure of tax elasticity, i.e., the ratio of income tax revenues to total tax revenues}. \]

\[ a = \text{Constant, and} \]

\[ e_i = \text{random error term}. \]

The analysis reveals that there is a direct relationship between income elastic tax structure and growth of public expenditure.

Datta (1985) examined the determinants of public expenditure pertaining to West Bengal economy for the year 1951-52 to 1973-74. He has classified expenditure into revenue capital and non-development expenditure. The explanatory variables considered for examining the determinants of public expenditure are per capita income, degree of urbanisation, grants, tax revenue etc. His analysis reveals that per capita income is the positive determinant of public expenditure.
Mann and Schultuses (1986) have carried out an analysis of expenditure determination in Argentina’s public spending during the period 1930-1977. Public expenditure has been disaggregated into (i) current expenditure on (a) wages and salaries, (b) impersonal goods and services (c) transfer of families, and (ii) capital expenditures. The explanatory variables under four broad concepts are: - (1) under economic factors – (i) real gross domestic product, (ii) ratio of exports to gross domestic products, (iv) foreign trade co-efficient, (v) manufacturing sectoral share of gross domestic product; and (vi) agricultural sectoral share of gross domestic product: (2) under monetary factors – (1) money supply and (ii) inflation rate (3) under financial factors:- (i) total tax revenue (ii) personal tax revenues (iii) per capita personal income tax revenue, and (4) under political factors: - (i) president elected by popular vote or not (ii) civilian or military president and (iii) year in which new president took office. Thus, this analysis covers all the economic, financial, monetary and political factors to predict the changes in the expenditure of the state. The main findings of this model are that real per capita gross domestic product tends to pull the expenditure output ratio upward while the tax revenue and non-elected government acts in the opposite direction, whereas the civilian and popularly elected government administration tends to increase the spending levels. The rate of inflation influences the expenditure output ratio both inversely and directly and tax revenue also influences capital expenditure. There is a direct relationship between real gross domestic product per capita
and the transfer share of gross domestic product. According to this model, rate of economic growth based on gross domestic product, political factors and rate of inflation mainly influences the public spending of Argentina.

Abizadeh and Yousefi (1988) attempted to investigate the impact of economic and political factors on the growth of government expenditure in Canada. The model employed for examining the determinants are:

\[ \ln ERT = \ln a + \beta_1 \ln (OP_t) + \beta_2 \ln (DR_t) + \beta_3 \ln (U_{t-1}) + \beta_4 \ln (PF_t) + \beta_5 \ln (Y_{t-1}) + \beta_6 \ln (LFGR_t) + e \]

Where:

- \( ERT \) = Ratio of public expenditure to gross national product.
- \( OP_t \) = Degree of openness of an Economy,
- \( DR_t \) = Dependency ratio,
- \( U_{t-1} \) = Rate of unemployment,
- \( PF_t \) = Political factor,
- \( Y_{t-1} \) = Real GNP growth rate,
- \( LFGR_t \) = Ratio of labour force employment by government to the total labour force, and
- \( e \) = random error term.
The analysis reveals the following observation: (1) There is a direct relationship between dependency ratio and the Federal Government expenditure on social goods and services. (2) Higher rate of unemployment in t-1 year leads to higher levels of growth of public expenditure. (3) The size of the government expenditure increases whenever liberal party is in power and (4) Growth of real income is positively associated with growth of public expenditure.

Reddy K.N. (1988) examined the determinants of public expenditure in India. Multiple linear regression equation is employed to examine the objective. The analysis revealed that the determinant factors such as level of economic development, social, cultural and political philosophy of India, technical change and urbanization explained 99 percentage of growth of government expenditure. Besides, he concluded that the level of development has been the major factor for the growth of government expenditure which means that the growth of government expenditure is unavoidable in the future years.

Sham Bhat and Umashankar Patnaik (1991) examined the determinants of public expenditure and their variability between Congress and Non-Congress governments. Multiple Linear Regression equations are employed to examine the objectives. The analysis was conducted on the basis of cross section data in 22 Indian states such as Andhra Pradesh, Assam, Bihar, Gujarat, Haryana,
Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Megalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal for the year 1985-86.

The analysis reveals the following observation:

(1) Per capita income, Primary Sector Contribution, Literacy Rate and Percentage of Scheduled Caste and Scheduled Tribe in total population have a positive influence and density of population has a negative influence on per capita total expenditure. (2) The determinants of per capita expenditure on health are per capita income, literacy rate proportion of Scheduled Caste and Scheduled Tribe in total population. (3) The factors such as literacy rate, Density of population and percentage of Scheduled Caste and Scheduled Tribe in total population are determinants of social welfare. (4) The expenditure on administrative services are mainly influenced by density of population and percentage of scheduled caste and Schedule Tribe in total population (5) Primary sector contribution, Density of population and proportion of Scheduled Caste and Scheduled Tribe in total population are the main factors influencing expenditure on Economic services. (6) Congress government seem to spend lesser amount on expenditure on education, Economic services and total expenditure of the state than that of non-Congress government. Besides the policy related to health, social welfare, housing and administrative services are one and the same in both Congress and non-Congress governments.
Sham Bhat and Varalakshmi (1994) examined the impact of socio-economic and political factors on different components of inter state expenditure. They selected 22 Indian states at three points of time from their study i.e. 1969-70, 1980-81, and 1988-89. To identify the determinants of public expenditure across the state the log linear multiple regression analysis was carried out. The analysis revealed the following observations: (1) With regard to socio-economic factors influencing Indian State expenditure, there is a difference in the determinants of each item of State expenditure in different points of time. This may be due to change in the expenditure policy of the state government. (2) Even a single item of state expenditure is not influenced by political variable in 1969-70. (3) In 1980-81, expenditure on health, revenue expenditure, development revenue expenditure, revenue expenditure on education, and expenditure on administrative services are mainly influenced by political factors. (4) In 1988-89, change in the party in power is significantly influencing capital expenditure, development capital expenditure, expenditure on education and expenditure on administrative services. (5) From the above results it can be inferred that in the third phase (1977 onwards) political variable is one of the important determinants of public expenditure in Indian states.
Concluding Remarks

The present chapter examines the earlier literature pertaining to the verification of Wagner's law of public expenditure and determinants of public expenditure. The earlier work pertaining to Wagner's law of public expenditure reveals the following observation:-

(i) Public expenditure causes national income,

(ii) National income causes public expenditure, and

(iii) Bi-directional relationship between public expenditure and national income.

The above results differ across different studies and even single study does not exist relating to Kerala economy. Further, the results of earlier study may not hold good to Kerala economy due to vast differences in their socio-economic and political characteristics compared to other nations and states of India. Kerala economy is similar to less developed economy in terms of per capita income, poverty and standard of living and similar to developed country in terms of literacy, health indicators and political awareness. These reasoning led to raise one of the issues in the present study is that to what extent Wagner's law of public expenditure is valid in Kerala economy?

The earlier work pertaining to determinants of public expenditure reveals that socio-economic and political constraints are influencing on public
expenditure. However, the results of various studies differed with each other. Further, the earlier studies adopted dummy variable approach to quantify the political variable. This will lead to the problem of errors in measurement. To overcome this, we introduced political party index to quantify the political variable. Political party index is defined as the percentage of Left Democratic Front Members of Legislative Assembly to total number of Members of Legislative Assembly. On this background, another issue of the present study is that of the socio-economic and political constraints influencing various components of public expenditure in Kerala.
References


