CHAPTER: XVIII

ECONOMIC AND NON-ECONOMIC FACTORS -- A QUANTITATIVE ANALYSIS.

In this chapter an attempt is made to quantify the main economic and non-economic factors in so far as they have played a part in the attainment of economic progress in India since the Fifties of this century, particularly during the period 1951-52 to 1988-89. This covers a period of 38 years. So far as the social and other non-economic factors are concerned like expectation of life, nutritional intake, literacy, etc., we have included their empirical correlates as far as possible. But where quantification was not possible, as in the case of religious, cultural and psychological factors, we have been forced to exclude them from our quantitative analytical framework.

Our purpose in this chapter is to find out the extent to which the economic, social, demographic, educational and nutritional variables explain the changes in the growth rate of Indian economy, together as well as individually. However, in view of the fact that certain cultural and psychological factors defy precise quantification the conclusions of this exercise would remain to that extent imperfect or tentative. Nevertheless, it is contends that the factors included by us as explanatory variables determining the growth rate of Indian economy
would go a long way in providing us with a scientific understanding of the evolving dynamics of the Indian economy.

For the above purpose we have adopted a multiple linear regression model with ten independent variables and one dependent variable. It is, therefore, a 11-variable multiple linear regression model of the type -

\[ X_1 = f(X_2, X_3, X_4, \ldots, X_{11}), \text{ where} \]

\( X_1 \) (the dependent variable) denotes the annual growth rate of net national product at factor cost (at 1980-81 prices);

\( X_2 \) is gross domestic savings (deflated at 80-81 prices);

\( X_3 \) is gross domestic capital formation (deflated at 80-81 prices);

\( X_4 \) is the percentage share of primary sector to gross domestic product (at 80-81 prices);

\( X_5 \) is the percentage share of secondary sector to GDP (at 80-81 prices);

\( X_6 \) is the percentage share of tertiary sector to GDP (at 80-81 prices);

\( X_7 \) is the percentage of urban population;

\( X_8 \) is the % of working force to total population;

\( X_9 \) is the expectation of life at birth (in years)

\( X_{10} \) is the index of nutritional availability (per capita per day); and

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$I_{11}$ is the % of literate population to total population.

Before we present the results of our exercise and analyse and interpret them, it would be worthwhile making a brief study and examination of these variables individually.

The movement of real net national product at factor cost (at 1980-81 prices) reflects the overall growth of the economy. Compared to the Fifties, the annual average growth rate of the Indian economy in the Eighties was considerably large. Thus the average annual growth rate in the Fifties was 3.8% whereas in the Eighties it had risen to 5.3% which would mean an increase by 39.47%. In the Sixties and Seventies the average annual growth rate had declined to 3.52% and 3.26% respectively. In other words, compared to the Seventies when the average annual growth rate was 3.26%, the corresponding figure for Eighties is as high as 5.3% (an increase of almost 62.58%). This means that the Indian economy picked up only in the Eighties, almost thirty years after the launching of the planning era. It is striking to note that during the period 1951-52 to 1979-80 the economy recorded negative rates of annual growth in four different years, each after a common gap of about seven years.

There has been a phenomenal increase in gross domestic savings during the period covered by us. In 1951-52 gross domestic savings was hardly Rs.1005 crores (at 80-81).
It rose to a phenomenal figure of Rs. 82044 crores in 1988-89. During the Fifties the average annual rate of growth of savings was 10.53%. In the Sixties it more than doubled to 22.41%. In the Seventies it rose by 4.32% over the level of the Sixties (26.73%). In the Eighties the average annual rate of gross domestic savings fell to 18.15%. What is startling is that when the average annual growth rate of savings was as high as 26.73% in the Seventies in the same decade the average annual growth rate of the economy was lowest (3.26%), whereas in the Eighties when savings growth rate was only 18.15% the average annual growth rate of the economy was highest at 5.3%. These facts seem to suggest *prima facie* that there is no unequivocal or direct correspondence between savings and economic growth. Other factors also play their role.

So far as domestic capital formation is concerned, whereas the average annual rate of growth was 11.41% in the Fifties, it rose to 28.65% in the Seventies and, like gross domestic savings, slumped to 15.93% in the Eighties.

In terms of current prices and on an average, gross domestic savings was 11% of gross domestic product in the Fifties. This percentage rose to 19.47 in the Seventies, and compared to the Seventies it increased only very marginally to 19.89 in the Eighties. On the other hand, gross domestic capital formation was 12.57% of the gross domestic product in the Fifties. It rose to 21.8% in
the Eighties. So far as domestic savings - investment
equality is concerned the Seventies may be taken as the
break-even decade. This is not to suggest that considering
the enormity of the task of economic development the
magnitude and levels of savings and investment were
satisfactory. But there is no doubt that during the 38 years
from 1951-52 onwards savings and investment have risen
substantially.

In real terms the share of the primary sector in
the total national income has consistently declined from
56.1% in 1951-52 to 34.82% in 1988-89, whereas that of the
secondary sector has gradually increased from 15.31% in 1951-
52 to 26.91% in 1988-89. Likewise the share of the tertiary
sector has increased by 9.68 percentage points during the
above said period. From 28.59% in 1951-52 it rose to 38.27%
in 1988-89. These facts do suggest that there has been a
change in the activity structure of the economy. The
industrial and tertiary base of the economy has gradually
expanded over the years. However, this is not adequately
reflected by the occupational shifts in the economy at least
so far as the agricultural sector is concerned. For
instance, in 1980-81 about 2/3 of the working force was still
engaged in the agricultural sector and contributed about 40%
of the national income, whereas, 1/3 of the working population
engaged in the secondary and tertiary sectors were
contributing about 60% of the national income. This
indicates that the persistence of low levels of productivity
in the agricultural sector, relative to the secondary sector.

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At the same time it also indicates absence of corresponding shift of the working force from the primary to secondary and tertiary sectors.

In contrast to the expansion of industrial and tertiary base of the economy during the 38 years corresponding urbanisation is conspicuously absent. 82.63% of the population was in the rural areas in 1951-52. After 38 years in 1988-89 the proportion of rural population is still about 74%. Further, even allowing for the definitional changes of work-force in the decennial census, there has not been any substantial increase in the participation rate. A little more than just 1/3 of the population constitutes the working force. The participation rate as per the 1981 Census was just 33.5%.

So far as health and nutritional aspects are concerned there has been substantial improvements in these fields, although there is great need and scope for further improvement. The average expectation of life at birth was hardly 33.01 years in 1951-52. It increased to an estimated 59.12 years in 1988-89. Similarly, with 1980-81 as the base year, the index of per capita per day nutritional intake increased from 90.37 in 1951-52 to 109.28 in 1988-89. This is not to suggest that a large section of the population, particularly those in the rural areas and urban slums, are not below the poverty line and are not suffering from under-nutrition and mal-nutrition.
On the general educational front there has been an increase in the literacy rate. As per the 1951 census the literacy rate was 16.7% which increased to 36.2% in 1981. The literacy rate in 1988-89 could be put at 41%. This means that about 60% of the country's population is still deprived of the benefits of education. Naturally, a large section of these illiterates abound in the rural areas.

In sum, so far as the social, educational and demographic factors are concerned the country still has a long way to go because of the depressing levels of these factors. A high proportion of the rural population, a high rate of dependence on agriculture characterized by low productivity levels, a low literacy rate and a low level of nutritional standards, all these have perhaps combined to act as growth retarding factors in economic development. However, only a more precise quantitative analysis of all these economic and quantifiable non-economic factors would reveal the sum-total of the picture.

As stated in the beginning of this chapter the data on the 11 variables for 38 year period from 1951-52 to 1988-89 are given in tables 1 to 11 of the Appendix.

The estimated multiple linear regression yielded the equation -
\[
X_1 = -2.011236 - 0.135796 X_2 + 0.1938635 X_3 + 1.536566 X_4 \\
+ 1.866407 X_5 - 3.840526 X_6 - 0.001920433 X_7 \\
- 0.3996731 X_8 + 0.5438487 X_9 - 0.2866075 X_{10} \\
+ 1.219091 X_{11}
\]

\[R^2 = 0.3053\]

From the algebraic values of the coefficients it is clear that during the period covered by us, capital formation, the share of the agricultural and industrial sectors in the national incomes, expectation of life, and literacy rate, have had positive impact on the growth rate of the economy. In contrast gross domestic savings, contribution of tertiary sector to national income, urbanisation, participation rate and nutritional levels, have yet to make any significant impact on the growth rate of the economy. Although the multiple coefficient of determination \(R^2\) is 0.3053 which was found to be not significant at 5\% level, yet from the exercise conducted by us it is clear that because of the low levels of savings, urbanisation, participation rates and nutritional standards, their impact have perhaps been unsatisfactory. The partial correlation coefficients between the various variables are shown in the Partial Correlation Coefficient matrix in Table 1. It will be seen from the matrix that the partial correlation coefficients are all positive and are highly significant even at 0.1\% level. The corresponding partial \(r^2\) matrix is also given in Table 2, as a culmination of the exercise.
### Table 1

**Partial Correlation Coefficient Matrix**

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Table 2

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CHAPTER : XIX

SUMMARY AND CONCLUSIONS

This chapter summarises the contents of our research work and embodies its main conclusions.

Chapter I dealt with the objectives of our study and the methodology adopted by us. An attempt was made to identify the factors responsible for the growth and development of any country. Accordingly, factors were classified as economic and non-economic factors. Although some factors are overlapping and cannot be strictly grouped as above.

In Chapter II an attempt was made to review the main theories propounded by economic and social thinkers. The theories of economic development variously emphasise land, labour, capital accumulation, capital output ratio, savings and savings ratio, investment in terms of a big-push and as a critical minimum effort, profits and reinvestment of surplus, industrialisation, technological advancements, entrepreneurship, social overheads, balanced vs unbalanced growth and removal of regional inequalities.

Chapter III dealt with the historical, religious and ethical factors. Indian history gives an account of India's sound economy which was demolished by frequent foreign
aggressions, intended to drain away her wealth. The Indian economy had been severely exploited by the Britishers. As a result the economy once rich was crippled and reduced to extreme poverty. Religious beliefs are another set of inhibiting factor. In India, religion is the nucleus of the socio-economic and cultural activities and has had a profound impact on the psycho-socio attitudes of the individual and the masses. The whole gamut of the individual's life is so enwrapped with religious sentiments and concerns that his life tends to get imbalanced between the material and spiritual. Further, religion in India has become dogmatic and ritualistic. Since religion inhibits and discourages economic achievements by introducing the element of 'other worldliness', it has an overall deleterious effect on the economic development process. Even ethics in India has not been able to instil a sense of everyday morality of fair play and integrity. Although the concept of 'Dharma' relates to law, justice, virtue, merit, duty and morality, and the performance of individual 'Karma', on the practical plane ethics tends to be ignored, giving rise to corruption, cheating, racketeering, bribery, dishonesty, profiteering, adulteration, and other shady dealings, which are unfavourable for economic development.

In Chapter IV we have considered the social, cultural and psychological factors, India constitutes a plural society with diverse beliefs and structures. Initially, the Hindu social organization acted as a powerful instrument for
absorbing diverse kinds of peoples and tribes within its fold without disturbing their distinctive rituals, practices and talents. Today, however, the Indian society is undergoing rapid disintegration with centrifugal tendencies. The chief features of the Indian society can be characterized as the joint-family, the caste-system, and isolated village-structure. Primarily the joint-family system was befitting in the isolated village structure. The joint-family was an asset for the weaker, but a liability for the stronger. But in the modern era even the joint-family has undergone disintegration. Looking to the current requirements of economic development the joint-family system hinders both geographical and the vertical mobility, and as such is a retarding factor. Another major inhibiting social structure which is an exclusive feature of the Indian society is the caste-system. Caste-system can be deduced as the most important single factor impeding economic growth, by restricting occupational mobility, division of labour and specialization in the context of new technology, and by curbing individual skill and incentive. The Indian culture has a extremely complex and multifarious configuration. Therefore, it is difficult to pinpoint any specific features of the culture, which may be inhibiting or encouraging economic development. The keynote of Indian culture is its philosophical underpinning in which spiritual values have been assigned prominence in contrast to the material values. Thus the general outlook appears to be denial of or abnegation from material advancements and hence
not congenial to economic development. The cultural setting in which an individual grows has considerable influence on the development of his basic abilities. What an individual learns and acquires has an immediate impact on his psychological outlook. An individual acquires customary ways and a definite frame of mind. Attitudes are unconsciously developed and become fixed by usage and emotionally embedded. Certain attitudes are irrational. Rigidity creeps in attitudes and gives rise to pervasive personality traits. An individual may be endowed with skills and abilities, but it requires motivation to bring an individual’s ability and skill to actual performance. Motivation makes tremendous difference in performance because it has a multiplier effect. But Indian psychology does not provide impetus for progress. Amongst Indian masses there is widespread lack of personal initiative, and involvement and purposefulness in life. The spiritual idealism is the most dominant factor in the Hindu psychology. Hinduism generates psychology of illusion with regards to worldly pursuits, consequently there is withdrawal and escape and an ascetic outlook of self-dinial, thereby weakening human motivation and inhibiting economic development.

Chapter V appraises the demographic, nutritional and environmental factors. The demographic profile of our country is catastrophic. Explosive level of population is both a cause and consequence of backwardness. When population is increasing at a rate faster than the growth rate of the
economy it tends to pressurize the economy acutely. Over-
population adversely affects the living standards and per-
capita income. Further, the explosive population upsurge
with high birth rate tends to handicap the economic
development by altering the age composition of the population
and by increasing the dependency ratio. Large family with
limited income hampers household savings and obstructs
capital formation. Furthermore, when population density is
viewed not in basic expression of number of people per square
mile, but as a ratio to existing opportunities and resources,
it appears to be generating disequilibrium in the economy,
which sets in a cumulative degeneration of the economy. The
consequence of population spurt tends to subdue all
achievements and therefore is a growth arresting factor.
Balanced nutritious food intake alongwith a high level of
personal hygiene, appropriate medical care contributes
positively to economic development by increasing the marginal
productivity of the labour force. Good health and nutrition
tends to give rise to a dynamic, robust and enterprising
population. On the other hand, low life expectancy reduces
the horizon of national and personal economic enterprise.
Malnutrition adversely affects the human development and,
sequentially, economic development also. In addition, the hot
tropical climate, with prolonged heat periods, generates
oppression, lassitude and weakness among the masses which
adversely affects their efficiency. Monsoons on the other
hand have destined the agrarian masses and their unpredicta-
bility has given rise to uncertain agricultural output. Unpredictable monsoons cause floods and droughts which adversely affect economic development.

In Chapter VI we have considered Education, which is a vital input in the formation of Human capital. It is the type and level of education that determines the quality of human resources. Education is essential for inculcating positive socio-cultural attitudes and the means to counteract religious, linguistic, national and other social and cultural traditions that may be hindering the modernization process. Therefore, it is a growth-promoting factor. Education has not been able to contribute sufficiently in India's economic development process because the format of education in India does not meet the urgent requirements of the economy and has resulted in national distortions in the form of unemployment, under employment and unemployment coupled with a shortage of skilled personnel. Further, due to the non-professional and predominantly academic structure, higher education has fallen short of its purpose of raising the quantity and quality of occupational skills.

Chapter VII dealt with the political, administrative and institutional factors. The influence of politics on the economic development process has to be understood in terms of governmental efficiency and administrative capabilities in the formulation, execution and implementation of appropriate developmental programmes. In a country like India with a
plural social structure and fissiparous tendencies, the responsibility of the government is further enlarged as it has to be concerned with the unity of the country as much as with the pursuit of economic goals. A favourable political environment is fundamentally growth-promoting. However, in the context of present-day political and social circumstances, it tends to be a growth-retarding factor.

Chapter VIII took into account the scientific and technological factors. Technology influences resource allocation, factor proportions, income distribution, size of industrial units, etc. Technology in the economic sense means a quantitative shift in the production function. There is a positive correlation between technology and productivity as it raises product per capita. Consequently, technological improvements foster the economic development process. Notably, it is technology indigenously developed that is more appropriate other than the blind adoption of imported technology. Although India proclaims to have the third largest scientific manpower in the world, its attempts have fallen short of instilling an appropriate technological base. Therefore a factor which is growth-promoting remains relatively passive.

Chapter IX dealt with natural resources. Mere natural resource availability is not a sufficient condition for economic transformation; nor resource scantiness inevitably fatal to economic progress. Economic progress may occur despite an overall meagerness of resources and a lack of
specific raw material. Experience of some developed countries reveal that dearth of natural resources may constrain economic growth only to a limited extent, as natural resources are interchangeable with man-made resources with technology & know-how. India is one country which is favoured with varied and abundant natural resources. Therefore, no pretext on this ground can be sought for its backwardness. What is lacking is appropriate technology for the optimum utilization of these resources.

In Chapter X human resources as factors in economic development was considered and examined. Of the three key resource-factors viz., human, physical and financial, which determine a country's capacity for economic development, the human resource appears to be the most strategic and critical. The wealth of any nation is intrinsically dependent upon the power to develop and effectively utilize the innate capacities of its people. Human-beings are the active agents who accumulate capital, exploit natural resources, build social, economic, and political organization, and carry forward national development. One major constituent of Human-capital is education with its thrust on vocationalisation. A developing country requires a large variety of skilled manpower which have to be employed in multifarious activities in the complex production process. The achievement of rapid economic growth makes it imperative to emphasize the quality of high-level manpower required for development. Apart from education and training the two other
components of human resource are improvements in health and improvements in nutrition. The proper management of human resources promotes economic development.

Chapter XI dealt with the agriculture, industry and services sector. The contribution of the three different Sectors to the national income and subsequent sectoral shifts in the occupational structure is an important indicator of economic development. It is usually contended that as the economy advances the percentage share of the primary sector declines and that of the secondary sector increases. Parallel to this there is an employment shift and a lesser percentage of people remain in the agriculture sector. The shift in the employment is counter-supported by the absorptive power of the secondary sector and the tertiary sector. The Indian case has not been able to fully testify to this proposition empirically.

The modernization of agriculture sector and its transformation into a commercially orient sector is essential for economic development. Further, the conversion of an agricultural economy into a mature industrial economy is crucial for economic development. Poor agricultural performance hinders the growth of the rest of the economy and limits the resources available to promote development. The agricultural sector provides a market for the products of the industrial sector. Industrialisation is the only effective solution to overcome the twin problems of over-population and low per capita incomes. The essential pre-condition for
development is an all round shift from low productivity occupation to high productivity occupations. In addition, the industrial sector possesses a relatively high marginal propensity to save. Industrial development alone can provide a continuing and secure basis for rapid growth of incomes. Establishment of industries alone can generate employment opportunities at an accelerated rate.

In Chapter XII we have examined savings and investment as factors of economic growth. Capital and savings has been regarded crucial in any attempt towards economic development. Development is a function of capital accumulation. Savings and capital accumulation both require abstention from current consumption, so as to be effectively utilised for raising future productivity. Capital should generally include resources that increase the productive powers of a community and the skill and abilities of its inhabitants. Capital has been broadly classified into physical capital, human capital and financial assets. The effect of capital is interactive and cumulative. Capital accumulation leads to increases in income, which increase savings and lead to additional capital formation. Capital has to be transformed into durable producer goods in various forms to be an effective contributor for economic growth. The role of savings in promoting development is rarely called into question. Economic growth entails not just a greater disposition to save but effective inducements to a high rate of investment in productive enterprises. Private investments are conducive
to economic growth. The problems of economic investment are not merely those of collecting quantities of capital, but of deciding the forms it should take so as to be most productive and instrumental towards economic growth.

In Chapter XIII Productivity as a necessary element in growth and a means to lasting economic prosperity was examined. Productivity is an excellent indicator of an economy's performance. Productivity is akin to efficiency. Productivity is a function of skill, education, working-hours, quality of capital, technology, mechanisation and automation, resource allocation and management-style. Genuine realization of industrial productivity depends upon the management, which facilitates agile and apt work that account for most of the increases in productivity. On the other hand, poor dietary habits, inadequate food, low standards of personal hygiene, long working hours, adversely influence productivity.

In Chapter XIV we have discussed the role of Entrepreneurship and Management in the development process. Entrepreneurship has been regarded as the fourth factor of production. The entrepreneurial spirit is an essential component for a profit-based economy. The capacity and willingness to undertake risk and to innovate, constitute the rudiments of entrepreneurship. The ability of individuals to perceive new opportunities for profit and the ability and willingness to exploit them are indeed crucial in economic
development. The economic environment should provide resources, opportunities and stimuli for entrepreneurial function, and discourage economically non-viable enterprises. Supply of entrepreneurs is scarce in India. The force of custom, the rigidity of status, dread for new conceptions, and inadequate intellectual curiosity have blended to create an atmosphere inimical to experimentation and innovation in India. Even managerial skills are at a premium. Lack of decision-making capabilities have resulted in inefficient enterprises and sick industrial units.

Chapter XV dealt with Social & Economic Overheads. It is indisputable that there is a close correspondence between socio-economic overheads and economic development. Enhanced availability of economic infrastructure such as electric power and transportation facilities are sine qua non of economic development. Improved transportation and communication net-work stimulate economic growth by making product and factor markets function more efficiently. Economically, the transport network opens up the hinterland and widens the market. Socially, it determines the trends of urbanisation. Good transport system establishes strong economic linkages. The railways play a dominant role in freight transportation and is a significant passenger conveyance. On the other hand, road transport structure provides greater flexibility and cost-effectiveness. In addition for a prompt communication a competent telecommunication network is mandatory. Infrastructure,
categorically gears up economic activities and thereby promotes economic development.

Chapter XVI took into account the International factors. The economic development of any country cannot be thought of in geographical isolation. International trade and market, political scenario, interdependency of one country on the other, play a direct or indirect role on the economic development of any country. International trade has often played a pivotal role in the development of an economy. Trade enables an economy to escape from the confines of its resource endowments and to consume commodities that lie outside its production possibility frontiers. International Trade benefits an economy by securing wider markets and improves technical and entrepreneurial competence through competition. Trade is an important stimulator of economic growth. However, a note of caution from the economic exploitation and dealings with developed countries needs to be heeded. Third world countries have benefited less from their economic dealings with developed nations and have in fact even suffered absolutely from this association. Especially, an UDC resorting to foreign aid must be cautious because till the point self-sustained growth is not achieved, the volume of debt will continue to rise and also the corresponding interest payment obligations. Therefore, it is essential to shorten the dependency period. Any negligence on the part of effectively utilising aid will adversely impinge on the economy's development and will also adversely effect
the country's balance of payment by fanning inflationary trends. Added to this is the danger of the Debt Trap.

Chapter IVII focussed on Economic policy and Decision making. Economic policies have a crucial role in the augmentation and regulation of the development process. Therefore an economic policy embracing all aspects (viz., monetary, fiscal, industrial, agricultural, employment, income and prices, taxation, educational, infrastructural) is a prerequisite. The factors to be taken into account while formulating an effective economic policy for India are economic growth, distributive justice, price stability, control of population, creation of adequate employment, enhancing the skill levels of its citizens, raising of health standards, initiating growth of scientific knowledge, and congenial social climate with an environment unhampered by social misery and communal unrest. Since economic policy is an effective channel of state-intervention it should not be applied frantically but with utmost care only in those areas where it will yield maximum results. Any aspect either ignored or neglected will result in unbalanced growth and disparities. In order to have social and economic parities within the masses, careful planning is essential. Of late India's policy framework is undergoing change from a socialistic to a capitalistic trend. The thrust on growth, productivity and modernisation is alright but a major reliance on the private sector is likely to generate capitalistic tendencies, and, by opening the door for multi-nationals the
economy may be heading towards a debt-trap. Thus, appropriate and relevant policies will encourage and promote economic development.

In Chapter XVIII we have made an attempt to quantify the above-said factors, as far as possible, and, in a multiple linear regression framework, tried to find out the degree and extent to which these factors explain or determine economic growth. For this purpose we have taken eleven variables. The rate of annual growth of net national product has been taken as the dependent variable. The data utilised relates to the period 1951-52 to 1988-89. Our main findings of this exercise are summarised in the same chapter.