PG EC/PS/SW S1-05 (DSE)

TWO YEAR MARSTER'S DEGREE COURSE

(CBCS in Accordance with NEP 2020)

SEMESTER - I

ECONOMICS OF SOCIAL SECTOR

Surya Kumar Bhuyan School of Social Sciences

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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COURSE INTRODUCTION

Economics of Social Sector is Discipline Specific Elective course of 1st Semester of the M.A. in Economics programme of this University.This course deals with issues related to economics of social sector such as role of education in economic development, components of human capital, demand for education, cost and benefits of education, return of education, education and labour market and education planning and development etc.

The first unit discusses economics of education such as role of education in economic development, components of human capital and physical capital and provision and utilization of educational facilities. The issues of demand for education and Its relationship with employment are discussed in second unit. The third unit analyses the costs and benefits of education. Problems involved in measuring returns from investment in education, educational financing, resource mobilization and utilization are included in chapter 4. Unit 5 discusses education and labour market and effects of educational financing on income distribution. Impact of family background on ability of earnings and change in income distribution due to poverty are discussed in unit 6. Cost-benefit analysis of education, production function models, growth accounting equations of Schultz and Denison are discussed in unit 7.

The eight unit will introduce you to the different aspects of educational planning and development. In this unit we will discuss the meaning and importance of manpower planning, manpower requirement approaches, programming and input-output mode as well as educational planning in developing countries with emphasis on India. The ninth unit will help you to understand the role of public sector, private sector and public private partnership in education.The tenth and eleventh units shall discuss the Economics of health. The tenth unit deals with the nature and scope of health economics, interrelationship between health & development and health & productivity, determinants of health status, disease burden and its measurement and the concept of global burden of disease.The eleventh unit deals with the economic dimensions of health care including meaning and definition, demand for health care and supply of health care, economics of nutrition, mortality and female education, concept of Missing Women and consequences of gender biases in health. The twelfth unit deals with the financing of health. In this unit we will discuss about the financing health care and resource constraints, economics of health insurance, health policy in India and financing health sector in India. The thirteenth unit will make a comparative study of the role of public sector in health, role of private sector in health and role of public private partnership in health. The fourteenth unit, which is the final unit of the course will help you acquire knowledge about the economic appraisal of health programmes. In this unit we will discuss about the

health and health economics, pharmacoeconomics, meaning and importance of economic appraisal, techniques of economic appraisal such as cost minimisation analysis, cost benefit analysis, cost efectiveness analysis and cost utility analysis.

While going through a unit, you will notice some along-side boxes, which have been included to help you to know some of the difficult, unseen terms. Again, we have included some relevant concepts in “LET US KNOW” along with the text. And, at the end of each section, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.

UNIT 1 : EDUCATION AND ECONOMIC DEVELOPMENT

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Education and Economic Development

1.3:1 Economic Development

1.3.2 Role of Education in Economic Development

1.4 Human Capital and Physical Capital

1.4.1 Concept of Human Capital

1.4.2 Human Capital vs. Physical Capital

1.5 Component of Human capital

1.6 Provision and Utilisation of Educational Facilities

1.6.1 What are Educational Facilities?

1.6.2 Provision of Educational Facilities

1.6.3 Utilisation of Educational Facilities

1.7 Let us Sum up

1.8 Further Reading

1.9 Answers to Check Your Progress

1.10 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit, you will be able to –

- elucidate the significance and value of education in economic growth
- distinguish between physical and human capital
- explain the components of human capital
- describe the provision and utilisation of educational facilities

1.2 INTRODUCTION

Economic development is the primary objective of all the nations of the world. Economic development is an activity for which there are high expectations, and significant investments of public money. The investment in education, that results in human capital formation or human resource development determines the character and pace of the economic and social development of a country. Thus, there exists a close relationship between economic development and education of a country. This unit deals with the role of education in economic development. This unit also highlights the differences between human capital and physical capital, different components of human capital and the provision and utilisation of educational facilities.

1.3 EDUCATION AND ECONOMIC DEVELOPMENT

Education in every sense is one of the fundamental factors of development. Education is related to all aspects of a society such as political, social and cultural, etc. Therefore, policies related to education should take into account the economic value of education and the contribution of education to economic growth and development. But in agriculture-based economy, much value was not placed on education and training for economic growth and development. In such economy, land as physical and fixed capital along with labour were considered the two factors of production.

With the turn of the 15th century, there was Renaissance associated with growth of science and technology, industrialisation and mass production, communication and transport, and the emergence of a market economy. During that period specialised skills and training became necessary. Adam Smith recognised that reality in 1776 and wrote about the values of education and training and health and fitness, the human capital for economic growth and development. This line of thinking grew over time and influenced developmental policy and planning since the 1950s. Role of education is now well recognised for economic development. No economic

development is possible without good education. Before discussing the role of education in economic development let us discuss the concept of economic development.

1.3.1 Economic Development

Economic development is a holistic concept. Economic development refers to the growth, changes, and improvements occurring in a given economy, to promote the quality of life among the populace. It is about creating a vibrant community in which people want to live and work. Economic development is the process of creating and sustaining wealth. Typically, economic development can be described in terms of objectives. These are most commonly described as the creation of jobs and wealth, and the improvement of quality of life.

Most of the economists define development in terms of removal of poverty, illiteracy, disease and changes in the composition of input and output, increase in per capita output of material goods. Economic development is generally defined to include improvements in material welfare especially for persons with the lowest income, the eradication of mass poverty, illiteracy, disease and early death. With respect of this, some economists include role of reducing poverty, provision of improving basic needs, goods and services and reduced inequalities in income distribution in the definition of economic development which can be achieved by increasing the rate of production and employment. Amartya Sen (1999) considers economic development to be the strengthening of autonomy and substantive freedom, which allow individuals to fully participate in economic life. Hence, economic development occurs when individual agents have the opportunity to develop the capacities that allow them to actively engage and contribute to the economy. Rather than being reduced to a static factor in a production process, individuals have become the agents of change in the process of economic development: they have the freedom to realise their potential. A country's economic development is usually indicated by an increase in citizens' quality of life.

LET US KNOW



Economic development and economic growth

- More often economic development and economic growth are used interchangeably. But Economic development is a much broader concept than economic growth.
- Economic growth is the subset of economic development.

In simple sense, Economic development = Economic Growth + Standard of Living

- Economic development could be seen as the growth and changes, as well as the various improvements that occur in a given environment, with the aim of promoting good quality of life among the populace.

Economic development and community development

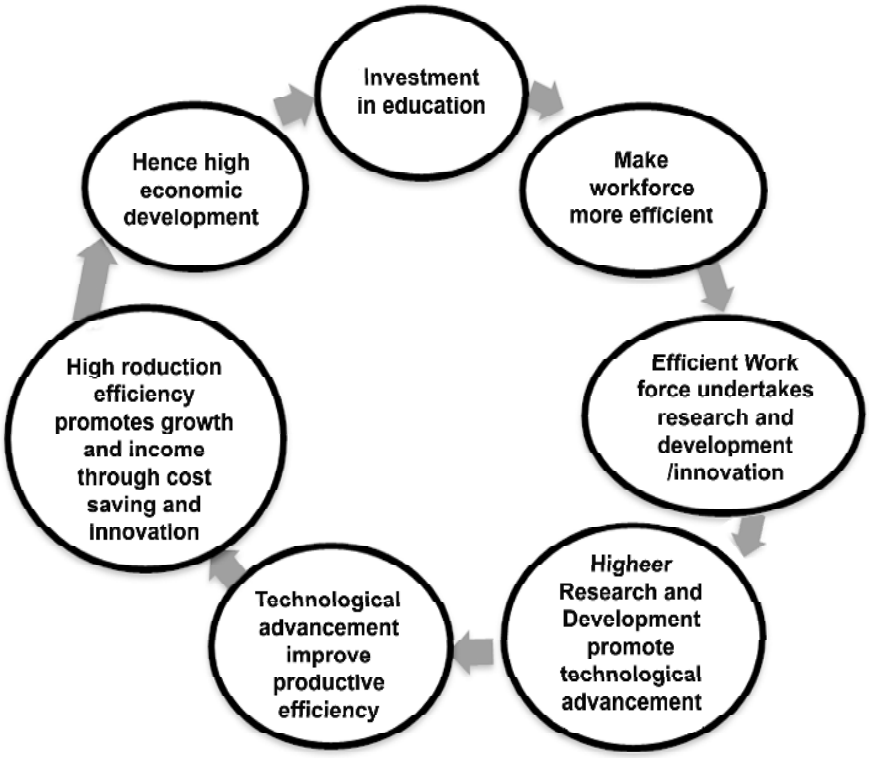
- It is important to know that economic development is not community development. Community development is a process for making a community a better place to live and work. Economic development is purely and simply the creation of wealth in which community benefits are created.

1.3.2 Role of Education in Economic Development

We have already noted that economic development refers to the growth, changes, and improvements occurring in a given economy, to promote the quality of life among the populace. Education fosters self-understanding; improves the quality of life and raises people's productivity and creativity, thus, promoting entrepreneurship and technological advance. Thus, education in every sense is one of the fundamental factors of achieving sustainable economic development through investment in human capital. It improves the quality of their lives and leads to broad social benefits to individuals and society.

Before the nineteenth century, systematic investment in human capital was not considered especially important in any

country. Expenditures on schooling, on-the-job training, and other similar forms of investment were quite small. But in the present century, education, skills, and the acquisition of knowledge have become crucial determinants of an individual's and a nation's productivity. One can even call the twentieth century the "Age of Human Capital" in the sense that the primary determinant of a country's standard of living is how well it succeeds in developing and utilising the skills and knowledge, and improving the health, and educating the majority of its population. Investment in formal education is also virtually related with economic development. The following figure presents the role of modern education on economic development :



Education helps in human capital formation, increasing productivity, reducing poverty, women empowerment, social development, creating health awareness, etc. through which economic development can be stimulated. These roles of education in economic development are briefly discussed below-

- **Human capital formation:** Human capital formation plays a significant role in a country's economic development. It is an instrument for promoting the comprehensive economic development of the nation. Education is necessary for human capital formation. The problem of scarcity of tangible capital in the labour surplus countries can be resolved by accelerating the rate of human capital formation with both private and public investment in education. No country can achieve sustainable economic development without substantial investment in human capital. Education in every sense is one of the fundamental factors of development.
- **Improving the Literacy Level and skills of the Labour Force:** Skills and knowledge are the driving force of economic and social development for any country. Education plays a major role in the acquisition of skills and expertise. There is conclusive evidence that countries with better-skilled labour-force develop faster and better than the ones with little or no relevant skills. The main notion of this form of contribution of education in economic development is that, within a given occupation, a better-educated person is likely to do a better job than a less educated one, because additional education is expected to make an individual more aware of better ways of doing things.

  Literacy rate is found to be very poor in developing countries. If education is provided to them then they would be literate, contributing immensely to the development of the economy. Similarly, technical and vocational education and training can create employment opportunities for marginalised groups and at the same time integrate relevant learning skills. In a summarised form, acquired literacy will help an individual to

  - have a liberal mind and positive orientation towards life and its related activities:

- ❍ accept and appreciate changes and innovations which may enhance his productivity;
- ❍ improve his health habits which have implications for his effective contribution to the economy;
- ❍ generate ideas and information which may assist others to improve their performances within the economy;

➢ **Increase Productivity:** Education raises people's productivity and creativity and promotes entrepreneurship and technological advances and enhances the economic development of a country. More educated individuals are usually more productive workers. For example, through education farmers are now able to use modern technologies which give them more output than through the use of traditional techniques. This point is even relevant to the industries as well. Educated labour and workers are capable of using modern techniques and equipment in a proper way which paves the way for more output leading to economic development.

➢ **Women Empowerment:** Educating girls and women is probably a better effective investment. It is said, **"**A nation which does not educate its women cannot progres**s".** But at the same time inequalities between men and women and discrimination against women have also been age-old issues. As such women's quest for equality with men is a universal phenomenon and the economic empowerment of women has also become a burning issue all over the world. Now, women are playing much diversified roles in the economic field as workers, consumers, entrepreneurs, managers, and investors. Their employment nonetheless adds substantially to the family and gives the family an economic advantage. Along with financial support, empowerment of women creates a multitude of positive remunerations for families

including better family health and nutrition, improved birth spacing, lower infant and child mortality, and enhanced educational attainment of children.

- **Social Development through Education:** Education always has the great capacity to take forward society from the darker side to the light of hope. Education acts as an essential instrument, for social and economic development. It provides a foundation for development, the groundwork on which much of our economic and social well-being is built. The hindrance to the society's developmental activities in the form of superstitions, practice of evil culture, dowry system, gender biases, etc. shakes the root of the society negatively. To eradicate such obstacles education paves its way. Through educational schemes, mass media, etc. the knowledge, skills, and perception of these people can be improved. These provisions to the people lead to the development of the social and economic condition, thereby raising the standard of living. Hence, education develops society and also contributes to the development of a nation's economy.
- **Education reduces Poverty:** Poverty is a major threat to the existence of humanity in modern times, especially in the developing world. Education provides a foundation for eradicating poverty and fostering economic development. It is the key to increasing economic efficiency and social consistency. By increasing the value and efficiency of their labour, it helps to raise the poor from poverty. In true sense education and poverty are inversely related. The higher the level of education of the population, the lesser will be the number of poor person.

The direct effect of education on poverty reduction is through increasing the earnings/income or wages. Education imparts knowledge and skills which is supportive of higher wages. It indirectly helps in the fulfillment of basic needs like water and sanitation, utilisation of health facilities, shelter, and it also affects women's behaviour in fertility decisions and family planning.

- **Education and Health Awareness:** In addition to the poor socio-economic condition of people, lack of public health awareness is a serious issue in economic development. Health awareness can be created in the minds of people through education. Education improves the knowledge and attitudes of a person about detection, treatment, and control of the disease. It promotes positive lifestyle habits.

In short, education is indispensable to economic development and no economic development is possible without good education.



CHECK YOUR PROGRESS

Q No 1. Answer the following questions:

a) What is economic development?

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b) What is the view of Amartya Sen regarding economic development?

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.....

c) Mention some areas of economic development which are directly influenced by education

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1.4 HUMAN CAPITAL AND PHYSICAL CAPITAL

It is evident from our discussion in the previous section of this unit that human capital plays an important role in human capital formation. In this section, it is proposed to examine the differences between human capital and physical capital. To have a contextual understanding of this difference an initial understanding of these two terms is required. The section below gives a brief explanation of the terms and their comparison.

1.4.1 Concept of Human Capital

The concept of human capital refers to human beings as one of the means and contributing factors in economic growth and social development. Earlier, there was a misconception that man was only a consumer of economic products. Economic progress is discussed in terms of money, capital goods and natural resources, to the exclusion of the human factor. But in the 1950s and early 1960s, Nobel Prize winner economists of the University of Chicago, Gary Becker and Theodore Schultz expounded the theory of human capital. The very concept of 'capital' had to undergo a serious change, with this emergence of 'human capital'. Human capital changes the classical theorist's concept of labour as a static factor of production. Simply put, the human capital is the economic value that added to a human being that influences productivity. It is the economic value of the abilities and qualities of labour. Thus human capital can be regarded as the human being who is endowed with knowledge, skills and expertise to be used in various ways, to operate the social and economic systems in a given society. Like other sorts of capital it:

- Requires a costly investment up-front
- Produces a return
- May depreciate

1.4.2 Human Capital vs. Physical Capital

In contrary to human capital, physical capital, on the other hand, refers to all tangible, non-humans, and man-made resources utilised in the production processes of goods and services. Examples of physical capital

include business buildings and plants, vehicles and machines. Physical capitals are used in the process of production for converting raw material to finished goods. In order to sort out the confusion often associated with physical and human capitals, our focus in this section will be on the similarities and differences between these forms of capital.

- **Similarities between Human Capital and Physical Capital:** We have already got the concept of human capital and physical capital. Thus, by virtue of your education and training, you may consider yourself as a human capital.

  Do you think you have any similarity with physical capital as another form of production?

  Here you may realise that both you and physical capitals are means of production. It implies that-

  - Both you as a human capital and other physical capitals can be used to produce goods and services.
  - Both the forms of capital formation are outcomes of conscious investment decisions.
  - Both are capable of making returns over the investments made on both of you over a period of time.

  From this point of view, you as a human capital and other physical capitals are similar.

- **Differences between Human Capital and Physical Capital :** Now, we will highlight the differences between human and physical capitals. Human capital is intangible; it is endogenously built in the body and mind of its owner. The physical capital is separable from its owner, whereas, human capital is inseparable from its owner. You know that the owner of a physical capital, say a bus, need not be present in the place where it is used; whereas, a bus-driver possessing the knowledge and ability to drive the bus, should be present when the bus is used for transportation. Human capital is the only exceptional active factor of production, whereas physical capital like all the other factors is passive

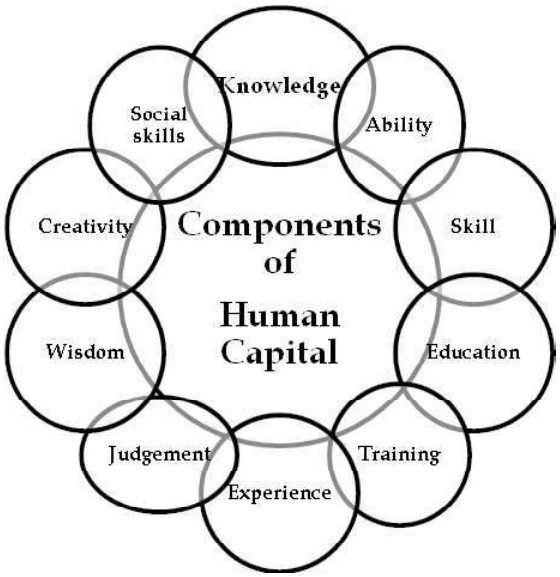
in nature. Thus, there are a number of differences between the physical capital and human capital. A detailed comparative frame between physical capital and human capital is presented in the following table:

Basis	Physical Capital	Human Capital
Definition	The term 'physical capital' indicates man-made commodities. It is used in the manufacturing procedure to allow the change of raw material into finished goods.	Human capital refers to the knowledge that a worker brings in the manner of education, talents, abilities, knowledge, preferences, etc. that they have gathered overtime.
Example	Land, Machinery, Equipment, Natural Resources	Knowledge, skills, attitudes, health and fitness
Formation	Technical and economic	Conscious and social process
Nature	Visible, tangible or quantifiable	Invisible, not precisely quantifiable
Means and End	This is always a means to an end	Can be both a means and an end
Tradability	There is a possibility of trading physical capital in the market.	Only the services that are rendered by the human capital can be sold.
Ownership	Separable from the owner	Not separable from the owner
Depreciation	Depreciation occurs due to continuous use.	Depreciation occurs due to ageing and can be minimized to a certain extent.
Mobility restriction	Due to the presence of trade barriers	Due to culture and nationality
Efficiency	Efficiency of use depends only on technical quality of the product	Efficiency does not depend just on technical quality; sincerity and dedication of the user are also important
Management	Mostly non-personal and generic	Personal and customised in nature
Benefit	Physical capital creates only private benefit. That is, benefits from a capital good flow to those who pay the price for the product and services produced by it.	Human capital creates both private and social benefits.

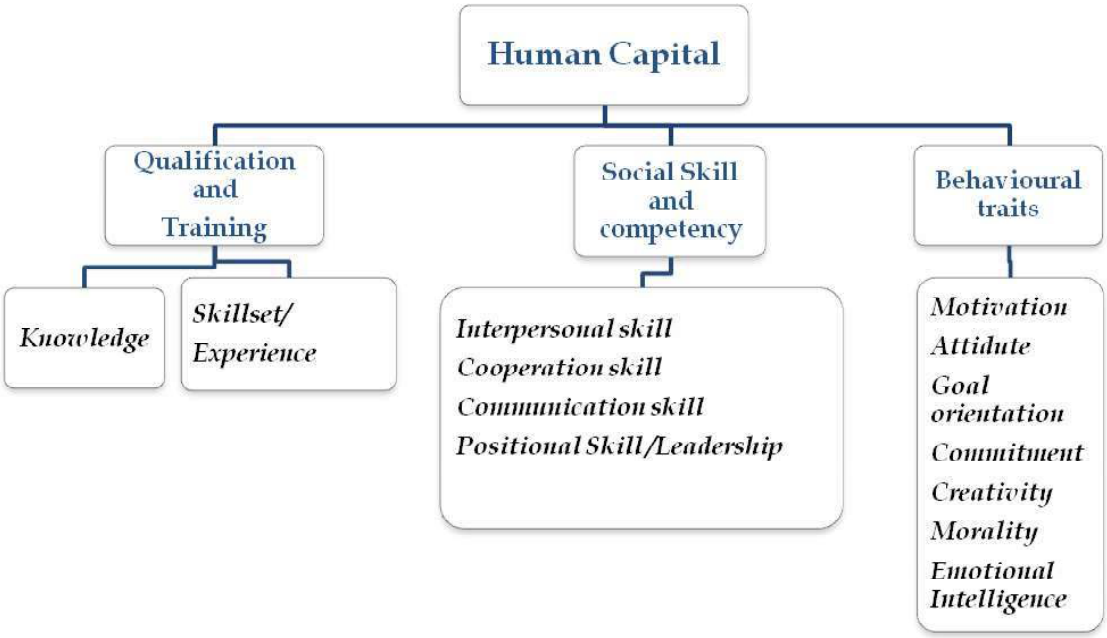
1.5 COMPONENT OF HUMAN CAPITAL

Human capital refers to the "abilities and skills of the human resources of a country." In a deeper sense, however, human capital is more than simply the physical labour of the people. Let us understand a little more of what human capital means by posing the following questions - What are the components of human capital?

Health and education are normally considered as basic components of human capital. Health includes both physical health and fitness. Education includes formal, non-formal, in-service and other acquired experiences of life. Formal education has several objectives such as knowledge, skills, attitude and appreciation, application as well as values of life. Our intellectual, social and personality attribute all form part of the human capital that contributes to the creation of goods and services. It also includes our wisdom, individually, and collectively. In other words, it is the collection of all our resources. It comprises all our (1) Knowledge, (2) Abilities, (3) Judgment, (4) Creativity (ability to innovate new working practices/products), (5) Intelligence, (6) Personality traits (7) Habits, (8) Education levels (8) Skills and qualifications, (9) Training, (10) Experience (11) Social skills – communication (12) Emotional intelligence, etc. The following figure presents some important components of human capital:



Thus components of human capital include the entire set of intangible qualities inserted into human beings to make them more productive. By analysing the above components of human capital, another attempt is made to classify these components of human capital as below-



Here –

- Social skill and competence arise from personality traits, include such elements as: the ability to build positive relationships, the ability to cooperation, communication, and mediation, adapting to new conditions, innovation, teamwork, and the so-called position skills, e.g. leadership. These are called soft skills.
- The third important element constitutes the different behavioural traits including motivation, identification with the organisation, goal orientation, etc.

Let us look at a few key components of Human Capital.

- **Skills, Qualification and Education:** The productivity of workers is closely tied to their skills, education and qualification. Just as factories invest capital in machinery that increases productivity, so investment in education also increase productivity. It is acknowledged as the root of human capital that is the reason why the parents and also the government spend more on education. This is especially

the case in those specialized services or technology where value is created by innovation and creativity rather than working with physical materials.

- **Training:** This is the component of human capital that workers acquire often associated with some set of skills useful for a particular job or work or useful with a particular set of technologies. At some level, training is very similar to schooling in that the worker, at least to some degree, controls how much to invest.
- **Work Experience:** The more experienced employees are, the more they create value. Thus, work experience can be seen as a form of capital that generates revenue. An individual having rich work experience in a particular area of production is valued more than others having less experience.
- **Social and Communication Skills:** No matter how much individuals know or how much they have developed expertise in a particular area of production, that knowledge is of little use if they cannot communicate effectively or work well with other person. The social and communication skills of a person are even more important in areas of production which involve dealing with other person.
- **Innate Ability:** Individuals can have different amounts of skills/ human capital because of innate differences. Intelligence and creativity talents are (ability to innovate new working practices/ products), determine the value of an individual as human capital. Because of this there is likely to be heterogeneity in human capital even when individuals have access to the same investment opportunities and the same economic constraints;
- **Habits and Personality Traits:** For individuals, habits and personality traits can be the sources of value. The person who is disciplined, punctual, meets deadlines, hardworking, has a positive outlook, and is a team player generates more value than one who may have the same technical skills but lacks these personal traits and habits.

- **Frame and Reputation: I**ndividual Frame and reputation are also important component of human capital. It makes extra value to a person for particular work place. Often famous individuals as such can become iconic figures who generate revenue for a brand. So different organisations appoint celebrity or spokesperson as brand ambassador to attract customers.
- **Health:** Who can work better —a sick person or a person with sound health? As the poor health and undernourishment adversely affect the quality of manpower, so health of an individual is an important component of human capital. A person with poor health has less productivity.



CHECK YOUR PROGRESS

Q.2: What is human capital?

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Q.3: Distinguish between physical capital and human capital (write two points).

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Q.4: Mention two basic components of human capital

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1.6 PROVISION AND UTILISATION OF EDUCATIONAL FACILITIES

Facilities constitute a strategic factor in organisational functioning. This is so because they determine to a very large extent the smooth functioning of any social organisation or system including education. Their availability, adequacy and relevance influence efficiency and high productivity. Thus, educational facilities give meaning to the teaching and learning process. These facilities are the material resources provided for staff and students to optimize their productivity in the teaching and learning process and to maintain its quality. The actualization of the goals and objectives of education require the provision, maximum utilisation and appropriate management of the educational facilities. Let us discuss the provision and utilisation of educational facilities that is an important concern of economics of education.

1.6.1 What are Educational Facilities?

Learning can occur through one's interaction with one's environment. In the context of education this learning environment refers to facilities that are available to facilitate students' learning outcome. Educational facilities can be defined as those things that enable the teacher to do his/her work very well and help the learners to learn effectively. They include the school buildings, classroom, accommodation, libraries, laboratories, furniture, recreational equipment, apparatus and other instructional materials. The educational facilities therefore, must meet the needs of the school community. The education facilities are divided into instructional, recreational, residential and general-purpose types.

- **Instructional Facilities:** These are facilities that are specifically meant for direct teaching and learning. It includes classroom, classroom seats, laboratories, libraries, experimental equipment, chalkboard, audio-visual learning equipment, zoological gardens and experimental agricultural

farms. These facilities bear directly on the teaching – learning process and are therefore considered of prime priority among other school facilities.

- **Recreational Facilities:** These are spaces, lawns, fields, pitches and equipment for sports, games and general recreation. Games and sports apart from developing specific skills also develop a good learning socio-psychological as well as mental environment through relaxation. The importance and level of resources committed to the development and provision of recreational facilities must not exceed their values in facilitating the overall goal of the educational institution.
- **Residential Facilities:** These include hostels and hostel facilities, refectory and refectory facilities, staff quarters and other associated facilities meant to provide residential convenience for staff and students.
- **General – Purpose Facilities:** These are facilities that can easily be converted to uses other than those for which they are being used. Such facilities in most cases are made of spaces used as sporting pitches, fields, lawn, school farms, access roads, parking lots and so on.



CHECK YOUR PROGRESS

Q 5. What are educational facilities?

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Q 6. What are the different types of educational facilities?

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1.6.2 Provision of Educational Facilities

The provision of educational facilities is of utmost importance. The absence of educational facilities implies the non-existence of

any set up that may be referred to as school. It is a very good means or index of measuring the standard and quality of the education to be provided. Previously, in the developing countries, educational facilities were generally provided by the community. It may be pointed out that now education has expanded at a rapid pace and the community cannot provide all the educational facilities. Now the government should provide all necessary facilities to the educational institution from its own revenues. The government should make sure that all the school facilities such as instructional, recreational, residential and general-purpose facilities should be provided.

Making adequate provision of educational facilities is a process that involves rationally. Specific educational facilities requirement of community or institution in terms of quantity and quality needs to be properly assessed to provide the operational guide for facilities provision. This requires an integrated effort of all stakeholders who possess the expertise needed for accurate and up-to-date assessment of all aspects of educational facilities.

Here it is required to determine which facilities are required to achieve school goals and provide such facilities most advantageously in terms of resource use. The right educational specification must be brought to bear on the provision of these facilities to meet the desired objectives. Choices are to be made in favour of school facilities that are economical to operate and maintain. It needs to ensure that the right types of facilities are made available at the right time and place for the right type of teaching – learning activities. Through proper monitoring, supervision, control and regular maintenance the provision of the educational facilities in an educational institution can be safely guaranteed. It is essential to know what type of facilities are available and how they are being utilised.

1.6.3 Utilisation of Educational Facilities

Optimal utilisation of educational facilities is very important in education. Educational resources are scarce relative to the varied and competing educational needs and demands. Colossal wastage

(under-utilisation and over-utilisation) is however, eliminated. Some important points to keep in mind for proper utilisation of educational facilities are -

- Proper planning is needed for optimum utilisation
- Need for monitoring to ensure optimal use of the available educational facilities. All available materials are to be used adequately.
- Maintaining the facilities regularly to ensure their longevity
- Reviewing the provision of these facilities to ensure that it continues to meet both the changing educational needs in the advantageous manner.
- Educational Facilities Master Plan as a blue-print indicating the educational facilities are to be provided and existing ones relocated or completely removed to enhance the level of utilisation of such facilities as well as meet the educational needs of the community or the educational institution.

An adequate provision and utilisation of educational facilities are responsive to the changing programmes of educational delivery. The standard of education will improve greatly if the facilities available in educational institution are optimally utilised. Since education is dynamic both in content and methods, educational facilities need to be constantly evaluated and modified, not only to remove absolute and dilapidated structure but also to ensure that such facilities continue to meet the modern and ever changing educational needs, changing technology and the dynamic socio-political and economic environment.



1.7 LET US SUM UP

- There is a symbiotic relationship between education and the economy. Education is indispensable to economic development.
- Education plays a significant role in human capital formation, development of skills of the Labour Force, development of

productivity, women empowerment, social development, removal of poverty , health awareness etc., which are important determinant of economic development of a country .

- There are number of differences between the physical capital and human capital.
- The concept of human capital refers to human beings as one of the means and contributing factors in economic growth and social development.
- In contrary to human capital, physical capital, on the other hand, refers to all tangible, non-humans, and man-made resources utilized in the production processes of goods and services. The comparison between two is made from different point of view.
- The different provision and utilisation of educational facilities are responsible to the changing programs of educational delivery.



1.8 FURTHER READING

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1.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No. 1:

- Economic development is the process of creating and sustaining wealth. Typically, economic development can be described in terms of objectives. These are most commonly described as the creation of jobs and wealth, and the improvement of quality of life.
- Amartya Sen considers economic development to be the strengthening of autonomy and substantive freedoms, which allow individuals to fully participate in economic life.
- Education plays a significant role in human capital formation, development of skills of the labour force, development of productivity, women empowerment, social development, removal of poverty, health awareness etc.

Ans to Q No 2: Human capital is regarded as the human being who is endowed with knowledge, skills and expertise to be used in various ways, to operate the social and economic systems in a given society. Thus, it refers to the stock of skill, ability, expertise, education and knowledge involved in the people.

Ans to Q No 3: Two differences between physical and human capital are –

- Physical capital is Visible, tangible or quantifiable, but human capital is invisible, in tangible precisely quantifiable
- Physical capital is Separable from the owner, but human capital is not separable from the owner invisible, in tangible precisely quantifiable

Ans to Q No 4: Two basic components of human capital are education and health

Ans to Q No. 5: Educational facilities can be defined as those things that enable the teacher to do his/her work very well and helping the learners to learn effectively. They include the school buildings, classroom, accommodation, libraries, laboratories, furniture, recreational equipment, apparatus and other instructional materials.

Ans to Q No 6: Different educational facilities are: (1) Instructional, (2) recreational, (3) residential and (4) general-purpose types.



1.10 MODEL QUESTIONS

Q 1: What is meant by economic development? Discuss the relationship between education and economic development.

Q 2: Explain the concept of human capital. State the similarities and differences between human capital and physical capital.

Q 3: What are the components of human capital? Explain.

Q 4: What is meant by educational facilities? Write a note on provision and utilisation of educational facilities.

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UNIT 2: DEMAND FOR EDUCATION AND ITS RELATIONSHIP WITH EMPLOYMENT

UNIT STRUCTURE

2.1. Learning Objectives

2.2. Introduction

2.3. Demand for Education

2.3.1. Private Demand for Education

2.3.2. Social Demand for Education

2.4. Employment Opportunities

2.5. Relationship between Employment Opportunities and Educational Demand

2.6. Let us Sum up

2.7. Further Reading

2.8. Answers to Check Your Progress

2.9. Model Questions

2.1. LEARNING OBJECTIVES

After going through this unit, you will be able to:

- explain the ideas related with the private and social demand for education
- discuss the concept of employment opportunity
- find out the relationship between employment opportunities and educational demand

2.2. INTRODUCTION

We know that every individual is engaged in economic pursuit as man is not only a social animal but also an economic being. These economic activities are multifaceted and varied. Besides, we all are aware that education is a part and parcel of our life. Without education, we cannot imagine any development as these two goes in parallel. Education has many aspects as its area is much wider; economic aspect is one among

them. Again, every aspect of educational activity is related to economics in terms of educational finance or availability of funds. Thus, we can clearly find an intimate relationship between education and economics. Economics has several branches like- rural economics, monetary, micro and macroeconomics and so on. Economics of education is one of the youngest branches of economics. Economics of education is concerned with the assessment of the contribution of education to the economic growth of a country. It deals with the systematic and deliberate planning of the educational system in order to accelerate economic development. Economics of education is concerned with the assessment of the contribution of education to the economic growth of the country. It deals with the systematic and deliberate planning of the educational system in order to accelerate economic development. Demand is a very significant concept in the study of economics. In this unit, we will be dealing with some of the concepts of demand in relation to education. Moreover, we will also discuss issues like employment opportunities and its relationship with educational demand.

2.3. DEMAND FOR EDUCATION

The economics of education deals with the demand and supply of education for man. Generally, the term “demand” refers to the quantity or the amount of a particular commodity purchased at a given price level. The term is associated with the price of the commodity in question. Economists define demand as a schedule indicating the amount of a particular good or service that consumers are willing and able to buy at each price in a set of possible prices during a specified time period. Human capital, a concept introduced by T.W. Schultz and elaborated by Grey Becker includes the notion that individual acquires skills and knowledge to increase their value in labour market. Experience, training and education are the three main mechanisms for acquiring human capital with education being primary for most individuals. Education facilitates the acquisition of new skills and knowledge that increase productivity. This increase in productivity fuels up resources to create new technology, new business and new wealth

eventually resulting in increased economic growth. Therefore, education is regarded as a "public good" which gives benefit to both individual and societies. Therefore, modern economics gives special emphasis on increased investment in education which is linked to development of human resources. Whereas according to some economists, education is a consumption good, in the opinion of John Maynard Keynes, general education is sometimes considered as consumption, for example, learning classical languages, fine arts, games, etc. fall in the category of consumption activity. Courses in humanities, some of which are called non-utility subject, do not assure better economic welfare. If any study in a given discipline is done for the sake of pleasure or as a useful need for engagement during leisure time without thinking about the economic possibilities, it may be regarded as consumption activity.

Viewed from the consumption or investment framework, the demand for education can be categorised as-

- Individual or private demand and
- Social demand

We shall discuss about these two types of demand for education in the following sub-section. Before that, it is essential to know the factors that affect the demand for education.

- **Factors influencing demand for education**

  The following factors influence the demand for education-

  - **Cost or price of education**: This includes both the direct and indirect costs. If the cost is very high, the quantity of demand decreases and vice-versa.
  - **Level of personal disposable income**: Another factor influencing demand for education is level of personal disposable income. As long as the level of family disposable income is low, demand for education will be invariably low and vice-versa
  - **Benefits accruing from educational investments**: The increased lifetime earning too influences the demand for education.

- **Social reasons**: Sometimes demand for a particular educational programme is high due to prevailing fashion e.g., current demand for degrees like- Deep learning, Machine learning, Artificial Intelligence, etc.
- **Peristaltic process**: The parental desire for their children to climb the higher academic ladder is a significant factor for demand for education.

2.3.1. Private Demand for Education

The private demand is defined as the enrollment in an educational system. The private demand for education is estimated by the data collected at the household level. For instance, the study on impact of economic condition on demand for education at individual level will include the family or household income while at the country level it would include the National Income. Private demand for education is also considered individual demand. The individual demand for education is influenced both by economic and non-economic factors. However, economic models of educational choice mainly concentrate on the former. The underlying assumption is that an individual makes a rational choice on the basis of his expectations about benefits and costs of different options. He is assumed to have adequate information available as well as capacity for processing it for the purpose.

George Psacharopoulos and Maureen Woodhall (1985) defined the individual demand as the enrollment of individuals in an educational system. On the other hand, if we aggregate the individual demand, we get the social demand. There are three kinds of private demand for education. These can be explained as described here.

- **Satisfied Demand for Education**: We can call the satisfied private demand for education as one when an individual is enrolled in a school and he/she stays throughout his/her time of course with more probability of completing the course.

- **Unsatisfied Demand for Education:** Unsatisfied private demand for education may be defined as the situation while an individual is not at all enrolled in a school during his voluntary school-age period. Here an individual's demand for education is said to be an unsatisfied demand.
- **Partially Satisfied Demand for Education**: The partially satisfied demand for education can be viewed as the case, where an individual enrolled in a school after some days or months might have dropped out from the school, due to any family problem. Therefore, we can call this demand as the partially satisfied demand for education.



CHECK YOUR PROGRESS

Q 1: What are the factors that influence demand for education?

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Q 2: What is private demand for education?

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2.4. SOCIAL DEMAND FOR EDUCATION

The social demand is the total number of persons enrolled in an educational system. The social demand is defined as the aggregate of individual demand i.e. the total number of persons enrolled in an educational system. This type of demand for education is determined by taking the aggregate data at a state or the country level. The social demand approach treats education as a service demanded by the community just like any other good and service and regards educational planning as the process of forecasting demand to establish adequate institutional arrangement to meet the demand. The individual demand for education is known in literature as

social demand for education (Psacharopoulos, 1980). It reflects the decision of an individual as his revealed preference among the available school and work alternatives (W.C. Fuller, C.F. Manski & D.A.Wise 1982). The social demand for education has received considerable attention of researchers, mainly in the U.S. The economic models of educational choice have been generally formulated in terms of investment in human skills.

The benefits of education refer to the returns a person or society gets from education. In practice, it is mainly measured through the earnings or the earning potential of an individual. Broadly, the benefits of education are categorised as **direct and indirect benefits**. The direct benefits include the monetary earnings in terms of wages and salaries with the average life-time earnings expected to rise with every additional level of education acquired e.g. a university graduate is expected to earn more than a secondary school pass out. The total lifetime earnings of an educated worker can be assessed through an age-earnings profile. There are also other kinds of financial benefits which an educated individual enjoys such as by taking up part-time jobs. As these returns are paid or received through money, it is also known as monetary benefit of education. Large parts of the direct benefits are regarded as 'private benefits' as these mainly benefit the individuals although the society also gets benefit from educated persons in some way. The indirect benefits refer to the positive externalities which the recipients of education conferred upon others in the society. Some of the externalities include improvement in health of the entire family, reduction in poverty, reduction in income inequality, better participation of women in community or family decision making, reduction in crime, etc. These may also include the pleasure derived by the learning process, the scholastic life led in life later, expected future consumption benefits, etc.

Burton Weisbrod (1962) has categorised the indirect benefits of education into three broad groups namely-

- **Residence-related benefits:** The residence related benefits are for mothers who can do some work while their children are at school.
- **Employment-related benefits:** Employment-related benefits are the external effects of one educated worker in the work place on the productivity of other co-workers.

- **Societal benefits in general**: There are some indirect benefits of education which accrue to the society in general like spreading information favourable to the maintenance of a competitive economic structure and democratic polity. Although such indirect benefits of education can be recognised, it is difficult to measure them. Further, the extent of indirect benefits from different levels of education vary widely.

Thus, there is every reason to believe that the social demand for a longer education will continue to increase. There is a need for a longer school life for children so that they are better adapted to society. A greater appreciation of the value of a longer education is spreading throughout all levels of society.



CHECK YOUR PROGRESS

Q 3: State the indirect benefits of education as classified by Weisbrod.

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2.5. EMPLOYMENT OPPORTUNITIES

Individuals acquire skills and knowledge to increase their value in labour market. Experience, training and education are the three main mechanisms for acquiring human capital with education being primary for most individuals. Education facilitate the acquisition of new skills and knowledge that increase productivity. It is mentionable here the education is regarded as a 'Public Good' which give benefits to both individual and society. Therefore, the modern economists give special emphasis for increased investment in education. This investment again provides 'return' to two broad sectors– public and private.

Employment is considered as one of the most important areas of "Private Returns to Education" along two other areas with earning and non-

market private effects. The amount of education an individual receives not only effects his earning but the quality of employment as well. The economic areas especially the employability, income, GNP- all are generalised by education. The primary mission of the economics of education itself is to identity opportunities for improved efficiency in respect of earning of live i.e. employment for raising the standard of living. Education is the passport to accelerate economic growth, particularly in the context of rapidly globalising world economy. Only those societies that have acquired the relevant knowledge and skills can compete successfully in global market today. The history of development of countries of the world indicate that there has been close relationship between education and economy. Education and economic development of a country go side by side. Both the types of development are complementary to each other and are also interdependent. The educational and economic developments are the cause as well as result. Alfred Marshall refers to education as a national investment. His view was that the most valuable of all capital is that which is invested in human being. The amount of education an individual receives not only affects his earning but the quality of each employment as well. Jacob Mincer in his book "Studies in Human Capital" stated that educated workers have three advantages relative to less educated workers. These advantages are-

- Higher wages
- Greater employment stability
- Greater upwards mobility in income

  According to Jacob, increased earning by workers with higher educational levels are a result of two factors-

  - Increased human capital result in higher productivity
  - Increased education increases probability for employment and decreases the probability of unemployment as well as job turnover.

Education is often considered a productive activity. As a productive activity, it yields indirect return by providing employability, the sources of income which again leads to raising the standard of living. One of the serious

problems i.e. unemployment is common to all the countries of the world whether they are industrially advanced or not. We cannot admit that lack of education is the sole cause for unemployment. Our young men and women who are capable of securing for themselves jobs, do not get them soon after their education. Many of them are made to wait for some time during which they remain as unemployed. There is a huge pool of educated people but are without much skill to handle various technical and non-technical jobs owing to the facts, that the present education system has not taught them the required skill. As there is a close relationship between education and employability it is necessary to bring some changes in the system of education. In the present system of education, some amendments can be made to accommodate certain new features to make education a little job-oriented. Education system must be able to cope with ever changing requirements of skilled human resource to man, the complex dynamics of new economic world order. Now, any product, any organisation, any educated person is judged by his/her skill, competence and value in corporate world which are globally interlinked. Education today must evolve as a fusion product of true value of education and the critical skill required to sustain economic growth. Such education can only strengthen the employability of pass out students. Again, skill development which is one of the important components of education system is considered responsible for increasing employability of the youth. So, modern education must put emphasis on skill development to withdraw the problem of unemployment in the scenario of development.

2.6. RELATIONSHIP BETWEEN EMPLOYMENT OPPORTUNITIES AND EDUCATIONAL DEMAND

In the above discussion, you have come across the concept of demand for education. The amount of schooling received by an individual is largely influenced by the demand for and supply of education. It is also heartening to note that the relationship between education and employment is the second indicator of economic growth. Education has come to be seen as an aid in realising the socio-economic objectives of individuals as

well as the society. The nature of employment and the earnings are significant determinants of the economic gains. In this context, the relationship between education and different aspects of employment like level of earnings, status and employability is assessed to be strong and positive.

There is a close relationship between employment opportunities and educational demand. The number of years of education is the best single predictor of the eventual occupational status and earnings of an entrant into the labour market. There are two major factors which influence the demand for education. These are-

- The prospects of earning over a life span of an educated person or the expected private and social benefits.
- The education costs (both direct and indirect) - which a student or his/her family must bear to get him/ her educated.

  Indeed, the demand for education is a "derived demand" for employment opportunities fetching higher wages especially in the modern sectors which assure higher earnings over the entire period of employment. In developing countries, the demand for education is not so much to satisfy intrinsic non-economic wants of people as to enable them to pursue a financially rewarding career over the span of their life time, rather the ability of an individual to enter the modem employment sector and exploit the opportunities for higher earnings. The relationship between educational demand and employment opportunities can be presented in the following ways-

  - Education is considered as invested "Public good", which gives benefit to both individual and societies by providing 'private returns' in terms of employment opportunity in particular.
  - There exists a marked wage-difference between jobs in modern sectors which are largely mechanised and the traditional sectors like farming, urban self-employment, handicrafts, etc. which are basically labour-intensive. Entry into the modern sector jobs and earnings thereof depend on

the level of completed education whereas the income from earnings in the traditional sectors has no fixed educational requirement. The larger the income differentials between the two sectors the greater will be the demand for education and training.

- For an individual who successfully completes the necessary schooling, entry into the modern-sector-labour-market provides a higher "probability" of getting a well-paid urban job than the one who does not have an access to adequate levels of education.
- The connection between demand for education and employment is strong indeed. That is why when job opportunities for the uneducated diminish, individuals safeguard their economic status by acquiring primary or secondary, vocational and higher education in order to gain the best employment opportunities available to them.
- The educational system is so planned that there are people who can help in creating more jobs.
- Education evolved with a fusion of product of true value of education strengthens the employability of youth.
- The higher educational institutions are reviewed in the light of the changes which are occurring in the pattern of employment of higher educated manpower cohorts.
- The manpower planning should show the avenues of self-employment and give a direction to the educational planners in planning the content of courses.

Hence demand for education, employment opportunities and earning are closely related to one another to a large extent. A system of education is needed that may have multiple terminal points and at each terminal point all those must get an offer of job who decide to enter the world of work. Such terminal point may be there after the middle school, high school, higher secondary education, graduation or post-graduate courses.



CHECK YOUR PROGRESS

Q 4: Why is demand for education considered as derived demand for employment?

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2.7. LET US SUM UP

This unit can be summarised as follows-

- Generally, the term "demand" refers to the quantity or the amount of a particular commodity purchased at a given price level.
- Economists define demand as a schedule indicating the amount of a particular good or service that consumers are willing and able to buy at each price in a set of possible prices during a specified time period.
- Viewed from the consumption or investment frameworks, the demand for education can be categorised as-(a) Individual or private demand and (b) Social demand.
- Factors influencing demand for education are- Cost or price of education, Level of personal disposable income, Benefits accruing from educational investments, etc.
- The private demand for education is estimated by the data collected at the household level.
- The individual or private demand for education is influenced both by economic and non-economic factors.
- If we aggregate the individual demand, we get the social demand. The social demand is the total number of persons enrolled in an educational system.

- There are three kinds of private demand for education. They are- Satisfied Demand for Education, Unsatisfied Demand for Education and Partially Satisfied Demand for Education.
- The benefits of education are categorised as direct and indirect benefits.
- The direct benefits include the monetary earnings in terms of wages and salaries with the average life-time earnings expected to rise with every additional level of education acquired e.g. a university graduate is expected to earn more than a secondary school pass out.
- The indirect benefits refer to the positive externalities which the recipients of education confer upon others in the society.
- Employment is considered as one of the most important areas of "Private Returns to Education" along two other areas with earning and non-market private effects.
- The economic areas especially the employability, income, GNP are all generalised by education.
- Jacob Mincer in his book "Studies in Human Capital" stated that educated workers have three advantages relative to less educated workers. These advantages are- higher wages, greater employment stability, greater upward mobility in income, etc.
- The relationship between education and employment is the second indicator of economic growth.
- Education is considered as "Public good" invested, which give benefit to both individual and societies by providing 'private returns' in terms of employment opportunity particularly.
- The demand for education, employment opportunities and earning are not only closely related to one another but to a large extent.



2.8. FURTHER READING

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2.9. ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The following factors influence the demand for education-

- Cost or price of education: This includes both the direct and indirect costs. If the cost is very high, the quantity of demand decreases and vice-versa e.g., FPE and FDSE.
- Level of personal disposable income: Another factor influencing demand for education is level of personal disposable income. As long as the level of family disposable income is low, demand for education will be invariably low and vice-versa
- Benefits accruing from educational investments: The increased lifetime earnings too influences the demand for education.
- Social reasons: Sometimes demand for a particular educational program is high due to prevailing fashion e.g., current demand for degrees like-deep learning, machine learning, artificial intelligence etc.
- Peristaltic process: The parental desire for their children to climb higher the academic ladder is a significant factor for demand for education.

Ans to Q No 2: The private demand is defined as the enrollment in an educational system. The private demand for education is estimated by the data collected at the household level. Private demand for

education is also considered as individual demand. The individual demand for education is influenced both by economic and non-economic factors.

Ans to Q No 3: Weisbrod (1962) has categorised the indirect benefits of education into three broad groups namely-

- Residence-related benefits: The residence related benefits are for mothers who can do some work while their children are at school
- Employment-related benefits: Employment-related benefits are the external effects of one educated worker in the work place on the productivity of other co-workers
- Societal benefits in general: There are some indirect benefits of education which accrue to the society in general like spreading information favourable to the maintenance of a competitive economic structure and democratic polity.

Ans to Q No 4: The demand for education is considered as "derived demand" for employment opportunities fetching higher wages especially in the modem sectors which assure higher earnings over the entire period of employment. In developing countries, the demand for education is not so much to satisfy intrinsic noneconomic wants of people as to enable them to pursue a financially rewarding career over the span of their life time rather the ability of an individual to enter the modem employment sector and exploit the opportunities for higher earnings.



2.10. MODEL QUESTIONS

A) Short Questions (Answer each questions in about 50-150 words)

Q 1: What is demand for education?

Q 2: Why is education considered as public good?

Q 3. Who introduced the concept of Human capital?

Q 4: What is individual demand for education?

Q 5: What is social demand for education?

Q 6: What was Jacob Mincer's view on education and employment?

B) Long Questions (Answer each questions in about 300-500 words)

Q 1: Differentiate between individual and social demand for education.

Q 2: Discuss the factors that influence the demand for education.

Q 3: Explain the three private demand for education.

Q 4: Discuss how educational demand and employment opportunities are interrelated.

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UNIT 3: COSTS AND BENEFITS OF EDUCATION

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Costs of Education – Expenditure on Education

3.4 Private Costs and Social Costs and Wastage and Stagnation

3.5 Benefits of Education: Direct and Indirect Benefits

3.6 Private and Social Benefits

3.7 Let Us Sum Up

3.8 Further Reading

3.9 Answers to Check Your Progress

3.10 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- Know about the concept of costs of education as well as expenditure of education.
- Explore the idea of private costs and social cost as well as wastage and stagnation.
- Know the different benefits of education such as direct benefits and indirect benefits.
- Explore the idea of private benefits and social benefits.

3.2 INTRODUCTION

Education should make the child an effective and productive member of the society. It should not make him/her the burden of the society. Economic productivity through education can only make the child useful, loyal and disciplined citizen of the country. It is said that our boys and girls are to be treated as the man power resources of the country. Education should train their inherent resources for increasing productivity and improving the quality

of production. John Dewey in his book 'Democracy and Education' convincingly focussed our attention to different vital economic aspects of education. One important aspect of economics of education is costs of education. The costs of education refers to the costs incurred by the state government or private sector for providing education to the citizens. Thus, the costs of education can be divided in to two broad categories, i.e., institutional costs and private costs. In this unit, we shall discuss in detail about costs of education such as expenditure on education, private costs and social costs, benefits of education such as direct and indirect benefits, private and social benefits etc.

3.3 COSTS OF EDUCATION – EXPENDITURE ON EDUCATION

In general, cost is the amount of resources given up in exchange for some goods or services. The resources given up are expressed in monetary terms. But cost is different from value as cost is measured in terms of money where as value is measured in terms of usefulness or utility of an article. Cost should also be distinguished from expenses and losses though in practice the terms 'cost' and expenses' are sometimes used synonymously. The cost of education incurred possess two inseparable attributes i.e., consumption and investment. One can never separate out and say that this is the consumption component of the education cost and rest towards education as an investment. In short, cost of education means-

Cost of education= expenditure on public and private education (eliminating any duplication) + Opportunity costs not occasioning actual expenditures

The expenditure on education is regarded as an important item of a nation's budget in view of the intimate relationship between the quantum of technical skills and abilities and economic growth. All the economies allocate a sizable part of their resources towards education. Ideally the educational outlays will remain the same if these aspects are identical in

terms of factor endowments and economic goals. The difference may however be found in the methods of meeting their costs and modes of production. In a purely capitalists economy all capital, whether human or physical, is privately owned. Under these circumstances student may be asked to meet their costs of education either through familial financial support or familial real income support. After the successful completion of the educational career a student hires the capital component of his personality out to the rest of the business world and uses the income received to repay the debts, to reimburse family and to maintain himself. In the socialist society, on the other hand the state owns all capital and pays the costs of education including wages of the primary labour unit called the student. The capital so created is then later rented out to the publicly owned companies which pay for its use directly to the lending institutions.

Educational expenditures in most countries come from both public and private sources. Thus, the cost of education is the cost to the community of the expansion and functioning of the education system. The cost of education includes both direct costs (by the school, the student, and/or the student's family) and indirect costs (such as earnings foregone). Determinants of cost of education are divided into two types. These are:

A. Internal determinants of cost of education

- Teacher costs
- New techniques in education
- Obstacles in the use of new medium

B. External determinants of cost of education

- Inflation
- Educational demand
- The factor costs of education
- Educational revenues
- Foreign aid

CHECK YOUR PROGRESS



Q 1: What is cost of education? (Answer in about 30 words)

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Q 2: What are the internal determinants of cost of education? (Answer in about 20 words)

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3.4 PRIVATE COSTS AND SOCIAL COSTS AND WASTAGE AND STAGNATION

The cost of education is broadly divided into two types. These are: Private costs and Social costs. These two types are described below:

- **Private Costs**

  The private cost refers to the part of expenditures/investments which are incurred either by the parents or students or both. The financial expenses incurred by the students or parents or both (including relatives, etc.) in a year for acquiring education is called the private cost. Private cost of education may be classified into two categories: (i) academic cost and (ii) maintenance cost. Academic cost refers to expenses on the items such as fees and funds paid to the institution (i.e., tuition fees, examination fees, library fees, laboratory fees, etc.), payments made for getting private coaching, books, stationery, instruments, etc. Maintenance cost includes expenses incurred on clothing, transport, boarding and lodging and other sundry expenses. It is also known as the incidental cost.

  The academic cost is, therefore, defined as the expenditures which are directly related to getting oneself formally educated. The major components of academic cost are the pre-admission cost, fees and funds given to the college/institute, private tuition fee, and cost of books, stationery, project/thesis works, study tours and other

instrumental costs. On the other hand, the cost that is not directly related to the institutions is referred as the incidental cost. Incidental cost consists of travelling cost, hostel expenses, clothing, entertainment and others. Private Cost is borne by the students or his/her parents/guardians. It includes tuition fees, examination fees, expenditure on books, stationery, board and lodging, transport and other incidental expenses.

- **Social Costs**

  Social costs refer to costs borne by society and public. These are direct costs (teachers' salaries, current expenditure on goods and services, books etc.) and indirect costs (earning foregone). The Social cost of education is sum total of the private and the institutional cost of education. The private cost consists of net tuition costs, non-tuition costs. The institutional costs consist of both the current or operating cost and the capital costs of education borne by the schools, or society. The opportunity cost or income foregone is not included in the computation of the total social costs of education

  While estimating the social costs of education, it is necessary to see that no double counting of any item is made. If there are transfers, e.g., in terms of fees- a transfer from student to the institutions and then institution to individual, it is important that social costs of education take into account only the net of transfers. Thus,

Individual Costs	=	Household expenditure on education + opportunity costs
Institutional Costs	=	Recurring costs + non-recurring costs
Social Costs	=	Individual Costs + Institutional Costs, net of transfer

Both the private and social costs of education are of high significance not only because of their magnitudes, but also because of the nature and characteristics that are associated with these two types of costs.

- **Wastage and Stagnation**

  In India, it was the Hartog Committee (1929), which for the first time pointed out that "massive wastage and stagnation

are taking place in primary education. Primary Education is ineffective unless it at least produces literacy". According to the Committee 'wastage' meant premature withdrawal of children from school at any stage before the completion of the primary course. By 'stagnation' the committee meant detention in the same classes for more than one academic year. Regular promotion of the students to the next higher class was interrupted resulting in the withdrawal of the student from school learning. Thus, stagnation was one of the causes of wastage. Cost of education is not properly utilised because of the problems of wastage and stagnation. Monetary investment of education is not successfully implemented. Hence, it is need of the hour to reduce the wastage and stagnation from the education system for availing better benefits from education.



CHECK YOUR PROGRESS

Q 3: What is academic cost of education? (Answer in about 30 words)

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Q 4: What is social cost of education? (Answer in about 20 words)

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3.5 BENEFITS OF EDUCATION: DIRECT AND INDIRECT BENEFITS

Benefits refer to positive outcomes that can be reasonably identified as the changes resulting from an extension programme. Benefits refer to contributions to the objective function. Economists have developed various methods to measure benefits of education, such as- the residential factor in which education plays a crucial role which is also known as third factor,

cost-benefit ratios, calculation of human capital and discounting of the additional earnings of the educated over those of the uneducated which is also known as rate-of-return approach.

Education generates both consumption and investment benefits, direct and indirect benefits, also termed as internal and external benefits. The benefits are classified as: private direct and private indirect benefits, social direct and social indirect benefits, private consumption and social consumption benefits, short-term direct and indirect benefits, long-term direct and indirect benefits and so forth.

Two main components of benefits i.e., direct or primary and indirect or secondary benefits are discussed below:

- **Direct Benefits:**

  The direct benefits can be defined as the immediate effects of the projects. Direct benefits of education are classified by Weisbrod (1962: 109) into the following categories:

  - Direct financial return accompanying additional education;
  - Financial option return which is the value of the option to receive further education and the returns accompanying it. The option value approach attributes to investment in one level of schooling, a portion of the additional return over cost which can be obtained from further education, specially, that portion which is in excess of the opportunity cost rate of return;
  - Non-financial options which include job options, income-leisure options, security options, additional schooling options, on-the-job-training options, way of life options, etc.,
  - Hedging options which is the increased ability to exploit changing job opportunities in the context of the vicissitudes of technological change and obsolescence of skills; and
  - Non-market returns like the preparation of one's own income-tax returns by the educated person himself.

- **Indirect Benefits :**

Indirect benefits are the benefits which are external to the recipients of education and they accrue to others. John Vaizey (1962) rightly observes that the indirect benefits of education are so great that the direct benefits are not necessarily the most important aspect. It is clear that education generates benefits which not only accrue to the person receiving education, but also to other persons, organisations, etc. with whom he/she is associated. These indirect benefits of education are also termed as spill-over. Some important indirect benefits of education have been enumerated by Blaug (1965: 234-35) as follows :

- The current spill-over income gains or benefits the persons other than those who have received extra-education.
- The spill-over income gains to subsequent generations from a better educated present generation.
- The means of assuring occupational flexibility of the labour force and thus, to furnish the skilled manpower requirements of a growing economy.
- The provision of an environment that stimulates research in science and technology.
- The tendency to encourage lawful behaviour and to promote voluntary responsibility for welfare activities both of which tend to reduce the demand for social services.
- The tendency to foster political maturity by developing an informed electorate and competent political leadership.
- The supply of a certain measure of 'social control' by the transmission of a common heritage.
- The enhancement of the enjoyment of leisure by widening the intellectual horizon of both the educated and the uneducated.
- Socialization of the younger members of society.
- Satisfaction gained by parents on account of their children's education.



CHECK YOUR PROGRESS

Q 5: Mention three indirect benefits of education according to Blaug. (Answer in about 50 words)

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3.6 PRIVATE AND SOCIAL BENEFITS

Benefits of education are further classified into two types; such as private benefits and social benefits. These are discussed below:

- **Private Benefits:**

  The private benefits of education are private benefits to the student and his or her family. They are not external benefits but instead private benefits to own-health, spousal health, longevity, lower infant mortality, child health, child education, child cognitive development, lower fertility leading to smaller families, and happiness or well being. The value of each of these private education benefits can be valued and their value is just as legitimate as estimates of the value of the earnings benefits. These private benefits are measured using a household production function attributed to Becker (1964). It includes per capita income since market goods are also needed to produce these final outcomes. The income term leads to avoiding the double counting the market benefits of education, and also permits the placing of a monetary value on the outcome. Some of these private benefits also are indirect. For example, education contributes to own-health which in turn contributes indirectly to child education and health.

- **Social Benefits :**

  The social benefits of education are normally defined to include the total benefits of education which includes external benefits. The social benefits of education are education externalities that spill over to benefit others in the society including others in future generations. Some can be monetary, such as the additional taxes paid by

graduates that significantly benefit others, and the positive effects on wages of having additional students in the community, but most are non-monetary. The latter include the direct benefits which are public goods such as benefits to the operation and improvement of civic and charitable institutions, but also the indirect benefits as education operates through other variables to feedback over time to increase GDP and non-monetary development outcomes beyond GDP. There are social benefits from the contributions of the ideas and technologies disseminated by graduates who have been exposed to faculty who access new research worldwide and embody the new knowledge in graduates. There are also social benefits as more Masters and PhD graduates generate an increased flow of new ideas and adaptations throughout their life cycles that benefit others and future generations.



CHECK YOUR PROGRESS

Q 6: Give some examples of private benefits of education? (Answer in about 30 words)

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3.7 LET US SUM UP

- Economic productivity through education can only make the child useful, loyal and disciplined citizen of the country.
- In general, cost is the amount of resources given up in exchange for some goods or services. The resources given up are expressed in monetary terms.
- The cost of education refers to the cost incurred by the state government or private sector for providing education to the citizens.
- Educational expenditures in most countries come from both public

and private sources. Thus, the cost of education is the cost to the community of the expansion and functioning of the education system. The cost of education includes both direct costs (by the school, the student, and/or the student's family) and indirect costs (such as earnings foregone).

- Financial expenses incurred by the students or parents or both (including relatives, etc.) in a year for acquiring education is called the private cost. Private cost of education may be classified into two categories: (i) academic cost and (ii) maintenance cost.
- Social costs refer to costs borne by society and public. These are direct costs (teachers' salaries, current expenditure on goods and services, books etc.) and indirect costs (earning foregone). The Social cost of education is sum total of the private and the institutional cost of education. The private cost consists of net tuition costs, non-tuition costs.
- Cost of education is not properly utilised because of the problems of wastage and stagnation. Monetary investment of education is not successfully implemented. Hence, it is need of the hour to reduce the wastage and stagnation from the education system for availing better benefits from education.
- Benefits refer to positive outcomes that can be reasonably identified as the changes resulting from an extension programme. Benefits refer to contributions to the objective function.
- The direct benefits can be defined as the immediate effects of the projects and indirect benefits are the benefits which are external to the recipients of education and they accrue to others. John Vaizey (1962) rightly observes that the indirect benefits of education are so great that the direct benefits are not necessarily the most important aspect.
- The private benefits of education are private benefits to the student and his or her family. They are not external benefits but instead private benefits to own-health, spousal health, longevity, lower infant mortality, child health, child education, child cognitive development, lower fertility leading to smaller families, and happiness or well being.

- The social benefits of education are normally defined to include the total benefits of education which includes external benefits.



3.8 FURTHER READING

1) Blaug, M, (1965). *The Rate of Return to Investment in Education in Great Britain, Manchester School of Economics and Social Studies.* 33/3 (September) 205-251.

2) Latchanna & Hussein (2013). *Economics of Education*. New Delhi: Discovery Publishing House.

3) Sharma, R. A. (2007). *Economics of Education- Educational Finance & Productivity.* Meerut: R. Lall Book Depot.

4) Singh, B. (1976). *Education as an Investment*. Meerut: Meenakshi Prakashan.

5) Vaizey, John (1958). The Cost of Education. London: Allen and Unwin.

6) Weisbrod, 8.A, (1961). *The Valuation of Human Capital, Journal of Political Economy.* 69/5 (October) 425-36.



3.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No. 1: The cost of education refers to the cost incurred by the state government or private sector for providing education to the citizens. The cost of education incurred possess two inseparable attributes i.e. consumption and investment.

Ans to Q No. 2: Internal determinants of cost of education are teacher costs, new techniques in education and obstacles in the use of new medium.

Ans to Q No. 3: Academic cost refers to expenses on the items such as fees and funds paid to the institution (i.e. tuition fees, examination fees, library fees, laboratory fees, etc.), payments made for getting

private coaching, books, stationery, instruments, etc.

Ans to Q No. 4: Social costs refer to costs borne by society and public. These are direct costs (teachers' salaries, current expenditure on goods and services, books etc.) and indirect costs (earning foregone).

Ans to Q No. 5: Three indirect benefits of education have been enumerated by Blaug are:

- The current spill-over income gains to persons other than those who have received extra-education.
- The spill-over income gains to subsequent generations from a better educated present generation.
- The means of assuring occupational flexibility of the labour force and thus, to furnish the skilled manpower requirements of a growing economy.

Ans to Q No. 6: Some examples of private benefits of education are own-health, spousal health, longevity, lower infant mortality, child health, child education, child cognitive development, lower fertility leading to smaller families, and happiness or well being.



3.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Write about the concept of cost.

Q 2: What are direct and indirect costs involved in education.

Q 3: Write short notes on a) Wastage and stagnation related to cost of education and b) External determinants of cost of education.

Long Questions (Answer each question in about 300-500 words)

Q 1: What is private cost? Explain its classification.

Q 2: Explain in brief the direct and indirect benefits of education.

Q 3: Discuss about private and social benefits of education.

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UNIT 4: RETURNS OF EDUCATION AND ITS FINANCING

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Investment in Education

4.4 Returns from Investment in Education

4.5 Problems in Measuring Returns from Investment in Education

4.6 Educational Financing: Resource Mobilisation and Utilisation

4.7 Let us Sum up

4.8 Further Reading

4.9 Answers to Check Your Progress

4.10 Model Questions

4.1 LEARNING OBJECTIVES

After reading this unit, you will be able to:

- explain the idea of investment in education and the returns from it
- discuss the problems in measuring returns from investment in education
- discuss financing of education through mobilisation and utilisation of resources

4.2 INTRODUCTION

Human capital formation is one of the pre-requisites of economic growth and development. One of the factors determining human capital formation is education and training. Several classical economists like Adam Smith, Alfred Marshall and J.S. Mill emphasised on the importance of education as a form of national investment. They also put thought as to how education should be financed. However, making provisions for education involves cost, which requires funding. Funding in education to a large extent determines the quality of education.

4.3 INVESTMENT IN EDUCATION

There is a crucial relationship between education and earnings. Not only it leads to higher earnings but also facilitates numerous other benefits. To name a few, investment in education can reduce poverty, enhance equality, improve health, etc. Many studies estimate that the rate of returns to education equates the value of lifetime earnings for an average individual with the cost of their education. So, if the rate of return is positive and higher than alternative forms of investment, investment in education makes sense. The investments can be categorised into private rate of return to education and social rate of return. The global average of the private rate of return to an additional year of schooling is about 8.8 per cent. It was also found that the returns are higher in developing countries as compared to developed ones. Moreover, the developing countries exhibit higher returns to education. The developed countries, on the other hand, experience higher returns to tertiary education. Thus, the returns to each level of education provide information to policymakers about public investment priorities. It was seen that low and middle-income countries present an average of 9.3 per cent and 9.2 per cent respectively on the private returns to schooling. In India, the estimate of private return to education is as low as 7.6 per cent on an average which can be attributed to several reasons including issues of quality in education.

According to E. Mark Hanson the subject matter of economics of education falls into seven categories as follows-

- Human capital formation.
- Education's contribution to economic growth.
- Impact of education on earning.
- Historical background of economics of education.
- Relationship between education and earning.
- Programme budgeting and financing of education.
- Efficiency and equality of education as opportunity.

4.4 RETURNS FROM INVESTMENT IN EDUCATION

With roots in the writings of classical economists (see, for example, Adam Smith 1776; Marshall 1890) the link between education and earnings only recently emerged. The concept of the rate of return on investment in education is very similar to that of any other investment. It is a summary of the costs and benefits of the investment incurred at different points in time, and it is expressed in an annual (percentage) yield, like that quoted for savings accounts or government bonds. Returns on investment in education based on human capital theory have been estimated since the late 1950s. Human capital theory puts forward the concept that investments in education increase future productivity. It is, therefore, important to estimate returns from education from the perspective of efficiency, equity and financing. It can help the policy makers to make informed investment decisions about investment in education by comparing various returns of alternative investments. According to George Psacharopoulos, the private returns to primary education decline over time. However, the social returns from primary education are still higher in all the regions of the world. However, according to G. Psacharopoulos and Harry Anthony Patrinos (2004) the private returns are increasing. While the highest returns are recorded for low-income and middle-income countries, the average returns to schooling are highest in Latin America and the Caribbean nations. Investment in education provides an opportunity for the society to reduce inequality by allowing the people to raise their incomes. A high or increasing return means that the price of education is increasing. So, it is necessary to calculate the returns from investment in education.

The rate of return to education equates the value of lifetime earnings of an individual to the net present value of costs of education. Therefore, it is necessary that the rate of return from education should be positive and should be higher than the alternative rate of return, for the investment to be economically justified.

So, it is necessary that the costs and benefits from the education are weighed before making an investment. At individual level, the cost-benefit

analysis means that the rate of return exceeds the private discount rate. The discount rate includes the cost of borrowing and an allowance for risk. The costs include the opportunity cost incurred by the individuals for forgoing earnings while studying and the tuition fees or any other incidental expenses incurred by the individual. The private benefits refer to the extra earnings earned by an educated individual as compared to someone with lesser education. The social rate of return refers to society's spending on education. The social rate of return includes all the non-monetary and external benefits of education. However, due to lack of empirical evidence on the social benefits of education, the social rate of return is usually calculated based on directly observable monetary costs and benefits of education. However, social returns are typically lower than a private rate of return.

To estimate net benefits arising from education, various methods are used. One such method is the internal rate of return, which is an accounting method that permits a comparison of returns across different assets. Investment needed to achieve education constitutes the costs. Therefore, to calculate the economic rate of return from education, the discounted cost of investments needs to be examined along with the discounted value of future benefits. The rate of return is defined as the interest rate that makes the net present value of all cash flow i.e., the benefits and the costs equal to zero. At individual level, the internal rate of return of education is the annual rate of return that his/ her investment in education will yield.

In calculating the various rates of return, one needs to differentiate the benefits and costs. The "private" return to education takes account only of privately borne costs (including foregone earnings while in education) and private gains in terms of higher post-tax earnings. On the other hand, the "social" return to education includes both private and public costs and benefits. The private rate of return influences the decision of the individuals to undertake education, whereas, the social rate of return influences societies' collective choice to finance education through taxes, government debt and private contributions. The difference between the private and the social rates of return reflects the degree of public subsidization of education;

the only difference is the addition of social cost. So, the marginal effects of education on earnings and economic growth can be used to estimate the benefits of undertaking education.



CHECK YOUR PROGRESS

Q 1: Why is the study of educational cost necessary?

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Q 2: What is Investment in education?

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Q 3: What is the rationale of Cost-Benefit Analysis of Education?

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Q 4: Define Rate of Returns in Education.

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4.5 PROBLEMS IN MEASURING RETURNS FROM INVESTMENT IN EDUCATION

It is a widely accepted belief that people with higher education make more money than those with less education. However, measuring returns from education is not simple and straightforward and has been criticised on many grounds. The return to education is the difference between a highly educated and a lesser educated person. However, people

can always invest in human capital and sell their labour for higher prices. So, one of the most discussed topics in Labour Economics is about the relationship between education and earnings. The goal here is to analyse the impact of education on earnings, which is more often not straightforward. Having a higher degree does not necessarily mean a higher pay, rather it can be the characteristics that makes the person more productive in the labour market. To isolate the effect of a college education on earnings, the comparison usually is made among people who have as much similarity as possible in everything but their level of education. There are many factors that might affect the return to education, like the demographic factors viz. age, gender, family background, school quality etc. Quantifying any of these factors is a difficult task. Different studies take different approaches and use different estimation techniques and almost all studies find that higher education is associated higher earnings. However, the estimates of the return to education vary in the studies and most of the studies estimate that the return to one year of schooling is, on average, between 8 and 13 percent.

But the return on investment in human capital is usually specific to the labour market. One of the studies found that returns to education are usually lower in cities with higher costs of living. People with higher education might accept lower pay to work in an attractive city with a higher cost of living, whereas less-educated people might be paid more to work in these cities owing to higher cost of living. In such situations the discrepancy in pay is smaller between both the groups of people than elsewhere. It is important to mention that even though measured “monetary returns to education” are lower in more-attractive cities, people with more education are not disadvantaged when they choose to settle there. They are accepting lower returns to their education by paying for an access to amenities of a nice city. The same study also estimated that the cross-city differences in the returns to college education are even bigger if smaller cities are considered as well. So, determining the monetary return to education is difficult.

However, it is practically impossible to quantify the numerous non-monetary returns to education. The education received helps the individual to make better choices and decisions in every sphere of life. It inculcates goal-oriented behaviour in individual who can in turn help to achieve better social and economic growth through knowledge spill over. It not only enhances the productivity of an individual but of the society as a whole. However, the estimates of the private returns to education always do not account for all the benefits the society receives from an individual's investment in education. Therefore, research to evaluate the social returns to education is extremely important from the policy making perspective viz. assessing the efficiency of public investment in education. Despite the difficulty in assessing, the returns to education are of prime importance in the study of labour economics. It is unlikely that the importance of education will disappear from the public policy spectrum. As a result, continuous economic research on the subject will definitely guide effective public policy.

A rate of return on investment in education should ideally be based on a representative sample of a country's population. But in reality, it is difficult to estimate rates of return when it is based on a survey of firms rather than the households, because firm-based samples are highly selective in nature. This usually leads to concentration of samples in urban areas, which focus on the large firms with large number of employees. Besides, the rate of return estimates that are based on the samples of public-sector wages does not reflect market wages. However, the rate of return estimates that are based on public sector pay are useful to calculate incentives by the state for investing in education. Jacob Mincer estimated the returns on educational investment by means of the well-known earnings function. He explained the differences in earnings among individuals based on their differences in schooling attainments and work experience. More research on the social benefits of schooling which can be used to create programmes that promote investment and reform financing mechanisms in education. Further, if the social rates of return that include true social benefits, or externalities are included, then social rates of return may well be higher than private rates of return.

4.6 EDUCATIONAL FINANCING: RESOURCE MOBILIZATION AND UTILIZATION

The demands for educational opportunities are growing across countries. The demands are increasing steadily due to the realisation and recognition of the benefits of higher education. However, many countries, especially, the developing countries face constraints in meeting the cost of expanding higher levels of educational opportunities. To expand educational opportunities, there is a need to allocate more resources in the financing of education. However, it is not always possible for the government to provide with the higher costs. This calls for cost sharing amongst various participants in the education system. The question of cost sharing is especially relevant at the beginning (pre-primary) and ending (tertiary education stages) of education.

The benefits of education carry substantial financial demands. The challenge is to ensure equitable distribution of education to all and expansion of higher education, for it guides the investment and the returns from education. Thus, it is necessary to examine the management and financing of educational institutions through the lens of public- private stakeholders. The distribution of expenditure on education is indicative of the policy priorities in a country. So, there is necessity to emphasise the importance of policies that not only allow greater participation in the education process but also maintain equity in the sharing of the costs and benefits of education.

While analysing the public private investment in education, it needs to be understood that the level of public and private investment in education varies widely among different countries. It is noticed that private spending has a substantial contribution at all levels of educational spending. Along with public spending, the efforts to expand coverage of higher education can move ahead with the cost-sharing from the private sector. With certain public budgetary constraints and difference in costs per student, to increase overall proportion in spending on education requires efforts from the private stakeholders as well. The cost-sharing along with the implementation of user-fees will help to expand enrollments and also ensure equity. From the

perspective of equity, greater cost-recovery should be sought at higher levels of education, because, there the individual returns to education are the highest.

However, concerns have been raised on the grounds that greater user fees in the education system may create barriers to participation. It might also weaken the commitment to equality of educational opportunity to all which has both economic and social implications. So, it is imperative that there are new funding strategies for education and distinctions are made between public and private funding of education. This distinction between public and private funding can include ownership of property, various supplies, admission criteria and fees, appointment of teachers and salary payment of the teachers, the curriculum etc along with the sources of funding. Private funding and expenditure on household levels differ based on the type of school. In government educational institutions depending on the country, it can range from no expenditure by the household to bare minimum expenditure which is usually subsidised. However, in case of private institutions, households have to pay for the tuition fees and all the other fees to cover the full cost of provision since the state does not subsidise independent private institutions. With growing participation of the private sectors, the distribution of enrollment is also undergoing a change. The private institutions often offer specific educational opportunities that are not provided by the state. This distribution of enrollment reflects the relative importance of the private sector in educational provision. The private sector meets excess demand rising out of short-falls in supply by the public-sector. With the change in the role of private sector in funding of education, it is imperative that with the expansion of higher levels of education, the equitable access to all is not compromised. This should not act as an exclusion mechanism particularly by the countries with higher socio-economic disparities. The balance between public and private should be maintained to create opportunities for the learners, rather than creating barriers.

As the policies evolve the countries should adapt their budgets and have new funding strategies to develop linkage between budget and strategy frameworks and mobilise resources from both the public and private sources.

These strategies should aim at improving the efficiency of learning opportunities for all and facilitate the allocation of funding according to policy priorities. It should also monitor on the spending against the achievement of policy objectives. However, the process is not simple and straightforward and the challenge is to identify the educational priorities that would guide the budgeting process. It requires evaluation of the funding in terms of inputs, processes and outcomes the education system would provide, which is very often complex in nature. This improves the decision-making process and also effective use of the scarce resources. But, the investments of any form have a gestation period and the results are usually achieved after a period of time. Therefore, evaluating the effectiveness of the resources and conclusions based on costs and outcomes are difficult to draw.



4.7 LET US SUM UP

- Education is not only vital to the economic well-being of individuals but also the society as a whole as it generates both private and social returns.
- An important determinant of economic growth and human capital accumulation is the access to equitable education. It helps in the building of nation in a participatory and cohesive manner.
- Financing of education not only examines the investments on education, but also the returns to education and its role in human capital formation.
- The financing of education in various countries are examined through the lens of public and private investments. It looks into the rationale for public spending and how resources are distributed across various levels of education. It also looks into the role of the private sector from the perspective of educational expenditure and provider of educational services.
- Human capital is the key to economic growth and development and investment in education plays a crucial role in the human capital

formation. As such investment in education is considered not only from the perspective of individual development, but also the collective growth of the societies.



4.8 FURTHER READING

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4) George Psacharopoulos. (1987). *Economics of Education*: Research and studies: Oxford, New York: Pergamon Press.

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6) Tyler, John H., Richard J. Murnane, and John B. Willett. (2000). *Estimating the Labor Market Signaling Value of a GED*: The Quarterly Journal of Economics.

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4.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No. 1: The quality of education is highly influenced by the cost incurred on a particular level of education. Joel Babalola in his

definition refers to educational cost as a measure of what a student, an institution or the government has to give up in order to educate an individual or a group of individuals. Educational cost is the monetary as well as non-monetary values used up in the process of educating an individual or a group of individuals. Therefore, it is imperative to study the educational cost.

Ans to Q No. 2: Investment in education is an important subject matter of economics of education. Investment is defined as the process of postponing immediate consumption in the expectation of greater consumption in the future. The investment theory in education postulates that government or individuals should invest in educational projects with greater utility or highest rate of returns. Theoretical framework of Investment in education has occupied an important place in economics of education.

Ans to Q No 3: Cost Benefit Analysis is an area of economics of education. It is a systematic comparison of the magnitude of the cost and benefits of some forms of educational investment in order to determine the economic profitability of such investment. It provides a rational model for investment decision making in education by relating the profitability of investment in one sector of the education enterprise to the other, or between various levels and types of education, such as vocational, professional, technical or general education. This content occupies an important place in economics of education as it guides the investment decisions in right direction.

Ans to Q No.4: Returns to investment in education are the benefits derived by educational consumers as a result of their investments in education. The return of education can be of two types. These are private rate of return and social rate of return. By private rate of return we mean those benefits accrued to individuals at the end of schooling as a result of investment in education. The benefits derived by the government or society for an educational investment project is referred to as social rate of return.



4.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Define Economics of Education.

Q 2: State the definition of economics and the economics of education.

Q 3: How is education related to economics?

Long Questions (Answer each question in about 300-500 words)

Q 1: Explain the scope of Economics of Education.

Q 2: Explain the importance and need to study Economics of Education.

Q 3: Explain the relevance of Economics of Education.

Q 4: Explain the problems in measuring Returns from Investment in education.

Q 5: Discuss the role of Educational Financing and Resource Mobilisation and Utilisation in Economics of Education.

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UNIT 5: EDUCATION AND LABOUR MARKET

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Role of Education

5.3 Education and Labour Market

5.3.1 Factors influencing Labour market

5.4 Factors affecting Labour Supply

5.5 Regional Disparities, Migration and Labour Market

5.6 Effect of Educational Financing on Income Distribution

5.6.1. Principles of Educational Finance

5.6.2 Sources of Educational Finance

5.6.3 Benefits of Education in distribution

5.7 Effect of Education

5.8 Let Us Sum Up

5.9 Further Reading

5.10 Answers to Check your Progress

5.11 Model Questions

5.1 LEARNING OBJECTIVES:

After going through this unit, you will be able to

- Understand about role and significance of education.
- Know about the relationship between education and labour market.
- Know the mechanism by which labour market affected by education.
- Enable to know the factors affecting the labour market.
- Understand regional disparities, migration and labour market.
- Know the effect of educational financing on income distribution.
- Know the benefit of education on income distribution.
- know the effect of education

5.2. ROLE OF EDUCATION

The word education means to acquire knowledge, expertise, technique regarding any special task or subject. According to **Sir Percy Nunn**, a British educationist, “Education is the complete development of the individuality of the child so that he can make an original contribution of human life according to best of his capacity”. Nowadays with rapid growth and development of science and technology and social changes in various aspects the meaning of education has become broader in all aspects of our everyday life.

Education is considered as a key factor and an essential requirement for individual, social and economic development. Education is an important instrument to bring about change in overall development through efficient use of existing resources of an economy. To satisfy the emerging change in the age of globe and to accelerate the progress, there is a need of well structured, dynamic, relevant and emerging education to lead overall growth of a nation. An appropriate education system can accelerate awareness, skill, knowledge, positive attitude, strength, productivity to challenge social disorder, inequality, income disparity, etc. which are considered as obstacles of an economy. The quality of performance has become a key factor of personal progress and the quality of education system on great extent depends on qualitative achievement of the student community. The future progress of an economy largely depends upon the quality of output of educational institutions. The quality of education is a multidimensional concept which should embrace all its function of activities; teaching and academic programs, research and scholarship, staffing, students, buildings, facilities of equipments, services to community and economic environment. International commission on Delor’s Committee Report on education 1996 for Twenty First Century entitled, “Learning the treasure within the commission has identified four pillars of learning i.e., learning to know, learning to do, learning to together and learning to be”.

Education contributes to human resource development in many ways. The main responsibility of education from the economic development perspective is to make an individual technically fit for work, who can

participate in development and diffusion of innovations in the economy. Education can create new boundaries of existing knowledge through research and advancement and serve as a means of knowledge transfer and dissemination. The cost of education is not expenses or expenditure in consumption but is an investment. The objective of education is to develop human capital whose productivity is raised by education. It is argued that the human capital of an economy is the real determining factor of economic growth and development rather than financial and other productive resources. The human capital, the real wealth of a nation is an active factor or agent that accumulates all factors of production, apply their skill, develop technology and efficiently utilize the resources.

The significance of education in economic development can be traced from following points.

- Education increases the accessibility of people to modern and scientific ideas.
- It increases the efficiency and ability of people to absorb new technology.
- It creates the awareness of the available opportunities and mobility of labour.
- Education helps individual to gain new knowledge, skill and attitude which would enable them to understand changes in society and scientific advancement.
- Investment in education is one of the main sources of human capital formation which facilitates invention and innovation.
- Educated labour facilitates adaptation of advance technology for greater achievements and progress.

5.3 EDUCATION AND LABOUR MARKET

There is no doubt that investment in human capital is an important element in the economic development process. Plato wrote “if a man neglects education he walks lame to the end of his life”. Economic studies provide very strong and consistent evidence that educated workers are more productive and that they can earn high salaries. Human capital theory

as given by James Heckman points that investing in education has a payoff in terms of higher wages. The overall investment on education increases by 10 per cent in a year which is typically more than any other investment and individual could make. The nation's productivity of physical capital is a function of quality of human capital and if human capital does not increase along with physical capital then economic development cannot proceed. Few centuries ago Adam Smith identified, "The annual labour of every nation is found which originally supplies it with all the necessaries and convenience of life." In his theory of value, he believed that labour is the real source of value and real measure of exchange value of all commodities. There is no doubt that average level of education and skill and national income rise simultaneously of a country. So, this idea not only support Adam Smith's view but also proves that skill and education of labour plays a crucial role in economic development. The skilled worker increases the marginal productivity of physical capital and other workers. In a growing economy increase marginal productivity of physical and human capital is required to offset the diminishing return and to encourage increase in further investment in physical and human capital again.

Education is an important instrument to fight poverty and help individual to access better job that raise their earnings and thus contributes to the improvement of their lives. In labour market education provides productive capacities to potential employers and hence attained qualification and different skills are the main asset for job in the labour market. The labour market outcomes resulted from having proper education and there are various pathways through which education operates when generating the effect.

5.3.1 Factors influencing the Labour Market:

- **Educational level attained:**

  Evidence shows that educational level attained have an effect on occupational status, which means higher education provides a substantial advantage over a less qualified or less skilled person. Employment depends on availability of

educated and skilled person in the labour market. The workers with new skill are provided higher wages in the short run however, in long run the work force with new skill increases. Eventually, in the long run the additional work force tends to lower the wage rate. Therefore, government investment is essential to absorb the additional skilled labour force or maintain the continuous demand of labour in the market.

- **Attainment of Particular Credentials:**

  Attainment of particular credential is one of the important occupational determinants of potential labour market. A particular credential enhances an individual more educational return than increased in general level of knowledge. In the labour market, a person's academic credentials signify specifically their eligibility to a particular job or occupation i.e. vocational credentials may specifically signify that an individual is formally qualified for a particular job.

- **Educational system and Schooling quality**:

  It is true that the quality of education and skill mostly depends on educational system and schooling quality. A good institution with well equipped infrastructure, educational equipment, and proper trained and qualified teaching community will produce good quality of students compared to other institutions and hence, there is high potentiality of demand of such students in labour market.

- **Rate of Return Approach:**

  In this approach, the rate of return is calculated from expenditure made by the individual on education and measurement of the flow of an individual future earnings expected to result from education. This method was used by Gary S Backer who measured income differential arising from the cost of expenditure incurred by acquiring college education in United States. His estimate shows that the rate of return on education in USA for urban white population was

12.5 per cent in 1940 and 10 per cent in 1950. The rate of return on investment on education is based upon private rates of return to individual receiving education. However, by assuming that differences in earning in a market economy reflect differences in productivity, the rate of return of investment in education is taken to be an effect of education on output of the economy.

- **Investment in Education:**

Investment in education helps to broaden access to education and hence facilitate the access to skills, thus enabling people to get better job. Research literature provides evidence of the value of investing in education to develop human capital. Using the investment in education approach Schultz studied the relationship between expenditure on education and consumer's income and also the relationship between education and physical capital formation for United States during the period 1900 to 1956. He found that when measured to constant dollars, the resource allocated to education rose about three and half times (a) relative to consumer's income in dollars, (b) relative to gross formation of physical capital in dollars.

Education is regarded as investment in physical capital. It increases productivity of labour and thus contributes to the growth of national income and hence increase more demand in labour market. The increased earnings or higher wages made by more educated workers have been considered as benefits not only to private individuals but also to society as a whole. This is because higher earnings presumably reflect higher productivity, increased output in real as well as monetary terms.

- **Individual Educational Track:**

The literature on education and labour market suggests that better education with better educational track workers

receives an education premium and resulting in higher earnings. Better educated workers enjoy less unemployment or higher labour market participation as well as longer duration of careers for their high levels of skill.

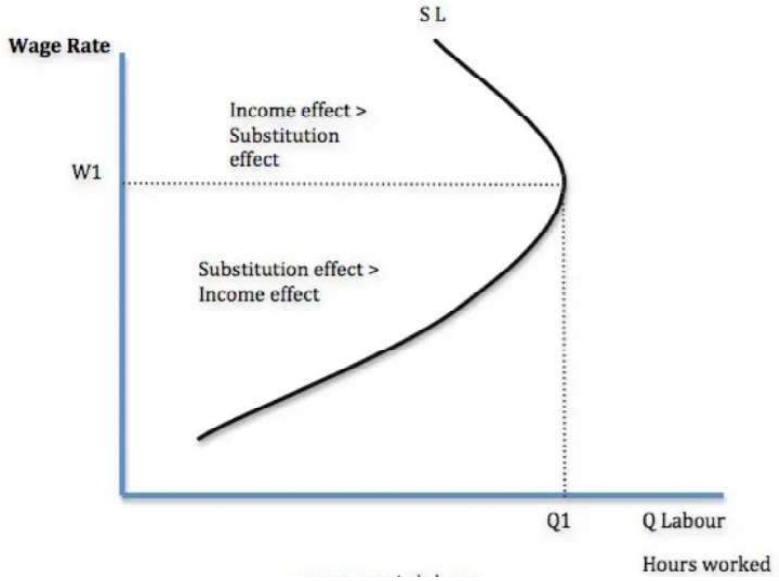
5.4 FACTORS AFFECTING LABOUR SUPPLY

- Wages and earnings
- Number of qualified persons
- Nature of work (working in unhealthy condition decreases supply of labour)
- Hours of work
- Stability of job
- Incentives and reward
- Overtime incentives
- Fringe benefit
- Health and medical facilities
- Housing facilities
- Leisure and provision of upgradation of job
- Demographic change and migration

Higher wages usually will encourage to supply more labour because work is more attractive compared to leisure. Therefore, the supply curve tends to upward sloping. However, the workers are not just interested in earning money but interested in leisure too. Therefore, there is a choice between working more with higher wage or to working less with more leisure. Two factors that influence supply of labour are

- Substitution effect with rise in wage will give greater value to working and higher opportunity cost of not working. The substitution effect cause more hours to be work as labour rises.
- The income effect of rise in wage occurs when an increase in wage cause workers to work fewer hours. This is because workers can get higher income by working fewer hours and they may work less.

Fig 1 Supply curve of labour in relation with wage and leisure



In fig 1 up to W1 wage rate, substitution effect is greater than the income effect and higher wage causes more hours to work. But after wage rate more than W1, the income effect outweighs the substitution effect and people work fewer hours because they can get their targeted income from lesser number of working hours.

5.5 REGIONAL DISPARITIES, MIGRATION AND LABOUR MARKET

Gunner Myrdal (1957 – 1963) holds the view that in the context of development, both the social and economic forces produce tendency to disequilibrium and the assumption of economic theory that the disequilibrium tends towards equilibrium is false. Myrdal, therefore, replaces the assumption of stable equilibrium by his hypothesis- **circular and cumulative causation.** He argues that the use of hypothesis can go long way towards explaining the international differences and inter-regional differences in development. This difference is widening day by day.

Myrdal considers his hypothesis in the context of geographically dual economy and describes that labour migration, capital movement and trade creates dualism in an economy. The dualism not only hinders the development of backward region but also the development of the whole

economy. To describe the hypothesis, **it assumes** that there is same level of development (income, productivity, wages etc) in an economy. Now assume some exogenous forces (i.e., social and economic forces) producing disequilibrium and development takes place more rapidly in that region than others. The hypothesis explains that due to disequilibrium and cumulative expansion, the development and expansion of economic activities grows fast in the favoured region and demand for labour and other factor market also improves.

Myrdal in contrast with neoclassical theory assumes that the multiplier accelerator mechanism producing increasing returns in favoured region. Instead of leading to equality, the forces of supply and demand interact with each other to produce cumulative movements away from the equilibrium. Since wage is the basic determinant of per capita income, Myrdal describes the hypothesis taking wage as an example with two regions i.e., developed (A) and underdeveloped (B) and assumes that wage in **labour market** is determined by supply of and demand for labour.

Fig. 2. Differences of Wage in labour Market due to Migration

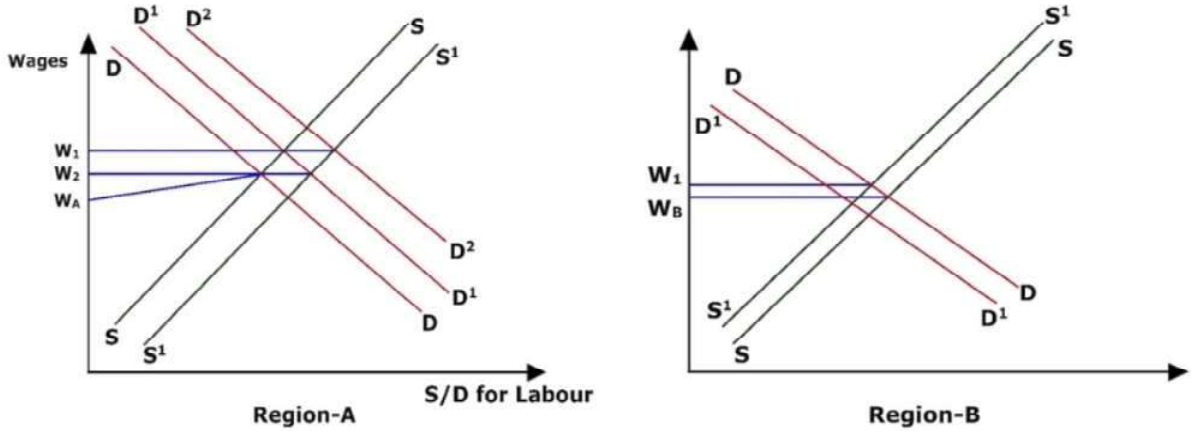


Fig. 2 assumes that wage is identical in both the regions W_A=W_B and due to some exogenous forces wage increases to W2 in region (A) which will tend to shift demand curve from DD to DD_1. This excess demand causes migration of labour from region (B) to region (A). The neoclassical theory predicts that the high wage rate OW_1 is also equalise in region (B) as there is scarcity of labour. The labour supply curve SS shift to SS_1 and thereby

intersection between demand and supply of labour new wage rate determined at OW1 in the region (B) which is equal to OW2 in region A.

But the cumulative causation hypothesis makes a different explanation of the situation. According to the hypothesis the migration of labour from region (B) would cause decline of demand for goods and services and factors of production. The movement of labour on the other hand in region (A) will cause the shift of demand curve to DD_2 from DD_1 and tend to again higher wage above OW_2. Thus, once development difference appears, this sets in motion of chain cumulative expansion in developed region. The tendency that developed in one region which tends to be worst off in other region is called **backwash effect** and vice versa. Therefore, the demand for skilled and educated person in the labour market increases in the favoured region due to migration and hence offer higher wages.

Capital movement and trade are the other factors that cause the cumulative causation. Capital will shift from the region of low capital return to the region with high capital return. With capital, labour and entrepreneur also migrates to the expanding region. The trade also benefits the developed regions. If production is subjected to increasing returns, the region experiencing the rapid growth by the factor suppliers will tend to increase their competitive advantage over the lagging behind regions with small scale production.



CHECK YOUR PROGRESS

Q.1: Explain how attainment of particular credentials affect labour market. (Answer the question by 50 words)

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.....

Q.2: What is the relationship between wage rate and leisure? (Answer the question by 50 words).

.....

.....

5.6 EFFECT OF EDUCATIONAL FINANCING ON INCOME DISTRIBUTION

Education in every sense is one of the fundamental factors of economic development. No country can achieve sustainable economic development without substantial investment in human capital. Education enriches people's understanding of themselves and the world. It improves the quality of their lives and lead to broad social benefits. Education increases people's productivity and creativity and promote entrepreneurship and technological advancements. In addition, it plays a very crucial role in securing economic and social progress and improving income distribution.

Education finance is a term used to describe the financial and 'in-kind' resources available for education. The concept of education finance also addresses questions about how resources are allocated, used, and accounted for to achieve sustainable, quality education for all children and youth.

The implementation of the right to education requires funding in order to build schools, pay for the teachers' salaries and training, provide teaching materials, etc. Under international law, states have the obligation to use the maximum of their available resources to realise the right to education. Even when a state's resources are very limited, it is obliged to prioritise certain immediate obligations, such as the introduction of free primary education and to guarantee education for all without discrimination. It is also obliged to provide progressively free secondary and higher education and to continuously improve the quality of education. This means that it must take immediate and progressive steps to fully realise the right to education and must not take retrogressive measures.

To implement the right to education effectively, states should ensure that a sufficient proportion of the national budget is allocated to education financing and that the money is used effectively and equitably to guarantee education for all, as well as redress inequalities.

5.6.1 Principles of Educational Finance

- Performing efficiency
- Promoting equality
- Flexibility
- National Unity
- Ethics

5.6.2 Sources of Educational Finance

External Sources: Aid, Loans and other sources i.e., investment from other countries, financial support etc.

Internal Sources: Internal financing are from two sources

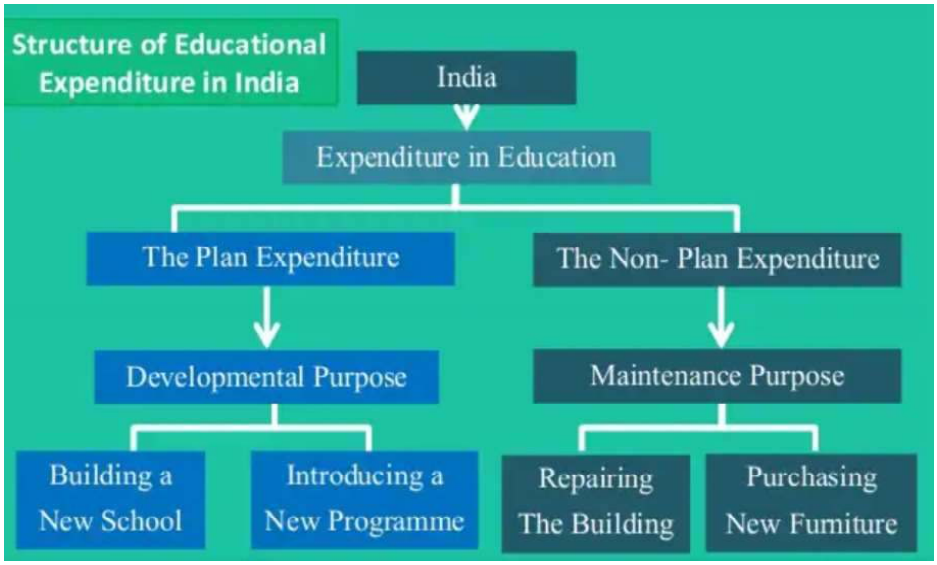
- **Private sources** i.e., different fees, maintenance fee, others revenue etc.
- **Public sources** are of two types
  - Governmental sources i.e., Central, State, UGC, NCERT and Financial Aid
  - Quasi Governmental sources i.e., Districts, Municipalities, Panchayat etc.

Fig. 3 Structure of Educational Expenditure

It may be noted that the governments at all the three levels, (the central, the state, and local level), contribute in financing of education. With the passage of time, a complex inter-governmental system of taxation and revenue for the financing of education has evolved. No doubt, the system and its complexities vary from country to country. Broadly speaking, the rationale for financing of education by the governments may be grouped into four categories:

- Manpower development
- Promotion of social equity
- Promotion of productivity and economic growth and nation building.
- Improving quality and efficiency of educational system.

Fig. 4 linkages of Education Finance in different sections



5.6.3 Benefits of Education in Distribution:

In the above section it is already mentioned that education increases people's productivity and creativity and promote entrepreneurship and technological advances. In addition, it plays a very crucial role in securing economic and social progress and improving income distribution. Apart from that education promote consumption benefit to the individuals by which education can help in distribution of recourses and income. As the welfare of a society depends on the welfare of its individual members, then society as a whole experiences welfare gain as a result of increased consumption benefits of individual's from more education and higher level of skills.

In economic theory to measure the marginal value of a product or service to a consumer, we have to consider how much he paid for it. An individual would not have purchased a product or service if it were not worth its price to him. Besides an individual would have bought more units of a product if he thought that the marginal utility, he is getting is more than the price he has paid for. Thus, relative price of various products reflects the marginal value of different products and the amount consumed of various products multiplied by their prices would indicate the consumption benefits derived by individual from education. However, an objective measure of

consumption benefits of education may be difficult and has yet to be finalised but, it should not lead any one to ignore the consumption benefits of education and its policy relevance. Therefore, consumption benefits of education maybe regarded as developmental benefit.

The private and social benefit of education may not always coincide, some time the social benefit may exceed the private benefit. This is the case with the education of an individual which not only benefits to individual privately but also socially to others. Because education makes people better neighbours and citizens and makes social and political life healthier at the same time the external benefit of education is its effect on technological change in the economy. Especially higher education stimulates research and thereby increases productivity which undoubtedly benefits the society. However, it is difficult to find the exact measurement of how education helps in income distribution in an economy because education helps indirectly to boost the economy as well as income distribution. Some recent studies revealed that the present education system has tended to increase inequalities in income distribution rather than reducing them. The adverse effect of education on income distribution has been explained through establishing positive correlation between level of education received by an individual and the level of his life term earning. There are some other reasons usually raised on how inequalities arise from education.

- Since level of earning depends on years of completed schooling. It follows that large income inequalities are reinforced due to the magnitude of poverty. Students from poor and middle-income brackets are represented disproportionately in secondary and university enrolments.
- The opportunity cost of primary education for children belonging to poor families are higher than students belonging to rich families. Children of poor families are needed to work on their family firms or in other family occupations. That is, cost of studying in school is sacrificed. On the other hand, benefits of education to poor students are lower compared to rich students.

- In agriculture and other firm sector, the productivity of landlords and rich educated farmers shows higher growth as they extensively use machinery and other modern equipment's which are due to benefit of education.



CHECK YOUR PROGRESS

Q 3: What is educational finance? (Answer the question by 50 words)

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.....

Q 4: Explain the principle of educational finance. (Answer the question by 50 words)

.....

.....

5.7 EFFECT OF EDUCATION

Speaking of the importance of human capital, Prof. F. Harbison writes, "human resources constitute the ultimate basis of production. Human beings are the active agent who accumulate capital, exploit natural recourses, build social economic and political organizations and carry forward national development. Clearly a country which is unable to develop the skill and knowledge of the people and to utilize them effectively in the national economy will be unable to develop anything else."

The overall effect of education can be summarised from following points

- Reduction of poverty
- Healthier life style or improving standard of living.
- Diversity benefit of education
- Connecting across the borders
- Socializing and improving the network of connectivity with each other.
- Sense of accomplishment
- Personal development of skill
- Improve the technology

- Improve productivity
- Improve critical thinking skill
- Identification of skill
- Greater sense of discipline
- Employability benefit of education
- Career advancement
- Economic growth
- Improve social environment
- Social integrity and promote good citizenship
- Reduction of crime and violence
- Reduction of ignorance and illiteracy

From the economic perspective, **the effect of education** can be best understood by endogenous growth theories. The endogenous growth theory is a new theory which explains the long run growth of an economy on the basis of endogenous factors as against the exogenous factors of neo-classical growth theory. The neo-classical growth theory assumes that there is diminishing return to capital in the long run. But the new growth theory relaxes the assumption and shows that with constant and increasing returns there can be convergence of per capita income across the world. The countries can reach the long run steady growth equilibrium at the natural rate.

The endogenous growth model assumes the positive externalities associated with human capital formation i.e., education, training, research and development that prevent marginal product of capital from falling and prevent out-pouring of literature and research and applied them to growth. The neo-classical theory underlines that the growth of output is determined by the rate of growth of labour force plus productivity of labour. This is based on diminishing marginal return of capital due to high capital output ratio and low productivity. The new growth theory on the other hand highlights the importance of increasing returns of capital. It lays stress on human capital investment as positive externalities are created with investment on human capital. The theory suggests an active role of public policies in promoting direct and indirect investments in human capital formation and

encouraging foreign private investment in knowledge intensive industries i.e., computer, software, telecommunication etc.

The endogenous growth theory was the result of pioneering work of Robert Lucas (1988), Paul M Romar (1994), Arrow (1962), V.W. Ruttan (1998) and other economists. Most of the endogenous growth theories can be expressed by simple equation.

$Y = AK$

A = any factor that affect technology, K = Physical and human capital, Y = output.

Arrow was the first economist to introduce the concept of learning by doing in 1962. His hypothesis was that the new capital goods incorporate all the knowledge based on accumulated experiences. The knowledge has is non-rival in character which spill over across all the firms in the economy. This seems in the fact that each firm operates under constant returns to scale tend the economy as a whole in operating under increasing returns to scale.

Robert Lucas (1988) developed an endogenous growth model based on investment on human capital. Lucas assumes that investment on education leads to production of human capital which is the crucial determinant in the growth process. He made a distinction between internal and external effect of human capital, where the individual worker by training became internally more productive and external effect which spill over and increase the productivity of other workers in the economy. It is therefore, investment on human capital more important rather than physical capital that has spill over effect to increase productivity.

Thus output of a firm (i) takes the form

$Y_i = A(K_i), (H_i), H^e$

Where A = Technical coefficient, Ki, Hi represents the inputs of physical and human capital used by the firm to produce Yi goods.

H = Average level of variable capital, parameter (e) represents the strength of external effect of human capital.

The model intended that knowledge and skill of human capital spread to other industries and sectors and each firm benefitted on average level.

In the model the technology is endogenously provided as a side effect of investment decisions by firms and the technology is treated as public goods from the point of view of its uses.

The Romer model of endogenous growth (1994) specialising the research sector for new production ideas. The theory invokes human capital along with the existing stock of knowledge to produce new idea and knowledge. According to Romer, new idea and knowledge are more important than natural resources. He cites the example of Japan which has few natural resources but it innovate new ideas and technology. The country imported machines from United States during Meiji era (1868 – 1982 an era of Japanese history when they were isolated by European powers) but now (it has) become a leading country of the world.

The model discards the assumption of diminishing marginal return of neoclassical theory and permitting increasing returns to scale in aggregate production. The theory assumes that investment on human capital generates external economics and productivity improvement offset the natural tendency of diminishing return. The theory seeks to explain the existence of increasing returns to scale and divergent long run growth pattern among the countries.

To explain the model, it takes into account the technology spill over the industrialisation process in the economy. It begins by assuming that growth process derives from the firm and industry level. Each industry individually produces with constant returns to scale. So, the model consistent with perfect competition; up to that points it matches the assumption of Solow model. But Romer departs from Solow assuming that economy wide capital stock (K) positively affects output at industry level so that there may be increasing returns to scale at the economy wide level.

His model can be explained in the terms of the following production function.

$dA = F(K_A, H_A, A)$

Where dA = Increasing technology, K_A = Amount of capital investment in new design and technology, H_A = A mount of human capital employed in

research and development, A = Existing technology and design. F = Production function for technology.

The above function shows that technology is endogenous when more human capital is employed in research and development then technology increases by a larger amount i.e., dA is greater. Further existing technology. A also leads to production of new technology. Since it is assumed that technology is a non -rival input and partially excludable. There are positive spill over effects of technology which can be used by other firms for the overall development for the economy.



5.8 LET US SUM UP

- The main responsibility of education from economic development perspective is to make an individual technically fit for work who can participate in development and diffusion of innovations in the economy.
- Education is an important instrument to fight against poverty and help individual to access better job that raise their earnings and thus contributes to the improvement of their lives.
- Investment in education helps to broaden access to education and hence facilitate the access to skills enabling people to get better job. Research literature provides evidence of the value of investing in education to develop human capital.
- Education finance is a term used to describe the financial and in-kind resources available for education. The concept of education finance also addresses questions about how resources are allocated, used, and accounted for to achieve sustainable, quality education for all children and youth.
- Higher wages usually will encourage to supply more labour because work is more attractive compared to leisure. Therefore, the supply curve tends to upward sloping. However, the workers are not just interested to earning money but they interested in leisure. Therefore,

there is a choice between working more with higher wage or to working less with more leisure.

- Education increases people's productivity and creativity and promote entrepreneurship and technological advances. In addition, it plays a very crucial role in securing economic and social progress and improving income distribution.
- Investment on human capital is more important rather than physical capital that has spill over effect to increase productivity.



5.9. FURTHER READING

1) Lekhi R K (1995): *The Economics of Development and Planning*, Kalyani Publishers, New Delhi.

2) Jhingam M L (2016): *Economics of Development and Planning*, Vrinda Publications P LT Delhi.



5.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Attainment of particular credential is one of the important occupational determinants of potential labour market. A particular credential is enhancing an individual more educational return than increased in general level of knowledge. In the labour market a person's academic credentials signify specifically eligible to a particular job or occupation i.e., vocational credentials may specifically signify that an individual is formally qualified for a particular job.

Ans to Q No 2: Higher wages usually will encourage to supply more labour because work is more attractive compared to leisure. Therefore, the supply curve tends to upward sloping. However, the workers are not just interested to earning money but they interested in leisure.

Therefore, there is a choice between working more with higher wage or to working less with more leisure. At wage rate the income effect outweighs the substitution effect and people work fewer hours because they can get their targeted income from a lower number of hours.

Ans to Q No 3: Education finance is a term used to describe the financial and in-kind resources available for education. The concept of education finance also addresses questions about how resources are allocated, used, and accounted for to achieve sustainable, quality education for all children and youth.

Ans to Q No 4: To implement the right to education effectively, states should ensure that a sufficient proportion of the national budget is allocated to education financing and that the money is used effectively and equitably to guarantee education for all, as well as redress inequalities. The principles of educational finance are performing efficiency, promoting equality, flexibility, National unity and ethics.



5.11 MODEL QUESTIONS

Q 1: Briefly explains about the role of education in economic development.

Q 2: Explain the mechanism by which labour market is affected by Education.

Q 3: Explain briefly the relationship between educational finance and income distribution.

Q 4: How education affect labour market? Give your justification why endogenous growth is more relevant in recent years.

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UNIT 6: EDUCATION AND LABOUR MARKET - II

UNIT STRUCTURE

6.1 Learning Objectives

6.2 A Brief Introduction of Social Sector

6.3 Economic Development and Social Development

6.4 Concept of Ability and Family Background on Earnings

6.5 Need to Measure Family Background

6.6 Inequality in Earnings and Education in India

6.7 Education and Labour Market

6.8 Graduates in the Labour Market

6.9 Education and Labour market in Indian Scenario

6.10 Concepts of Poverty

6.11 Poverty Line

6.12 Relative vs. Absolute Poverty

6.13 International Indices to Measure Poverty

6.14 Labour Force and Unemployment

6.15 Income Distribution

6.16 Lorenz Curve

6.16.1 Reasons for Income Inequality

6.16.2 Consequences of Income Inequality

6.17 Let Us Sum Up

6.18 Further Reading

6.19 Answers to Check Your Progress

6.20 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- know the concepts of social development.
- economic development and social development
- concept of ability and family background on earnings

- education and labour market
- concepts of poverty and poverty line
- what is relative and absolute poverty
- concept of Lorenz curve
- income distribution and income inequality

6.2 A BRIEF INTRODUCTION OF SOCIAL SECTOR

The term social sector refers to that part of social and economic activity carried out for the purpose of benefiting society and which is funded, in part or whole, through charitable gifts. There are many approaches for social sector. One of such approach views the social sector from the human resource development point of view. Human resource development is based on three essential indicators- education, health and GDP per capita income. Investments in these sectors are emphasized as a means to higher productivity of the labor force and it is justified on the basis of either financial rate of return in case of education. UNDP has defined human development as “the process of enlarging people’s choices”. The term encompasses empowerment, co-operation, opportunities and equity in basic capabilities, security and sustainability. It measures such as education, health and nutrition; these are emphasized from their intrinsic value and not for their role in enhancing their basic capabilities of people.

The term social sectors include, among other things such as

- Education, sports, Art and culture
- Health and family welfare
- Water supply, sanitation, housing and urban development
- Social welfare and nutrition
- Welfare of SC/ST
- Labour welfare

In this sense, the provision of minimum level of income, education, health and nutrition may be considered as basic rights of individual in a society. Thus, human resource development or human development definitely affect social sectors.

6.3 ECONOMIC DEVELOPMENT AND SOCIAL DEVELOPMENT

In general, economic development is a wider term than economic growth. Economic growth means to achieve and sustain human development. Economic development evolved some parameters like literacy, population growth, malnutrition, health facility, housing problem, law and order etc. It includes both quantitative and qualitative indicators. Economic development is the process of securing a higher level of productivity in all the sectors. On the other hand, social development refers to the overall development or progression of the society. It signifies the development of people, quality of life and social welfare etc. It provides a higher order of living in a dynamic sense.

6.4 CONCEPT OF ABILITY AND FAMILY BACKGROUND ON EARNINGS:

In every society, the family plays a crucial role in shaping the educational experiences and achievement of children and the transmission of status from one generation to the next. Throughout the world, children of high-status parents are more likely to get ahead in school. Three interrelated processes—the transmission of financial capital, the transmission of cultural resources, and the transmission of social capital from parents to children—are most often called on to explain this phenomenon. However, recently many studies have begun to incorporate all three processes into empirical investigations of family background in determining children's educational status.

Family background refers to the kind of family that one comes from and the kind of education one has had and also signifies various things such as social, racial origins, financial status and work experience. Greater financial ability enables an individual to pay for higher- quality educational opportunities for their children and better educational opportunities can lead to better academic performances.

6.5 NEED TO MEASURE FAMILY BACKGROUND

There are many reasons for the measurement of family background. Some of the important reasons are mentioned below:

- Schools influence children's learning and achievement which examine net school effect of family background. As Coleman stated more than twenty years ago: "In the attempt to discover effects of school factors on achievement, perhaps the principal villain is the fact that student populations in different schools differ at the outset, and because of this difference, it is not possible merely to judge the quality of a school by the achievements of the students leaving it. It is necessary to control in some way for the variations in student input with which the teachers and staff of the school are confronted."
- There is a necessity to improve our knowledge of the ways that the family, as an institution, affects children's ability and motivation to learn as well as academic achievement. A better understanding of how family background and home environment affect student learning can help societies formulate policies that may serve to intervene in detrimental family processes or enhance beneficial ones. We are constantly looking for ways to alter educational institutions to improve children's lives. The same thinking should be applied to the family institution, especially in this era of rapidly changing family life or structure.
- The importance of controlling for family influences in comparative research on educational achievement (sentence looks incomplete). If, in addition to mean levels of achievement, we want to compare the distribution of educational achievement across societies, we need to measure the social conditions across which achievement (or any other educational outcome) is distributed. Family background is one of the most important social conditions to consider when comparing populations cross-nationally.

6.6 INEQUALITY IN EARNINGS AND EDUCATION IN INDIA

Estimates on the rates of return to education would be a useful indicator of the reward for education in the labour market and also guide public and private investment in education. The literature on returns to education is one of the most extensive in labour economics. The evidence on wage returns to education in both developed and developing countries continues to grow. There are two methods of estimating the rates of return to education, full accounting method and Mincer wage equations. However, only Mincer wage equation is given below:

This method involves fitting a log-wages function using years of schooling, years of labour market experience and its square as independent variables. The mathematical notation is given by, $\ln W_i = a + bS_i + cE_i + dE^2_i + u_{i,}$ where, S_i is years of schooling and E_i is experience. E^2_i is experience squared, and u_i is a random disturbance term. In this function, the b coefficient on years of schooling can be interpreted as the average rate of return to an additional year of schooling, regardless of the educational level.

6.7 EDUCATION AND LABOUR MARKET

Education and training, both are the core elements to increase a country's productivity as well as to improve people's livelihood and also accessing a good quality employment. The educational attainment and skill base of the workforce have a great impact at both the individual and the national level. Basically, higher level of education is connected with enhancing the opportunities for individuals to enter the labour market in a better position and associated with higher salaries. On the basis of labour market, education provides both productive capacities to individuals. Immigration, the age of population and education levels are the main important factors affecting the labour market.

6.8 GRADUATES IN THE LABOUR MARKET

In recent years, there have seen a growing literature on whether or not workers are well qualified to their jobs, dominantly designed to address the question as to whether or not the skills of university graduates are under-utilized by their employers. There are some factors behind these.

- The global factors that are affecting the demand for graduates :

  To some extent economic globalization led to the creation of global labour markets for university graduates. Through the skill policies of Transnational Corporations (TNCs), graduate labour can be sourced from any part of the world, which means that graduates in Britain or the US, for example, are in competition with those in China and India.

- Technology in the fourth industrial revolution :

  If the globalization of labour markets has been a factor in the intensification of positional competition, then at the heart of the fourth industrial revolution is a range of new technologies that have brought together the digital, physical and biological spheres. It is the way in which these have been linked at such speed that has distinguished this revolution from earlier ones. In the light of these technological break-throughs, we can identify stages in their application to the labour market and a series of responses that have been made by orthodox economics.

6.9 EDUCATION AND LABOUR MARKET IN INDIAN SCENARIO

Increased global competition has resulted in rapid changes in the nature of the labour market in India and many other countries. In developed economies, governments have promoted education as a means of securing a comparative advantage in the production of goods and services whose production is knowledge-intensive. Elsewhere, experience has varied, with some developing countries likewise heading toward an

industry mix that places a premium on human capital. In some measure this is due to the growth in demand for education – an income elastic product – as incomes rise. It is particularly instructive to examine these issues in the context of the BRIC countries (Brazil, Russia, India and China); since, these are developing rapidly and offer some contrasting stories. In India, educational provision, particularly at tertiary level, has expanded rapidly over the last decade and a half. The enhanced skills with which many young people now enter the labour force are likely to impact upon their trajectory through the labour market. In particular, one might expect an increasing proportion of workers to find employment in higher status occupations.

Indian economy has undergone significant structural changes during the last more than six decades since independence in 1947. Delineating the Indian growth story, the first change in the economy happened in the form of a shift from the colonial era of economic stagnation to the period of 'Hindu rate of growth'. There was a rapid industrialization phase till mid-1960s followed by a decade of stagnation till late 1970s. After 1980s, the Indian economy tended to shed the tag of 'Hindu rate of growth' and registered faster growth at 5.5–6 per cent per annum. A significant shift in the pattern of economic growth happened with liberalization starting in India after 1991, out of the compulsions of dismal foreign exchange reserves, deteriorating balance of payments, continuously large fiscal deficit and ever-increasing external debt. The Indian economy shifted to a higher growth trajectory of more than 8 per cent per annum during 2003–2004 to 2010–2011 (except 2007–2008), after showing some slowdown in the recent years. Relatively faster growth during the last decade can be attributed largely to the expansion of service sector in India, termed by many as 'services revolution'. Such transition has also been termed as premature at relatively low levels of per capita income and in the absence of sufficient industrial development in the country. Increased share of the service sector in the GDP has failed to bring a corresponding increase in the share of employment of such sector.

6.10 CONCEPTS OF POVERTY

Poverty can be defined as the state where one lacks a usual or socially acceptable amount of money or material possessions. Poverty is said to exist when people lack the means to satisfy their basic needs. In this regard, the identification of poor people first requires a determination of what constitutes basic needs. These may be defined as narrowly as "those necessary for survival" or as broadly as "those reflecting the prevailing standard of living in the community. Officially, poverty counts began for the first time in India based on the approach of the Task Force headed by Dr. Y. K. Alagh (1979). This Task Force was constituted in 1977 and it submitted its report in 1979.

6.11 POVERTY LINE

Poverty line is defined as the per capita consumption expenditure level to meet average per capita daily calorie requirement of 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas. The average calorie requirements were estimated as a population–weighted average of the age-gender-activity specific calorie allowances recommended by the Nutrition Expert Group (1968) by reference to the 1971 population Census. Based on 1973-74 prices, the Task Force set the rural and urban poverty lines at Rs. 49.09 and Rs. 56.64 per capita per month at 1973-74 prices. These lines were based on the assumption of different poverty line baskets (PLBs) for rural and urban consumption. Because of many reasons various concepts on poverty came as well as due to changing times and aspirations of people of India, Rangarajan Committee was set up in 2012. This Committee submitted its report in June 2014. It reverted to the practice of having separate all-India rural and urban poverty line baskets and deriving state-level rural and urban estimates from these. It recommended separate consumption baskets for rural and urban areas which include food items that ensure recommended calorie, protein & fat intake and non-food items like clothing, education, health, housing and transport. This committee raised the daily per capita

expenditure to Rs 47 for urban and Rs 32 for rural from Rs 32 and Rs 26 respectively at 2011-12 prices. Monthly per capita consumption expenditure of Rs. 972 in rural areas and Rs. 1407 in urban areas is recommended as the poverty line at the all-India level.

6.12 RELATIVE VS. ABSOLUTE POVERTY

Absolute poverty is when household income is below a certain level, which makes it impossible for the person or family to meet basic needs of life including food, shelter, safe drinking water, education, healthcare, etc. In this state of poverty, even if the country is growing economically, it has no effect on people living below the poverty line. Absolute poverty compares households based on a set income level and this level varies from country to country depending on its overall economic conditions.

Relative poverty is when households receive 50% less than average household incomes, so they do have some money but still not enough money to afford anything above the basics. This type of poverty is, on the other hand, changeable depending on the economic growth of the country. Some important points regarding relative poverty are as follows:

- Relative poverty is sometimes described as “relative deprivation” because the people falling under this category are not living in total poverty, but they are not enjoying the same standard of life as everyone else in the country. It can be TV, internet, clean clothes, a safe home (a healthy environment, free from abuse or neglect), or even education.
- Relative poverty can also be permanent, meaning that certain families have absolutely no chance of enjoying the same standards of living as other people in the same society currently have access to. When the relative approach is used to measure poverty, there is another concept that needs to be explored – persistent poverty. This is when households receive 50 or 60% less income than average incomes every 2 out of 3 years. Since long-term poverty has more impactful consequences on economic and social conditions, persistent poverty is an important concept to bear in mind.

6.13 INTERNATIONAL INDICES TO MEASURE POVERTY

In recent years, international research agencies and institutions have, based on evidence, suggested a transformational change in the rate of poverty decline in India. Both in terms of income and decline of chronic poverty as also in terms of multi-dimensional poverty, the performance of India over the last two decades has attracted global attention. World Bank defines poverty as deprivation in well-being comprising many dimensions. It includes low incomes and the inability to acquire the basic goods and services necessary for survival with dignity. Out of 17 Sustainable Development Goals (SDGs), to which India is also committed, the first two are "ending poverty in all forms and hunger". SDG1 aims, by 2030 to reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions. India has not only committed to achieve the Sustainable Development Goals (SDGs) it was a leading proponent of the first goal that addresses the issue of poverty. This goal commits the signatories to eliminating poverty according to the common international poverty line of $1.25 per person per day (at 2005 Purchasing Power Parity or PPP) and cutting it in half "according to national definitions" (goals 1.1 and 1.2, respectively). The UN's 2030 Agenda for Sustainable Development reaffirmed the importance of multi-dimensional approaches to poverty eradication that go beyond economic deprivation. Various international efforts to measure poverty along with implications for India are briefly discussed below:

- **Global Multi Dimensional Poverty Index (MPI)**: Launched in 2010 by the United Nations Development Program (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI), the MPI is a measure of multidimensional poverty covering more than 100 developing countries. It goes beyond income as the sole indicator for poverty and tracks deprivation across three dimensions and 10 indicators as indicted below: i). Education: Years of schooling and child enrollment ii). Health: Child mortality and iii). Standard of living:

Electricity, flooring, drinking water, sanitation, cooking fuel and assets.

- **World Bank Poverty Line:** The World Bank defines extreme poverty as living on less than $1.90 a day, measured in 2011 purchasing power parity prices. However, measuring poverty through headcount ratios fails to capture the intensity of poverty – individuals with consumption levels marginally below the poverty line are counted as being poor just as individuals with consumption levels much further below the poverty line. World Bank has developed the 'poverty gap index' as an alternative way of measuring poverty that measures the intensity of poverty, by calculating the amount of money required by a poor household in order to reach the poverty line. In other words, it calculates the income or consumption shortfall from the poverty line.
- World Poverty Clock (WPC) is a systematic analytical framework to measure progress towards SDGs by World Data Lab. The World Poverty Clock (WPC) provides real-time poverty estimates until 2030 for (almost) every country in the world. The World Poverty Clock (WPC) is a global model that tracks poverty in real time. It uses publicly available data on income distribution, production and consumption and bridges the common decadal gaps between large-scale surveys and censuses.

6.14 LABOUR FORCE AND UNEMPLOYMENT

The population of any country consists of two components

- Labour Force
- Non-Labour Force.

Labour force means all persons who are working (i.e., being engaged in the economic activity) as well as those who are not working but are seeking or available for work at the current wage rate. It means the labour force consists of both employed and unemployed people. The component of population which is not a part of the labour force is Non-Labour Force. It includes all those who are not working and are neither seeking work nor available for work.

Unemployment can be defined as a state of worklessness for a person who is fit and willing to work at the current wage rate. It is a condition of involuntary and not voluntary idleness. Simply stated, an unemployed person is the one who is an active member of the labour force and is seeking work, but is unable to find the same. In case of voluntary unemployment, a person is out of job on his own accord or choice, doesn't work on the prevalent or prescribed wages. Either he wants higher wages or doesn't want to work at all. There are various types of unemployment, which are given below:

- **Cyclical Unemployment**

  Cyclical or demand deficient unemployment occurs when the economy is in need of low workforce. When there is an economy-wide decline in aggregate demand for goods and services, employment declines and unemployment correspondingly increase. Cyclical unemployment mainly occurs during recession or depression. This form of unemployment is most commonly known as cyclical unemployment since unemployment moves with the trade cycle. For instance, during the recent global slowdown in late 2008, many workers around the globe lost their jobs.

- **Seasonal Unemployment**

  This type of unemployment occurs in a particular time of the year or season and thus is known as seasonal unemployment. Seasonal unemployment is most common in industries like agriculture, tourism, hotel, catering etc.

- **Structural Unemployment**

  Structural unemployment arises when the qualification of a person is not sufficient to meet his job responsibilities. It arises due to long term change in the pattern of demand that changes the basic structure of the economy. The person is not able to learn new technologies used in the new expanding economic sectors and they thus may be rendered permanently unemployed. For instance, when computers were introduced, many workers were dislodged because of

a mismatch between the existing skills of the workers and the requirement of the job. Although jobs were available, there was a demand for a new kind of skill and qualification. So, persons with old skills did not get employment in the changed economic regime, and remain unemployed.

- **Frictional Unemployment**

  Frictional unemployment occurs when a person is out of one job and is searching for another for different reasons such as seeking a better job, being fired from a current job, or having voluntarily quit a current job. It generally requires some time before a person can get the next job. During this time, he is frictionally unemployed.

- **Natural rate of unemployment**

  The sum total of frictional and structural unemployment is referred as the natural rate of unemployment.

- **Disguised Unemployment**

  The unemployment which is not visible is said to be disguised unemployment. It occurs when a person doesn't contribute anything to the output even when visibly working. This happens amongst family labourers especially in agriculture who are engaged on land but are not contributing to the given level of output. Thus, their marginal productivity is zero.

- **Underemployment**

  When a person is engaged in the economic activity but that fail to provide him fully in accordance to his qualification and efforts. Thus, it is a situation in which a person is employed but not in the desired capacity whether in terms of compensation, hours, or level of skill and experience. While not technically unemployed, the underemployed often compete for available jobs.

Government Measures to Check Unemployment and Poverty in India 'Growth with Social Justice' has been the basic objective of the development planning in India. The

prevalence of unemployment and poverty are viewed as the most serious concern for development of the country. It was believed that the economic growth would result in increased employment opportunities of the growing labour force. This, however, did not happen, as the number of unemployed is increasing continuously. The Government, therefore, laid increased emphasis on taking up schemes for providing additional employment opportunities and various special schemes of employment generation under both self-employment and wage-employment programs. Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is a recent skill development initiative scheme of the Government of India for recognition and standardization of skills of labour.

- National Rural Employment Guarantee Act (NREGA) The NREGA bill was notified in 2005 and came into force in 2006. It was later modified as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2008. This scheme guarantees 150 days of paid work to people in the rural areas. The scheme has proved to be a major boost in Indian rural population's income.
- Integrated Rural Development Program (IRDP): IRDP is one of the most ambitious programs to alleviate rural poverty by providing income-generated assets to the poorest of the poor. This program was first introduced in 1978-79 in some selected areas. However, it covered all the areas by November 1980.
- Prime Minister Rozgar Yojana: This scheme was announced by the Prime Minister on 15th August, 1993 to provide self-employed opportunities to one million educated unemployed youth in the country. The Scheme has been formally launched on 2nd October, 1993.

6.15 INCOME DISTRIBUTION

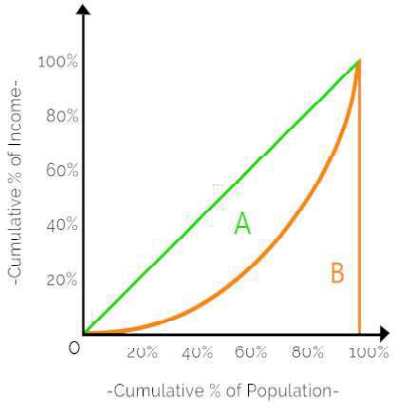
Poverty and income distribution have risen to the top of the list of social issues in many countries. In the last three decades, the United States and United Kingdom have seen large increases in both poverty and economic inequality. But they are not unique; many developed countries have experienced at least modest increases in the inequality of income. As economies and labor markets become more international and these countries wrestle with the social and economic consequences of an aging population, increased market work by women, and marital dissolution, public interest has come to focus on how successfully different social polities cope with inequality, poverty, and joblessness.

Income inequality refers to the distribution of income among households or persons. All analysts of income inequality need to answer the questions of distribution of resources. Most analysts of inequality use a measure of disposable money income. For most households, the primary income source is market income, which includes earned income from wages, salaries, and self-employment, and other cash income from private sources such as property, pensions, alimony, or child support. To reach disposable income, governments add public transfer payments (e.g., retirement, family allowances, unemployment compensation, and welfare benefits) and deduct income tax and social security contributions from market income. Most analysts measure income on an annual basis. This may be too long an accounting period for families that are severely credit-constrained and too short for those that can smooth consumption over several years—but almost all available surveys report income for the calendar year. The most common unit of analysis is the household, defined as all persons sharing the same housing unit, regardless of any familial relationship. One therefore estimates individual disposable income by aggregating the income of all household members and using an equivalence scale to arrive at each individual person's equivalent income. Equal sharing of incomes within the household is therefore assumed. There exist many different summary measures of inequality, most of them based on the Lorenz Curve, or other variants.

6.16 LORENZ CURVE

A Lorenz curve is generally represented by a straight diagonal line, which represents perfect equality in income or wealth distribution; the Lorenz curve lies beneath it, showing estimated distribution. The area that is between the straight line and the curved line is the Gini coefficient. The Gini Coefficient itself is expressed as a representation of the scalar measurement of inequality. In the Lorenz Curve, the Gini Coefficient is expressed as the ratio of the area under the straight line.

The Lorenz curve is used to represent economic inequality as well as unequal wealth distribution. The farther away the curved line is way from the straight diagonal line, the higher the level of inequality.



The curve (B) is a graph showing the proportion of overall income or wealth assumed by the bottom x% of the people, although this is not rigorously true for a finite population. It is often used to represent income distribution, where it shows for the bottom x% of households, what percentage, represented by a straight line – A, (y %) of the total income they have.

Poverty trends in India in the nineties have been a matter of intense controversy. The debate has often generated more heat than light, and confusion still remains about the extent to which poverty has declined during the period. In the absence of conclusive evidence, widely divergent claims have flourished. Some have argued that the nineties have been a period of unprecedented improvement in living standards. Others have claimed that it has been a time of widespread impoverishment.

6.16.1 Reasons for Income Inequality

There are many reasons for the rise in income equality in India; some of them are as follows:

- The rise of a rentier class that seeks to maximise its leverage in fixed assets such as lands and property to extract as much as income as possible
- With a 2019 study by the Reserve Bank of India confirming that housing affordability has significantly deteriorated over the last four years, it is unsurprising how millennials now choose to stay in rent rather than bear the increasingly unaffordable burden of high EMIs.
- Unemployment is also a major reason for the low productivity of labour which can push many into poverty. It is a fact that inequality, poverty and unemployment are related to each other. The lack of sufficient employment not being created in time is the reason why there is an income gap today between classes.
- During inflation, less profit is made and wage earners are the ones who bear the losses. While profits are on the rise, the wages have remained more or less the same. Also, while money income rises, real income falls, leading to a decrease in the overall standard of living.
- High tax rates are re-sponsible for inequality in the distribution of in-come and wealth. This is due to undue concentra-tion of incomes in a few hands caused by large-scale tax evasion.

6.16.2 Consequences of Income Inequality

- This goes against constitutional ideas of equality of status and opportunity and the equitable distribution of wealth.
- Inequality in income may cause regional imbalances which in turn may cause a serious threat to cooperative federalism.

- Introducing the concept of inclusive growth and by taking promotional measures such as land reform, social security pensions, scholarships and skill training for vulnerable communities, income inequality may be reduced.
- Besides, by introducing inheritance tax for the super-rich people in the society income inequality may be reduced.
- Further, private sector investment is also an important factor and it has to be encouraged by improving the business environment, discouraging tax-terrorism, and promoting pro-enterprise policies to reduce the inequality in income.



CHECK YOUR PROGRESS

Q.1: What is social sector?

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Q 2: Define economic growth.

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Q 3: What is family background?

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Q 4: What leads to the investment in education?

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Q 5: What are the member countries of BRIC countries?

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Q 6: Define poverty line.

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Q 7: Who developed the concept of 'poverty gap index' as an alternative way of measuring poverty?

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Q 8: Define unemployment.

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Q 9: What does income inequality refer?

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Q 10: Define Lorenz curve and who developed it?

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Q 11 : What is Gini Coefficient?

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6.17 LET US SUM UP

- The term social sector refers to the education, health and nutrition. Social sectors mainly identified the two basic approaches, one views social sector from a Human resource development point of view and other takes the Human development approach.

- In general, economic development is a wider term than economic growth. But from the change, economic growth to human development, in this case both are not automatic. Economic development evolved some parameters like literacy, population growth, malnutrition, health facility, housing problem, law and order etc.
- Family background refers to the kind of family that you come from and the kind of education you have had and also signifies the various things such as social, racial origins, financial status and work experience.
- Estimates on the rates of return to education would be a useful indicator of the reward for education in the labour market and also guide public and private investment in education.
- Increased global competition has resulted in rapid changes in the nature of the labour market in India also like many other countries. In developed economies, governments have promoted education as a means of securing a comparative advantage in the production of goods and services whose production is knowledge-intensive.
- Poverty can be defined as the state of one who lacks a usual or socially acceptable amount of money or material possessions. Poverty is said to exist when people lack the means to satisfy their basic needs.
- Poverty line is defined as the per capita consumption expenditure level to meet average per capita daily calorie requirement of 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas.
- Absolute poverty is when household income is below a certain level, which makes it impossible for the person or family to meet basic needs of life including food, shelter, safe drinking water, education, healthcare, etc.
- Relative poverty is when households receive 50% less than average household incomes, so they do have some money but still not enough money to afford anything above the basics.
- Unemployment can be defined as a state of workless ness for a person who is fit and willing to work at the current wage rate. It is a

condition of involuntary and not voluntary idleness. Simply stated an unemployed person is the one who is an active member of the labour force and is seeking work, but is unable to find the same. In case of voluntary unemployment a person is out of job on his own accord or choice, doesn't work on the prevalent or prescribed wages.

- Income inequality refers to the distribution of income among households or persons.
- A Lorenz curve is generally represented by a straight diagonal line, which represents perfect equality in income or wealth distribution; the Lorenz curve lies beneath it, showing estimated distribution.



6.18 FURTHER READING

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6.19 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No. 1: Social sector refers to the education, health and nutrition. Social sectors mainly identified the two basic approaches, one views social sector from a Human resource development point of view and other takes the human development approach.

Ans to Q No. 2: Economic growth is defined as the increase in per capita income of an economy.

Ans to Q No. 3: Family background can be defined as the kind of family that one come from and the kind of education one has had and also signifies the various things such as social, racial origins, financial status and work experience.

Ans to Q No. 4: Estimates on the rates of return to education would be a useful indicator of the reward for education in the labour market and also guide public and private investment in education.

Ans to Q No. 5: Brazil, Russia, India and China

Ans to Q No. 6: Poverty line is defined as the per capita consumption expenditure level to meet average per capita daily calorie requirement of 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas.

Ans to Q No. 7: World Bank.

Ans to Q No. 8: Unemployment can be defined as a state of workless ness for a person who is fit and willing to work at the current wage rate. It is a condition of involuntary and not voluntary idleness.

Ans to Q No. 9: Income inequality refers to the distribution of income among households or persons.

Ans to Q No. 10: A Lorenz curve is generally represented by a straight diagonal line, which represents perfect equality in income or wealth distribution. It was developed by Max O. Lorenz in 1905.

Ans to Q No. 11: The Gini index, or Gini coefficient, is a measure of the distribution of income across a population developed by the Italian statistician Corrado Gini in 1912. The coefficient ranges from 0 -1, with 0 representing perfect equality and 1 representing perfect inequality



6.20 MODEL QUESTIONS

A) Short Questions. (Answer within 150 words)

Q.1: What are the main components of social sector?

Q.1: Distinguish between economic development and social development.

Q.1: Why is it important to measure family background?

Q.1: Distinguish between absolute poverty and relative poverty.

Q.1: Write any three consequences of income inequality.

Q.1: Distinguish between labour force and non-labour force.

B) Long Questions. (Answer within 300-500 words)

Q.1: What are the international indices to measure poverty? Explain briefly.

Q.2: Critically examine the relationship between education and labour market in India.

Q.3: Explain the relationship between inequality in earnings and education in Indian context.

Q.4: Explain the concept of ability and family background on earnings in your own words.

Q.5: Explain the different types of unemployment.

Q.6: Examine the government initiative to check poverty and unemployment in India.

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UNIT 7: EDUCATIONAL PLANNING AND DEVELOPMENT – II

UNIT STRUCTURE

7.1. Learning Objectives

7.2. Introduction

7.3. Concept of Cost-benefit Analysis

- 7.3.1 Cost-benefit Analysis of Education
- 7.3.2. Advantages of Cost-benefit Analysis of Education
- 7.3.2. Disadvantages of Cost-benefit Analysis of Education

7.4. Production Function Models

7.5. Growth Accounting Equations of Schultz and Denison

7.6. Let us Sum up

7.7. Further Reading

7.8. Answers to Check Your Progress

7.9. Model Questions

7.1. LEARNING OBJECTIVES

After going through the following units, you will be able to-

- interpret the concept, purposes and significance of cost-benefit analysis of education
- explain the production function models of Education
- discuss the growth accounting equations of Schultz and Denison

7.2. INTRODUCTION

In the earlier units, you have come across different aspects of economics of education. We have discussed education as investment as well as consumption. You have come across various terms like cost as well as benefits of education. There are direct and indirect benefits of educational spending. Direct benefits include higher income, better status and refinement, which usually go to individuals. To access the economic profitability of any investment, there is a technique named as cost-benefit

analysis. In this unit, we shall discuss on the concept, purposes and significance of this cost–benefit analysis in education. Moreover, we shall deal with one important production functional model on education as well as growth equation developed by Schultz and Denison.

7.3. CONCEPT OF COST-BENEFIT ANALYSIS

As a student of economics, you must be familiar with the term "Cost-benefit Analysis". The term implies a systematic analysis arranging of the magnitude of the cost and benefit of a form of investment in order to access its economic profitability. All forms of investment involve a sacrifice of present consumption in order to secure future benefits in the form of higher level of output or income. Cost benefit analysis provides future benefits in the light of the cost that must be included in the present. The purpose of the analysis is to provide a measure of expected real investment as a guide to rational allocation of resources. This is actually done to determine how well or how poorly a plan action will turn out. Cost–benefit analysis relies on the addition of positive factors and subtraction of negative one to determine a net result. This is a technique that has been used for the purpose of choosing a project from among a number of projects on the basis of a consideration of their cost-benefit relationship. In applying this technique, one has to be careful about both the concepts of costs and benefits as well as their measurement. Benefits and cost are often expressed in monetary term and are adjusted for the time value of the money so that the flow of benefits and flow of project cost overtime are expressed on a common basis in terms of their present value closely related but slightly different. Thus, cost-benefit analysis is an economic tool designed to provide an economic appraisal of an investment possibility. A general definition of cost-benefit analysis by **Prest and Turvey** (1965) states that it is: "A practical way of assessing the desirability of projects, where it is important to take long view (in the sense of looking at repercussions in the further, as well as in the nearer, future) and a wide view (in the sense of allowing for side-effects of many kinds on many persons, industries, regions, etc.). i.e., it implies the enumeration and evaluation of all the relevant cost and benefits."

To provide a comprehensive definition of cost-benefit analysis, we can put the widely accepted view as-

Cost benefit analysis finds, quantifies and adds all the positive factors. These are the benefits. It then identifies, quantifies and subtracts all the negatives, the costs. The difference between the two indicates whether the planned action is advisable. The real trick to doing a cost benefit analysis well is making sure one include all the costs and all the benefits and properly quantify them.



CHECK YOUR PROGRESS

Q 1: What is cost-benefit analysis?

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Q 2: What is the main purpose of cost-benefit analysis?

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7.3.1. Cost-Benefit Analysis of Education

Cost benefit analysis in education provides a measure of the profitability of education as an investment for society, or for the individual student or his/her family. It will act as a general guide for resource allocation and enable the comparison of the profitability of different types of education. One has to be clear about the social and private benefits of education, and its social and private costs. Essentially cost-benefits analysis relates the educational cost with the benefits measured in monetary terms. Application of cost-benefit analysis to education focuses strongly on economic benefit of education. Consequently, some educationists have argued that cost-benefit analysis is inapplicable to education due to the multiplicity of educational objectives and importance of non-economic benefits. But, cost-

benefit analysis has the same meaning when applied to education as to other areas of human endeavour. It is an effort to discover ways whereby desired objectives (output in terms of quantity and quality) may be obtained with a minimum application of resources (Cost on inputs).

In the words of **Maureen Woodhall**, cost benefit analysis implies," a systematic comparison of the magnitude of the costs and benefits of some form of investment (in case of education it is investment in human capital)".

7.3.2. Advantages of Cost-benefit Analysis in Education

At present, there has been great significance of cost benefit analysis in the education sector especially in the era of globalisation, liberalisation and privatisation. The education sector is becoming a trade as such cost-benefit analysis in education has been emphasised by the educational planners in resource allocation and investment in different sectors of education. The use of cost-benefit analysis may be assumed from the following points-

- Educational planners in developing countries are constantly facing the problems of allocation of resources to education and between different types of education in order to maximise society's goals. Economic growth is only one of those goals; but it is one to which high priority is attached so that any technique which promises to show which pattern of resource allocation will yield the greatest return is likely to be welcomed.
- Cost–benefit analysis may point to the need for change in resource allocation in favour of those types of education offering the highest rate of return.
- As cost-benefit analysis is a form of marginal analysis, it can never show what will be the effect of a very large scale change in the pattern of allocation or specified the precise magnitude of the change but it can provide "director indicator".

- Cost-benefit analysis may suggest ways of increasing the profitability of education either by increasing its benefit or lowering the cost. Measures for improving the use of manpower will raise the benefit associated with education and measures to reduce wastage or exploit economic scale will lower cost. In either case, the rate of return of education will increase.
- Estimate of private rate of return can be useful in explaining patterns of private demand for education both in terms of demand for different types of education or fields of study and in terms of the effects of different pattern of fine arts.
- Cost-benefit analysis can be useful in guiding investment decision of funding agencies or donors by showing which educational projects are likely to be profitable. Estimate rate of return are only approximate and shouldn't be used alone; but if combined with the other forms of economic analysis, cost-benefit analysis can provide useful tools in educational project appraising.
- Finally, the most important aspect of cost-benefit analysis is that it provides a conceptual framework for the examination of the cost of education in relation to the relative earnings of educational manpower. Both these elements have been neglected in some educational planning exercise in the past when these were based solely on forecast of manpower requirement or social demand.

Cost-benefit analysis is likely to be accepted more rapidly by educational planner where more progress is made towards the quantification of the direct benefit of education.



CHECK YOUR PROGRESS

Q 3: State the definition given by Maureen Woodhall on cost benefit analysis on education.

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Q 4: Why is cost-benefit analysis important in education?

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7.3.3 Disadvantages of Cost-benefit Analysis in Education

Economists and educationists have raised a number of theoretical and practical objections of using cost-benefit analysis in the field of education particularly in developing countries. The objections may be briefly summarised as below-

- The first objection against cost-benefit analysis of education is that it is very difficult to access the economic benefits of education directly through earnings as it depends on many other factors like- natural ability, motivation, social background, sex, occupation, non-formal education, etc. Therefore, only earning preferences cannot be used as a measure of the pure benefits of education.
- Although education has some direct benefits yet it has more indirect benefits and this indirect benefits are not shown in earning differential. It means the non-economic benefits of education are not reflected in earning preferences and this non-economic benefits cannot be analysed through cost-benefit analysis.
- Education does not make workers more productive but simply acts as a filter or screen device that enables employees those with superior natural ability.
- Earning differential do not adequately measure differences in the productivity of workers due to imperfection in the labour market, so that differences in earnings do not provide a measure of the direct benefits of education.
- It is necessary that all educated people must be employed but many developing countries are experiencing unemployment of graduates and secondary school pass out.

- Private rates of return are meaningless as individuals do not make educational choices as though they were making a purely financial investment discussion.
- The return of education is more qualitative than quantitative. It is much more difficult to measure quality than quantity, however, in doing so cost-effective analysis may be more appropriate than cost-benefit analysis.
- Technical and methodological weakness in many rates of return studies including poor data, unreliable samples and biasness in measuring both cost and benefit is another objection against this cost-benefit analysis of education.

These appears to be a list of objection, on the basis of which some writers have attached and rejected the whole concept of cost-benefit analysis of education.

LET US KNOW



Some educationist have argued that cost-benefit analysis is inapplicable to education due to the multiplicity of educational objectives and importance of non-economic benefits, however cost-benefit analysis in its present form do not provide an appropriate means of analysing non-economic benefits of education. There are other techniques-such as-**Cost-effective analysis** for non-economic benefits.

7.4. PRODUCTION FUNCTION MODELS

One of the important models in the study of economics of education is **Production Function Model.** In simple term, Production Function Model is a technique to examine the relationship across a variety of variables that contribute to economic growth and measures the relative differentials in the contribution of variables or sub variables to economic growth. It relates the production of an economy in terms of output, input or GDP to how factors such as capital, labour, and energy are combined to economic growth. As already mentioned, production or growth is a

function of interaction of a variety of variables that contribute to growth. As such a model that examines, explains, assesses and predicts the relative differentials in values and contributions of variables to economic growth is a Production Function Model. This model was used by leading economists of the world such as **Edward F Denison, Theodore W Schultz, Gary S Becker. D. W**. Jorgensen used this model to measure the contribution of education to economic growth in the United States at different periods of time.

A simple production model lies behind much of the analysis in the economics of education. The common inputs are things such as- school resources, teacher quality, and family attributes, and the outcome is student achievement. This area is, however, distinguished from many because the results of analyses enter quite directly into the policy process. Historically, the most frequently employed measure of schooling has been attainment or years of schooling completed. The value of school attainment as a rough measure of individual skill has been verified by a wide variety of studies of labour market outcomes. However, the difficulty with this common measure of outcomes is that it assumes a year of schooling produces the same amount of student achievement, or skills, over time and in every country. This measure simply counts the time spent in schools without judging what happens in schools – thus, it does not provide a complete or accurate picture of outcomes. Recent direct investigations of cognitive achievement find significant labour market returns to individual differences in cognitive achievement (e.g., Edward Lazear (2003), C.B. Mulligan (1999), Richard Murnane, T.D. Willett, Y. Duhaldeborde, and Tyler (2000)). Similarly, society appears to gain in terms of productivity. E.A. Hanushek and D. Kimko (2000) demonstrate that **quality differences in schools have a dramatic impact on productivity and national growth rates**. Because outcomes cannot be changed by fiat, much attention has been directed at inputs – particularly those perceived to be relevant for policy such as school resources or aspects of teachers. The production function can also be incorporated into a general equilibrium framework to show our wages and rental rate of capital might be determined in an economy.

While discussing Production Functional Model, "Coleman Report" is worth mentioning—the U.S. government's monumental study on educational opportunity released in 1966 (Coleman et al. 1966). Analysis of the role of school resources in determining achievement begins with the "Coleman Report". Its greatest contribution was directing attention to the distribution of student performance — the outputs as opposed to the inputs. The output of the educational process i.e., the achievement of individual students - is directly related to inputs that both are directly controlled by policy makers such as- the characteristics of schools, teachers, curricula, and so forth and are not so controlled such as families and friends and the innate endowments or learning capacities of the students. Further, while achievement may be measured at discrete points in time, the educational process is cumulative; inputs applied sometime in the past affect students' current levels of achievement. Family background is usually characterised by such socio-demographic characteristics as parental education, income, and family size. Peer inputs, when included, are typically aggregates of student socio-demographic characteristics or achievement for a school or classroom. School inputs typically include teacher background -education level, experience, sex, race, and so forth, school organization like-class sizes, facilities, administrative expenditures, and so forth, and district or community factors for example, average expenditure levels.



CHECK YOUR PROGRESS

Q.5: What is production functional model?

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7.5. GROWTH ACCOUNTING EQUATIONS OF SCHULTZ AND DENISON

Growth accounting equation is a technique adopted by **Edward Denison** and **T. W. Schultz** to measure the relative differentials in contribution to economic growth of various factors of production, as used

initially for economic data of the United States. Relating the total output produced to inputs, this method measures the relative differentials in contribution to growth by the different factors of production. The contribution of various factors of economic growth is assessed and measured in this approach. Economic growth is defined in terms of national income. An account of national income is drawn in such a way as to balance it with the contributions of economic growth.

National income is normally measured in two ways:

- The total costs of all the factors employed to produce the given output,
- The market prices of the commodities and services that are produced in a given year.

It is possible to consider an extension of the growth accounting technique with more variables considered. Such works come under what is called as 'econometric modelling'. A 'model' is a simplified representation of reality that is used to explain or predict the interaction between and among the variables. We have already discussed about production function model. In particular, it explains the interaction of variables in production. They treat production or growth as a function of such interactions. These type of models are used to examine, assess and estimate the relative weights of different variables and sub-variables in their interactive functioning and contribution to economic growth.

Growth accounting equations of Denison:

A few economists from the Chicago School of Economics, U.S., used this approach in the late 1950s and early 1960s to examine the sources of economic growth in the United States. One of the landmark studies in this genre was by Edward F. Denison in 1962. Using the growth accounting technique, Denison explained the sources of economic growth in the United States. He accounted for the recorded rise in national income by balancing the factor shares of production with the total output produced. Since the effort was directed at accounting for growth over a period of time, the technique came to be known as the **growth accounting approach**. The Cobb Douglas Production Function Equation which is known so for its

development by Cobb, a mathematician from Cambridge, and Douglas, an economist from the United States was used for the purpose. The production function equation assumes that the quantity produced in a country is determined by the interplay of labour (L) and capital (K). Although these two -**labour and capital** are considered as the main factors, there are other factors or variables which influence the relationship. As they could not be accounted explicitly, they are treated as a constant. Hence, **Q**, the quantity produced is the outcome of the interplay of **'L**' and **'K'** along with 'other factors' denoted by a constant '**A'.** The capital used in production included fixed capital such as land and circulating or perishable or consumable capital such as raw materials, machines, electricity, etc.

In equation form, the relationship was expressed as:

a´´1 - a

Q = A . K .L

where the symbol **a (alpha),** a constant, stands for the contribution of the capital **K** to national income. Since the total contribution of **L and K is one (a unit),** the contribution of **L is (1 – a).**

The contribution of capital and labour as well as that of 'A' can be determined by solving for the parameters or constants (i.e. A and a) when time series data on the three variables L, K and Q are available. Denison's work on the national income data for the U.S. during the period of 1929-1958 showed that the average annual rate of economic growth was 3.9 per cent. Denison attributed 1.6 per cent of this growth to the share of capital and 1.0 per cent of this growth to labour. Hence 1.3 per cent growth was left unexplained. The traditional neo classical factors of production viz. land, capital and labour could not explain it. The residual percentage was as high as one third of the total economic growth in the United States. Denison began to analyse this residual so as to identify its elements and their share, if any, in total output. For this reason, it has also been called as the **Residual Analysis Approach**. Traditionally, the contribution of labour to national product was conceived in terms of 'effort', that is, in terms of the number of hours of work put in by individual labourers multiplied by the total number of labourers in the work force. But Denison began to look at labour not only as

effort but in terms of acquired ingenuity, skills, techniques, health status, formal education etc. He was conscious of the fact that the residual is left unexplained because the quality of inputs had not been accounted for. In spite of attention to these factors or variables there will still remain a residual, a new one, which will be left unexplained. **Denison expanded the Cobb Douglas production function equation by breaking up the rate of increase in labour quality into three constituents: LE, LA and LW; E representing changes in educational achievement, A for changes in labour quality attributed to age and sex composition of the work force, and W for changes due to varying average work weeks in a year.** With these factors incorporated, Dennison found that during the reference period 1929 to 1958, labour quality in the U.S. work force, measured in terms of health, fitness, experience, skills and educational attainments, grew at a rate of 1.4 per cent per annum. He also could deduce that changes in labour quality accounted for over fifty per cent of the annual growth in A with nearly 40 per cent of the change in A due to changes in LE i.e. the educational attainments of the work force. He, therefore, concluded that education represented a form of capital, known as human capital.

Growth accounting equations of Schultz

The work of Denison was furthered by Theodore Schultz who identified different sources by which human capital is developed. He identified formal education in schools and colleges, non-formal education, and on the job training which may be either pre service or in service as the three major sources. The implications of the study by Denison read with the analysis of Schultz indicated that expenditure on education is a form of investment and not just consumption. In other words, education Educational Planning and Economic Growth Economics of Education is not merely a welfare proposition but an investment avenue. Schultz reworked with the same data that Denison had used and arrived at identical results. Later, Becker also did growth accounting analysis and demonstrated the values of health and education as forms of human capital. Many hard-core economists subsequently toyed with **technology** as the factor contributing to the residual growth denying thereby a high degree of value to human

capital in explaining the constant 'A' in the production function equation. The human capital theorists still held on to their contention by observing that an improvised technology cannot be transferred or adopted in a vacuum without a human medium. Technology can only minimise human labour but would still require a high level of human capital for its operation. With this argument conceded, the inference that expenditure on relevant science and technology education is a form of investment assumed credence. People with just primary education will not participate in secondary sector activities. Between the sexes, a large proportion of consumers of primary education remain as housewives. It is observed that even illiterate farmers in developing countries adopt new agricultural practices.

It is for this reason Schultz distinguished three types of education-

- **Education for current consumption:** Any education that helps an individual to understand nature and society, as well as assist him to adjust and live in harmony with them, is treated as education for current consumption.
- **Education for long term future consumption:** Higher levels of technical or professional education leading to higher degrees of human capital would be of value for long term future consumption.
- **Education/training for skills and knowledge directly used for production**: Education that provides skills and knowledge for farmers and workers in agricultural and industrial production are illustrations of knowledge/skills used for production.

Denison's technique of analysis was later adopted by **Jorgenson. Jorgenson and Griliches (1984**) worked on U.S. data on national income first for the period 1958- 1973 and later for the period 1974 to 1988. Jorgenson accounted for all the possible factors that contributed to national income including non-market productive activities. His residual analysis approach demonstrated the contribution of skills and education to increases in production. It highlighted the significance of quality of labour in the process of development. Every addition to the level of education or stepping up of skills resulted in increases to national products. Differential contributions

to national product indicated the marginal values of educational levels. However, the residual analysis approach could not help in deciphering whether the educational levels were profitable at a given point of time, especially from a macro perspective. Though a higher level of education appeared to be profitable, the exact margin of benefit for the individual and the society was not clear. Further, at higher levels, the diversity in specialisation of courses also meant varying degrees of economic value. The benefits generated by the variety of educational programmes could not be captured by Residual Analysis approach. The life time returns on alternative investment possibilities was thus not clear. These and similar issues are more effectively tackled by cost benefit studies



CHECK YOUR PROGRESS

Q 6: Who adopted growth accounting equation technique?

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Q 7: Who developed Production Function Equation?

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Q 8: State the three types of education as distinguished by Schultz.

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7.6. LET US SUM UP

The unit can be summarised as follows-

- Cost-benefit Analysis implies a systematic analysis arranging of the magnitude of the cost and benefit of a form of investment in order to access its economic profitability.

- Cost benefit analysis provides future benefits in the light of the cost that must be included in the present.
- Cost benefit analysis in education provides a measure of the profitability of education as an investment for society, or for the individual student or his/her family.
- It will act as a general guide for resource allocation and enable the comparison of the profitability of different types of education.
- Cost-benefit analysis may point to the need for change in resource allocation in favour of those types of education offering the highest rate of return.
- Economists and educationists have raised a number of theoretical and practical objection of using cost-benefit analysis in the field of education particularly in developing countries
- The first and foremost objection against cost-benefit analysis of education is that it is very difficult to access the economic benefits of education directly through earnings, as earning depends on many other factors like- natural ability, motivation, social background, sex occupation, non-formal education etc.
- Cost-benefit analysis in its present form do not provide an appropriate means of analyzing non-economic benefits of education. There are other techniques such as, **Cost-effective analysis** for non-economic benefits.
- Production Function Model is a technique to examine the relationship across a variety of variables that contribute to economic growth and measures the relative differentials in the contribution of variables or sub variables to economic growth.
- This model was used by leading economists of the world such as Edward F Denison, Theodore W Schultz, Gary S Becker and **D. W.**
- Growth accounting equation is a technique adopted by Denison and Schultz to measure the relative differentials in contribution to economic growth of various factors of production, as used initially for economic data of the United States.

- Using the growth accounting technique, Denison explained the sources of economic growth in the United States. He accounted for the recorded rise in national income by balancing the factor shares of production with the total output produced. The technique came to be known as the growth accounting approach.
- The work of Denison was Theodore Schultz who identified different sources by which human capital is developed
- Schultz distinguished three types of education-
  (a) Education for current consumption (b) Education for long term future consumption (c) Education/training for skills and knowledge directly used for production
- Denison's technique of analysis was later adopted by **Jorgenson**. Jorgenson and Griliches (1984).



7.7. FURTHER READING

1) Aggarwal R.B. (1993): *Financing Higher Education in India*, Ganga Kaveri Publishing House, Varanasi.
2) N. Kumar and R. Mittal. (2002): *Economic Development and Planning*, Anmol Publications.
3) Natarajan S: *Introduction to Economics of Education*", Sterling Publishers Private Limited, New Delhi.
4) Mukherjee Sampat: *Economic Principles and Problem*, New Central Book Agency (p) Ltd.



7.8. ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Cost-benefit analysis finds, quantifies and adds all the positive factors. These are the benefits. It then identifies, quantifies and subtracts all the negatives, the costs. The difference between the two indicates whether the planned action is advisable. The real

trick to doing a cost benefit analysis well is making sure one include all the costs and all the benefits and properly quantify them.

Ans to Q No. 2: The purpose of the cost-benefit analysis is to provide a measure of expected real investment as a guide to rational allocation of resources.

Ans to Q No. 3: In the words of Maureen WoodHall, cost benefit analysis implies, "a systematic comparison of the magnitude of the costs and benefits of some form of investment (in case of education it is investment in human capital)".

Ans to Q No. 4: Cost-benefit analysis is important in education because-

- Cost- benefit analysis can be useful in guiding investment decision of funding agencies or donors by showing which educational projects are likely to be profitable.
- Cost-benefit analysis may suggest ways of increasing the profitability of education either by increasing its benefit or lowering the cost.

Ans to Q No. 5: The model that examines, explains, assesses and predicts the relative differentials in values and contributions of variables to economic growth is known as Production Function Model.

Ans to Q No. 6: Growth accounting equation is a technique adopted by Denison and Schultz.

Ans to Q No.7: Cobb was a mathematician from Cambridge, and Douglas, an economist from the United States. These two economists developed production function equations.

Ans to Q No. 8: Schultz distinguished three types of education-

- Education for current consumption: Any education that helps an individual to understand nature and society, as well as assist him to adjust and live in harmony with them, is treated as education for current consumption
- Education for long term future consumption: Higher levels of technical or professional education leading to higher degrees of human capital would be of value for long term future consumption
- Education/training for skills and knowledge directly used for production: An education that provides skills and knowledge

for farmers and workers in agricultural and industrial production are illustrations of knowledge/skills used for production.



7.9. MODEL QUESTIONS

A) Short Questions (Answer each questions in about 50-150 words)

Q.1 What do you mean by cost-benefit analysis?

Q.2 Define cost-benefit analysis in education.

Q.3 State two advantages of using cost-benefit analysis in education.

Q.4 State two disadvantages of using cost-benefit analysis in education.

Q.5. What is Functional Production model?

Q.6. What is Growth Accounting approach?

Q.7. Why is Denison's growth accounting approach known as Residual Analysis Approach?

B) Long Questions (Answer each questions in about 300-500 words)

Q.1 Explain the concept of cost-benefit analysis in education.

Q.2. Discuss the significance of cost-benefit analysis in education

Q.3. Explain the Functional Production model.

Q.4. Elaborate the growth of Accounting equation by Denison and Schultz.

Q.5. Differentiate between growth accounting equation by Denison and Schultz.

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UNIT 8 : EDUCATIONAL PLANNING AND DEVELOPMENT - II

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Meaning of Manpower Planning

- 8.3.1 Objectives of Manpower Planning
- 8.3.2 Importance of Manpower Planning
- 8.3.3 Need of Manpower Planning

8.4 Manpower Planning Process

8.5 Manpower Requirement Approaches

8.6 Programming and Input-Output Model

8.7 Educational Planning in Developing Countries with Emphasis on India

8.8 Lets Us Sum Up

8.9 Further Reading

8.10 Answers to Check Your Progress

8.11 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- identify the need and importance of manpower recruitment planning
- discuss different types of manpower recruitment approaches
- explain the Programming and Input-Output Model
- describe the role of educational planning in developing countries like India.

8.2 INTRODUCTION

Planning aims at bridging the gap between where we are and where we intend to go. It is a process of setting goals for the future and formulating strategies to achieve those goals. Educational planning too

involves balancing of resources (both physical and human) available to the education sector along with the educational needs in such a way that they facilitate the realisation of educational goals set by the national education policies adopted at various points of time. Education is an instrument of personality development of children at the individual level as well as achieving the national developmental goals of a country. Economic development is one of the foremost goals of any country. Hence education is required to play an instrumental role in achieving the developmental goals of a country. There are, however, several approaches and models to achieve the developmental goals of an economy through education. Each of these approaches, as evident from several studies, has its own merits and limitations. Understandings of these approaches are essential to appreciate the various aspects of educational planning and one of them relates to the manpower recruitment approach which implies that the social system of any country requires educated and trained people with defined sets of knowledge, attitudes and skills. In this unit, we will discuss some of the important approaches to educational planning which include issues associated with educational planning and development such as manpower planning, programming and input-output models and educational planning with particular reference to developing countries.

8.3 MEANING OF MANPOWER PLANNING

Manpower Planning, also known as Human Resource Planning, consists of putting the right number of people, the right kind of people at the right place, right time, doing the right things for which they are suited for contributing to the desired goals. Undoubtedly, planning is the most essential factor for each and every organisation; without planning, no organisation can fulfil its goals. Manpower Planning entails the development of strategies to match the supply of manpower to the availability of jobs at the organisational, regional or national level. Manpower planning involves reviewing current manpower resources, forecasting future requirements and taking steps to ensure that the supply of people and skills meets the future demand.

In the words of Stainer “manpower planning is the strategy for the acquisition, utilisation, improvement and preservation of organisations’ human resources. It is aimed at coordinating the requirements for and the availability of different types of employees.”

According to Edwin B. Geisler, manpower planning is “the process by which a firm ensures that it has the right number of people and the right kind of people, at the right places, at the right time, doing things for which they are economically most useful”.

According to Bruce P. Coleman, manpower planning is “the process of determining manpower requirements in order to carry out the integrated plan of the organisation”.

8.3.1 Objectives of Manpower Planning

The important objectives of manpower planning in an organisation are:

- To recruit and retain the human resources of required quantity and quality;
- To foresee the employee turnover and make the arrangements for minimising turnover and filling up of consequent vacancies;
- To meet the needs of the programmes of expansion, diversification etc.;
- To foresee the impact of technology on work, existing employees and future human resource requirements;
- To improve the standards, skill, knowledge, ability, discipline etc.;
- To assess the surplus or shortage of human resources and take measures accordingly;
- To maintain congenial industrial relations by maintaining optimum level and structure of human resources;
- To minimise imbalances caused due to non-availability of human resources of the right kind, right number in right time and right place;

- To make the best use of its human resources and
- To estimate the cost of human resources.

8.3.2 Importance of Manpower Planning

- **Key to Managerial Functions:** The four managerial functions, i.e., planning, organising, directing and controlling are based upon the manpower. Human resources help in the implementation of all these managerial activities. Therefore, staffing becomes a key to all managerial functions.
- **Efficient Utilisation:** Efficient management of personnel becomes an important function in the industrialisation world of today. Setting up large scale enterprises requires management of large scale manpower. It can be effectively done through staffing function.
- **Motivation:** Staffing function not only includes placing right men in the right job, but it also comprises motivational programmes, i.e., incentive plans to be framed for further participation and employment of employees. Therefore, all types of incentive plans become an integral part of the staffing function.
- **Better Human Relations:** An organisation can stabilise itself if human relations develop are strong. Human relations become strong through effective control, clear communication, effective supervision and leadership. Staffing function also looks after training and development of the work force which leads to co-operation and better human relations.
- **Higher Productivity:** Productivity level increases when resources are utilised in the best possible manner. Higher productivity is a result of minimum wastage of time, money, efforts and energies. This is possible through the staffing and it's related activities (performance appraisal, training and development, remuneration).

8.3.3 Need of Manpower Planning

The basic objective of human resource planning is to reduce the risk of surplus or shortage of manpower and to maintain an optimum number of employees in the organisation. Manpower planning ensures the maximum utilisation of available human resources and thus reduces the cost of hiring, training and development. Moreover, manpower planning, these days, is viewed as a cost reducing and profitability increasing factor. It reduces personnel costs, recruitment, selection and training costs and increases productivity through strategic allotment of existing human resources. Manpower Planning is a two-phased process because manpower planning not only analyses the current human resources but also makes manpower forecasts and thereby draws employment programmes. Manpower Planning is advantageous to an organisation in the following manner-

- Shortages and surpluses can be identified so that quick action can be taken wherever required;
- All the recruitment and selection programmes are based on manpower planning;
- It also helps to reduce the labour cost as excess staff can be identified and thereby overstaffing can be avoided;
- It also helps to identify the available talents in a concern and accordingly training programmes can be chalked out to develop those talents;
- It helps in growth and diversification of business. Through manpower planning, human resources can be readily available and they can be utilised in the best manner.
- It helps the organisation to realise the importance of manpower management which ultimately helps in the stability of a concern.

8.4 MANPOWER PLANNING PROCESS

Manpower planning process consists of five major steps to regulate current and future manpower requirements of an organisation. These steps are: 2

- Analysing Organisational Objectives
- Analysing the Current Manpower Inventory
- Forecasting Human Resource Demand and Supply
- Gap Analysis
- Developing Human resource Plan to Help Achieve Organisational Goals
- **Analysing Organisational Objectives**: Once the organisational objectives are set, an analysis of these objectives and strategies regarding production, marketing, finance, diversification and expansion of the organisation are required to have a fair idea of future organisational manpower needs. For this purpose Human Resource Management tries to find out how many staff would be required at what level, at what positions and with what kind of educational qualifications, experience and training to meet the organisational objectives during the plan period.
- **Analysing the Current Manpower Inventory**: After determining and analysing the organisational objectives, the next step in the process of manpower planning is to understand and assess the current employee and staff position in the organisation. From the human resource data bank, the current number of faculty and staff working in each Department/ Sections, their capacity, skills, abilities, performance and potentials can be analysed. To fill the various job positions, the internal as well as external sources can be used. A systematic review of the internal sources would indicate the availability of staff within the organisation who possess the right qualification, experience, skills and desire to accept a higher level of responsibilities. Therefore, the manpower planning should include a sound system of performance appraisal as well as appraisal of potentials of existing employees.

- **Forecasting Human Resource Demand and Supply**: The next step is to forecast the demand for and supply of human resources in an organisation at a future date keeping in view the possible structural changes, expansion and growth, change in technology, change in market conditions and Government policies. Further, human resource needs can be estimated with the help of the organisation's current manpower position and analysis of organisational plans. There are many techniques available for forecasting the human resource demand like managerial judgement, time series analysis, regression analysis, extrapolation and various mathematical models. Forecasting of human resource supply is another important aspect of human resource assessment. An effort should be made to estimate the future sources of manpower supply that are likely to be available from within and outside the organisation. Internal sources include promotion, transfer, job enlargement and job enrichment, whereas external sources include direct recruitment of fresh candidates from the labour market. While deciding the sources of manpower supply, Human Resource Management in consultation with top management should make a very clear policy about the positions to be filled through promotional channels and through direct recruitment from outside. The best policy which is followed by most of the organisations is to fill up higher level positions by promotions and lower level positions by recruitment from the open market.
- **Gap Analysis**: Gap analysis refers to the process of determining the gap between what is desired and what is available. In simple words, it determines the gap between where the institution wants to be in future and where it is now. It is concerned with matching the forecast of demand and supply of human resources in the organisation at a future date. In this process an effort is made to bring an equilibrium position in demand and supply of manpower so that shortages or surpluses can be avoided. In case of

shortages, an institution has to recruit a more required number of personnel either by direct recruitment from outside agencies or by promoting and assigning new roles to the existing employees internally or by both. Proper training must be provided in case existing employees are assigned new roles. In case of overstaffing, the number of existing employees needs to be reduced either by termination or by attrition. Termination approach can bring immediate results provided that the employment contract allows it. This approach may be recommended only in case there is an urgent need to reduce the number of employees as the organisation is going through a financial crisis. Attrition, on the other hand, is a slow process of reducing the number of personnel. In this process employees are not replaced when they leave the organisation/retire. While going for attrition, there is a need to make sure that the work of the departing employee is being covered. For this purpose, the workload of the whole Department/ Section needs to be reorganised in such a way that each one is getting appropriate workload and at the same time the productivity is not adversely affected.

- **Developing Human Resource Plan to Help Achieve Organisational Goals:** Developing and executing a comprehensive and strategic human resource plan is the last step in the manpower planning process. For this purpose, HR strategies related to restructuring, developing and retaining staff, recruitment, selection, training and development, outsourcing etc. should be developed. Once the human resource strategic plan is ready, it must be properly executed to help achieve the organisational objectives. Manpower Planning is a continuous process which begins with determination of HR objectives, moves through forecasting of manpower demand and supply and ends at appraisal of HR Planning. Therefore, a sound system of appraisal should evolve to evaluate the success of the new HR plan. Human resource plans need to be updated on a regular basis according to change in time and conditions.



CHECK YOUR PROGRESS

Q 1: What is meant by Manpower Planning? (Answer in about 50 words)

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Q 2: What is the basic objective of Human Resource Planning? (Answer in about 40 words)

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Q 3: What are the steps involved in the manpower planning process? (Answer in about 40 words)

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Q 4: What is meant by term 'Gap Analysis'? (Answer in about 30 words)

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8.5 MANPOWER REQUIREMENT APPROACHES

Manpower requirement approach or model first came into widespread use in the Organisation for Economic Cooperation and Development (OECD's) Mediterranean regional project (MRP) in the early 1960's. Since then, manpower forecasting became a common practice to a large number of economic statisticians, social researchers and educators with claims that indicated an ability to determine the manpower requirements of each occupational area for a particular city, region or country. Such forecasts were and are still used to influence labour and educational policies at national and or regional levels and they play a major role in justifying expenditures.

The main objective of the manpower requirement approach is to avoid shortages in manpower in the labour market, considered as a setback to economic development. It assumes that objective manpower requirements exist and in order to meet them, only training the corresponding number of people is needed. It thus aims at forecasting an economy's manpower requirements. The education system output is intended to meet future manpower needs. In one of the studies it was found that manpower requirement creates wide gaps and imbalances in the output pattern of the education sector, putting to doubt its viability as an approach to planning an effective education system. However manpower requirement approach gives stakeholders in the education sector useful guidance as to how to keep labour force's educational qualifications balanced to alleviate future crises. Nevertheless, this approach sometimes produces unreliable forecasts with regard to manpower requirements. As an approach used in educational planning it aims to:

- Estimate the required number of graduates by education level in the economy.
- Estimate the number of teachers at different levels and types of education.
- Assess the existing curriculum and give recommendations for change.

The different types of Manpower Planning Approaches are briefly explained below :

- **Rules of the Thumb:** It is also called the historical approach. It involves analysing data on past trends to quantify the relationship between aggregate and per capita output; and the pattern of manpower usage. The presence of a stable relationship permits the projection of such trends into the future. This method assumes that high level manpower should grow twice as fast as the target rate of economic growth and the intermediate manpower should grow three times as fast. However, these rules are not based on any evidence or analysis but judgment, yet the future is unlikely to

be a simple extension of the past. Also, there is a difference in the content of the past data and of future projections.

- **Employer's Estimates of Future Manpower Requirements:** This involves collection of information from various firms or sectors on how they expect output and employment to behave over the period of forecast. It is easier to use this method for some occupations where the government is the major employer. These estimates are however unreliable due to lack of guidance on assumptions that employers should estimate about price and wage levels, demand for their products or their own show of market and hence end up making mutually inconsistent assumptions. Indeed most firms are more familiar with adapting their input requirements to actual or expected supply conditions rather than estimating changes in the supply conditions themselves. Individual employers, thus, find it difficult, just like governments, to make accurate forecasts. Information derived from surveys of employers throws some light on the assumptions and techniques of forecasting.
- **Structural Approach:** This approach compares the pattern displayed by the most advanced sectors or economies. It can be divided into international comparisons and industrial comparisons. The international comparisons assume that to achieve faster economic growth, less developed countries should copy the structures of countries with higher national income. It is based on the idea that some countries have certain manpower growth paths in common and that to achieve a higher level of output, a developing country must increase the number of qualified workers employed until the proportion resembles that of a more advanced country. However, this is dependent on the following conditions:-
  - Future patterns of demand in the poor country would need to correspond to that of the present existing in the advanced country.
  - It would be necessary for input combinations to be determined in the same way.

- It would be necessary to have a similar rate of capital accumulation with respect to income of the countries.
- It would be necessary to have knowledge of and access to technological processes developing in the same way.
- It would be necessary to have either foreign trade or both economies have access to the markets for relative prices to vary in the same way in each of the economies as income increases.

In industrial comparisons, the assumption is that the less developed sectors in future will tend to reproduce the pattern currently exhibited by the most advanced firms or industries. However, this results in incomplete coverage because:

- It does not help predict the future behaviour of the best firms themselves.
- It does not make allowance for entry of new firms.
- It's not possible to precisely tell how fast the existing firms will grow.
- It assumes that all firms have equal opportunities.

- **Manpower-Population Ratios:** It concentrates on the ratio between one type of manpower and a particular population parameter. It is mostly used in areas where the educational qualifications of the required manpower are known and mostly controlled by the governments. This may include teachers, doctors, policemen and military. Forecasts for the demand for teachers based on teacher: pupil ratios and forecasts for doctors based on doctor: population ratios relying on demographic forecasts and the staffing norms. This approach faces the following challenges:-
  - Inaccurate demographic forecasts especially in developing countries.
  - It is compounded by many special factors, for example forecasts of school population depend on wastage, repetition, the proportion of the age group choosing to enrol on voluntary education and other factors that must be analysed

separately, although information is often scanty and inaccurate.

- Technological change may cause substitution of capital for labour or one kind of labour for another.
- Changes in relative prices or wages may also cause substitution and may change the balance between closely related types of manpower.

- **Mediterranean Regional Project (MRP) Technique:** This technique had been initially employed by the OECD (Organisation of Economic Cooperation and Development, Europe) to prepare manpower plans for six countries, that shared the Mediterranean Sea. The sea-based resources served as one common feature for all these countries. The countries covered were Greece, Italy, Yugoslavia, Portugal, Turkey and Spain. Essentially, it is a straightforward manpower planning model based upon an input-output view of the economy. In detail, this means that the target gross national product is first broken down by industrial sectors, or possibly by individual industries. The occupational make-up of the labour force is translated into national education requirements by applying a standard measure of educational achievement necessary to perform successfully in each occupational classification. By the end of the 1960s, the MRP methodology was still being used as a convenient method of making quick estimates of manpower needs in many developing countries, but it had been largely abandoned in the OECD member countries. Knowledge of the MRP may be of some value in understanding the corporate memory of some international organisations such as the World Bank, International Labour Organization, and UNESCO, which are concerned with using education to promote economic and social development.

8.6 PROGRAMMING AND INPUT-OUTPUT MODEL

The theory of programming was initially developed in the U.S.A during the period of Second World War. The theory of programming has two parts. The first part deals with the inter-dependence and internal

consistency of the various sectors in an economy. The second part studies the optimisation of economic decisions. Presently, both the parts are becoming the integral parts of Operations Research. As the first part of the programming deals with the quantitative analysis of inter-industry relations, it is also known as input output analysis. Input output analysis bridges the gap between Walrasian concept of equilibrium and Keynesian concept of equilibrium. Prior to the development of input output analysis there were two extremes of economic equilibriums viz. Walrasian concept of equilibrium and Keynesian concept of equilibrium. In the Walrasian concept of equilibrium we have an infinite number of productive sectors in an economy and it follows highly mathematical abstraction of production relation. Whereas, in the Keynesian concept of equilibrium we have only two sectors in an economy and it is highly aggregative.

Nobel Laureate W.W. Leontief, a young Russian born American economist developed the input output model in 1941 considering the production process of American economy along with the variety of outputs for the period 1919-29.

Before explaining the input output model, let us first discuss the concepts of input and output. In this model input and output belongs to economy as a whole. Output refers to the whole production of a country. The total production of a country basically comprises of three major sectors viz. primary sector, secondary sector and tertiary sector. The primary sector covers those activities which are associated with derivation of products from natural resources. Primary sector consists of agriculture and allied activities including animal husbandry, irrigation, forestry, fisheries, mining/ quarrying etc. The secondary sector covers those activities, which are associated with derivation of products out of the products extracted from the primary sector. The secondary sector, therefore, comprises industries including those related to processing and manufacturing; generation of electricity, gas, water and also construction etc. The tertiary (services) sector includes those activities through which the products derived from the primary and secondary sectors are distributed to various intermediate and final consumers. The tertiary (services) sector, thus, refers to transport,

communications, trade, commerce, finance etc. Input refers to any resources or factors of production without which production (output) is not possible. For example labour, capital and technology are the primary inputs for creation of goods and services. The efficiency of production is measured in terms of per unit of inputs used.

The basic idea used in the input output analysis is, actually, quite simple to understand. The inputs of one industry is nothing but the outputs of some other industries and vice versa, ultimately their mutual relationship must bring about equilibrium between the demand and supply in the economy. The input-output analysis is based on the recognition of the inter-dependence of production sectors on the one hand and a two way relationship of production sectors and the final demand sector on the other hand. The feature of the model is that it applies to an economy, which is in general equilibrium and each of the producing sectors of the economy is assumed to be inter-related. The entire structure of the model is based on statistical relationship. The model is also referred to as an analysis of inter-industry relations or inter-industry flows.

Let us suppose that an economy consist of n producing sectors. The output of each of the n sectors, denoted by X_i (i=1,2,....n), is used as intermediate demand in the various n sectors (including its own sector) denoted by x_{ij} (i=1,2,....n) and its final demand F_i (i=1,2,....n). Here, x_{ij} indicates the amount of output of i^{th} sector used as intermediate inputs in j^{th} and F_i indicates the final demand of i^{th} sector, which is the lateral summation of demand for household consumption, government consumption, investment, inventory and net exports.

For different n sectors, the sectoral output is given by the system of following n equations-

$$X_1 = x_{11} + x_{12} + x_{13} + \ldots\ldots\ldots + x_{1n} + F_1$$
$$X_2 = x_{21} + x_{22} + x_{23} + \ldots\ldots\ldots + x_{2n} + F_2$$
$$X_3 = x_{31} + x_{32} + x_{33} + \ldots\ldots\ldots + x_{3n} + F_3$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$
$$X_n = x_{n1} + x_{n2} + x_{n3} + \ldots\ldots\ldots + x_{nn} + F_n$$

An industrial sector can be both a consumer of the outputs and a supplier of the inputs of other sectors in an economy. The input-output analysis model describes such an interdependent relationship. The analysis is typically presented in a matrix or table. The outputs of each sector are shown in rows and turn into the inputs of the other sectors listed in columns.

Below is an example of an input-output table for an economy with two sectors. As the first row shows, the agriculture sector produces 500 units of outputs in total, of which the majority – 320 units flow into the manufacturing sector as inputs for its production. 100 units are delivered to households directly as final demand, and the remaining 80 units are consumed by the agriculture sector itself as fodder and seeds, for example.

The second row shows where the outputs from the manufacturing sector flow to. Out of the total 260 units of output, 60 units flow to the agriculture sector as inputs or factors of production, such as reaping machines. 40 units flow back to the manufacturing sector to support further production processes. The remaining 160 units are consumed directly by households.

Table 8.1: Input-Output table

Sectors	Inputs to Agriculture	Inputs to Manufacturing	Final Household Demand	Total Outputs
From Agriculture	80	320	100	500
From Manufacturing	60	40	160	260

The table above is an oversimplified example for easy understanding. The situation in the real world is much more complicated with an extensive number of sectors and cross-sector flows of inputs and outputs.

Input-output models are widely used in the field of economics of education. In the studies of cost-quality and education-labour-earnings relationships, input-output approach is used. The time requirements, incurred costs, resource needs, employment opportunities and gestation

periods for employment of different levels and types of education are different. Also, similar types of educational programmes lead to different types of employment opportunities. The efficiency and economic value of any educational programme depends on the employability of the programme and how much life-time earnings the programme as a whole leads to. The quality of inputs is one of the important factors of determining the quality of outputs of education. Again for ensuring a certain level of quality of inputs we have to incur a specified cost. That means the different quality inputs of education have different costs. Now, the role of input-output analysis is to optimise the cost of education in order to ensure a certain quality of education.

No doubt, the qualification of an individual play an important role in determining his/her employment opportunities and earnings, but apart from it individual's gender, contacts, experience, intelligence and competence, emotional maturity, language proficiency, rural-urban background, accumulation of information etc. also play important roles in this direction. This point was raised by Kenneth Arrow, Nobel Laureate in Economics as one of criticisms of applying input-output analysis in education.



CHECK YOUR PROGRESS

Q 5: Who developed the input output model?

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Q 6: State the basic idea behind the input output model. (Answer in about 40 words)

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Q 7: State the role of input-output analysis in economics of education. (Answer in about 30 words)

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Q 8: Fill in the blanks:

a) The input output analysis is also known as .....

b) Input output analysis bridges the gap between .....

8.7 EDUCATIONAL PLANNING IN DEVELOPING COUNTRIES WITH EMPHASIS ON INDIA

The manpower planning approach estimates the general demand for and the capacity of supply of human resources in different streams of and at different levels of the education sector. The approach asserts that the system of education produces the right quality of human resources with desirable knowledge, attitudes and skills in the right numbers and thus, education is directly linked with economic development.

The application of the manpower planning approach in educational planning depends on these factors–

- An appraisal and analysis of the existing employment conditions and the system of education,
- Planning the system of education vis-a-vis the manpower needs of the economy,
- Using the financial resources (which are limited) in an optimum way so as to fulfil the demands for the employment in various sectors without incurring wastage on account of unemployment.
- Making an appraisal of the number of students enrolled, the number of existing teachers and their qualifications, enrolment in teacher education institutions (availability of future teachers), as well as the existing number of school buildings, equipment, infrastructure and other facilities.
- The requirements of the employers regarding occupational and/ or professional qualifications for employees, their levels of training and abilities should also be assessed.

The manpower planning approach takes note of the fact that the teaching profession requires approximately 60 percent of the highly qualified human resources of a country which competes with the demand for manpower in other economic sectors. Making of a detailed projection of the demand for human resources is difficult due to the uncertainty of productivity trends.

Education Planning has been one of the essential areas of concern in all the Five Year Plans in India. With the onset of globalisation and modernisation in recent times, education at all levels has become very necessary if India is to outperform other nations. Since the 1990s, the Indian government has been emphasising the need to develop education in India across all levels - elementary, secondary, vocational, technical and higher levels. Towards this, the government has also formulated certain measures.

- **Hindrances to Education Planning in India:** The major problems of the Education Planning in India, according to various experts, are as given under–
  - High drop-out rates
  - Low levels of learning achievement
  - Low participation of girl students
  - Inadequate school infrastructure
  - High rate of teacher absenteeism
  - Large-scale teacher vacancies
  - Inadequate teaching/learning material
  - Lack of public involvement in provisioning of educational services
  - Variation in the literacy rates for the Special Groups of citizens
  - Variation in inter-state literacy rates.
- **Steps taken by government in accelerating Education Planning in India:** The central as well as the state governments have been emphasising on the growth of education at all levels. Moreover there are District Literacy Societies or Zilla Saksharta Samiti who also play the most pivotal role in promoting education. The first step taken by the Indian government is to initiate measures for universal

elementary education among all. The other significant steps taken with regard to Education Planning in India are–

- To increase the number of institutions, teachers and students at elementary level
- To provide for incentives like textbooks, free uniforms and scholarships
- To offer Centrally Sponsored Program of Nutritional Support to Primary Education or Mid Day Meal Scheme
- To launch the Sarva Siksha Abhiyan Scheme
- To initiate the District Elementary Education Plan
- To launch the National Literacy Mission for providing functional literacy to the non-literates between the age group of 15 and 35 years
- To provide free and compulsory education for children
- To improve the Industrial Training Institutes, Boards of Technical Education and Engineering Colleges and Polytechnic and Apprenticeship Schools
- To upgrade the Indian Institutes of Technology and Indian Institutes of Management
- To facilitate progress in new technology based areas like Biotechnology, Bioinformatics, and Nano-Technology.



CHECK YOUR PROGRESS

Q 9: What are the different Manpower Requirement Approaches? (Answer in about 30 words)

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Q 10: Define Input-Output Model? (Answer in about 20 words)

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8.8 LET US SUM UP

- Manpower Planning which is also called Human Resource Planning involves reviewing current manpower resources, forecasting future requirements and availability, and taking steps to ensure that the supply of people and skills meets demand.
- Manpower Planning is a two-phased process because manpower planning not only analyses the current human resources but also makes manpower forecasts and thereby draws employment programmes.
- There are five well known approaches of manpower forecasting and they are Rules of the thumb, Employer's estimates of future manpower requirements, Structural approach, Manpower: population ratios and Mediterranean Regional Project (MRP) Technique.
- Manpower requirement approach or model first came into widespread use in the Organisation for Economic Cooperation and Development (OECD's) Mediterranean regional project (MRP) in the early 1960's.
- Input-output analysis is a type of economic model that describes the interdependent relationships between industrial sectors within an economy. It shows how the outputs of one sector flow into another sector as inputs.
- Nobel Laureate W.W. Leontief, a young Russian born American economist developed the input output model in 1941 considering the production process of American economy along with the variety of outputs for the period 1919-29.
- The manpower planning approach asserts that the system of education produces the right quality of human resources with desirable knowledge, attitudes and skills in the right numbers and thus, education is directly linked with economic development.



8.9 FURTHER READING

1) Gupta, K.R. (1977).Economics of Development and Planning. Delhi: Atma Ram & Sons.
2) https://www.managementstudyguide.com/manpower-planning.htm
3) https://www.coursehero.com/file/14380986/Block-5-MEC-008-Unit-15/
4) https://corporatefinanceinstitute.com/resources/knowledge/economics/input-output-analysis/
5) https://www.sciencedirect.com/science/article/pii/B9780080333793500693
6) http://ecoursesonline.iasri.res.in/mod/page/view.php?id=5700
7) https://www.rroij.com/open-access/application-of-manpower-requirement-approach-to-educational-planning-indeveloping-countries.php?aid=87331#2
8) https://business.mapsofindia.com/india-planning/education.html
9) https://www.managementstudyguide.com/manpower-planning.htm
10) https://www.economicsdiscussion.net/human-resource-management/what-is-manpower-planning/31952



8.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Manpower Planning is the development of strategies to match the supply of manpower to the availability of jobs at organisational, regional or national level. It involves reviewing current manpower resources, forecasting future requirements and availability, and taking steps to ensure that the supply of people and skills meets demand.

Ans to Q No 2: The basic objective of human resource planning is to

reduce the risk of surplus or shortage of manpower and to maintain an optimum number of employees in the organisation, manpower planning ensures the maximum utilisation of available human resources and thus reduces the cost of hiring, training and development

Ans to Q No 3: Manpower planning process consists of five major steps and they are analysing organisational objectives, analysing the current manpower inventory, forecasting human resource demand and supply, gap analysis and developing human resource plan to help achieve organisational goals.

Ans to Q No 4: Gap analysis determines the gap between where the institution wants to be in future and where it is now. It is concerned with matching the forecast of demand and supply of human resources in the organisation at a future date.

Ans to Q No 5: Nobel Laureate W.W. Leontief developed the input output model.

Ans to Q No 6: The basic idea used in the input output analysis is quite simple to understand. The inputs of one industry are nothing but the outputs of some other industries and vice versa, ultimately their mutual relationship must bring about equilibrium between the demand and supply in the economy.

Ans to Q No 7: In the studies of cost-quality and education-labour-earnings relationships input-output approach is used. The role of input-output analysis is to optimise the cost of education in order to ensure a certain quality of education.

Ans to Q No 8: a) Inter-industry relations or inter- industry flows

b) Walrasian concept of equilibrium and Keynesian concept of equilibrium

Ans to Q No 9: The different manpower requirement approaches are rules of the thumb, employer's estimates of future manpower requirements, structural approach, manpower: population ratios and Mediterranean Regional Project (MRP) technique.

Ans to Q No 10: Input-output analysis model describes the interdependent relationships between industrial sectors within an economy. It shows how the outputs of one sector flow into another sector as inputs.



8.11 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: Define Manpower Planning. What are the objectives of manpower planning in an organisation?

Q 2: What is the importance of manpower planning?

Q 3: What are the assumptions involved in the input-output model analysis?

Q 4: What is the role played by the manpower planning approach in educational planning?

Q 5: Why input output model is also known as Inter-industry relations or inter-industry flows?

B) Long questions (Answer each question in about 300-350 words)

Q 1: Explain the steps involved in the manpower planning process.

Q 2: Explain the different approaches of the manpower requirement model.

Q 3: Discuss in brief about the input-output model analysis.

Q 4: Explain the role of input output analysis in the field of economics of education.

Q 5: Discuss about the role of educational planning in a developing country like India.

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UNIT 9 : ROLE OF PUBLIC AND PRIVATE SECTORS IN EDUCATION

UNIT STRUCTURE

9.1 Learning Objectives

9.2 Introduction

9.3 Role of Public Sector in Education

9.4 Role of Private Sector in Education

9.5 Public Private Partnership in Education

9.6 Let Us Sum Up

9.7 Further Reading

9.8 Answers to Check Your Progress

9.9 Model Questions

9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- describe the role of public sector in education
- explain the role of private sector in education
- discuss the role of public private partnership in education.

9.2 INTRODUCTION

We know that education is a determining factor for growth and development of a nation. A nation's identity rests on what kind human resource it has, which in turn, depends on its quality of education. Since India is a growing economy with a lot of emphasis on knowledge, educational development has become rather more important. For positioning the young population of India in the picture of global economy, equal access to quality education is a must. In India, though it was realised that investment in education is necessary for national development, the necessity to invest in 'quality education' was realised very late. Here, a question arises as who is responsible for making the provision of quality education in our country? In India, the state or the government is responsible to ensure education for its

citizen. In 1990s, Liberalisation, Privatisation and Globalisation (LPG) affected the education sector as it affected the whole economy. Thus, in contemporary times, both the public and private sectors play important roles in the education sector. In this unit, you will find discussion and critical analysis of the role played by public and private sectors in education. The present economy follows the public private partnership model to a large extent. So, the viability and effectiveness of public private partnership model in education is also discussed.

9.3 ROLE OF PUBLIC SECTOR IN EDUCATION

First of all, we need to understand what does public sector means. Here, public sector refers to the State or the government. So, while discussing the role of public sector in education, we have to discuss what role the government plays for the development of education. Schools that are funded by tax and/or non-tax revenues generated by the State and administered (i.e. 'managed' or 'run') by the State are called public schools. Now, again a question arises, government refers to which government —state government or central government, i.e. which one holds the responsibility of running educational institutions. After independence, the Indian Constitution bestowed the responsibility of education to the state government. In the year 1976, education was transferred from the state to the concurrent list in the Constitution, making it the responsibility of both central and state governments. At the central level, the Ministry of Human Resource Development – now Ministry of Education is entrusted with the responsibility of education. The main functions of the Ministry of Education are framing the educational policies, and executing the policies and ensuring uniformity in the method of education in various states. The Ministry also allocates available funds to different states in order to help them to discharge their educational obligations for the development of education. At the state level, the Department of Education looks after the education sector.

As of now, government holds the responsibility of providing education at all stages and across various branches– general as well as

technical. This responsibility includes managing, financing and regulating the Institutions together with making and implementing policies for their development. Let us now look into what are the different roles played by the public sector in the field of education.

- **Constitutional Role:** The Constitution of India has a number of provisions for education. Through the constitutional provisions, the state ensures that appropriate and adequate rules and regulations are formulated for education.

  The 86th amendment (2002) in the Constitution of India made elementary education a right of every child in the age group of 6-14 years through Article 21-A. The fundamental right to education, enshrined in the Constitution, was followed by the Right of Children to Free and Compulsory Education (RTE) Act, 2009, which came into effect from 1 April 2010. Article 45 is a directive principle stating that the State shall endeavour to provide Early Childhood Care and Education to all children until six years of age. Article 30 of the Indian Constitution relates to certain cultural and educational rights to establish and administer educational institutions. Article 15, 17 and 46 safeguard the educational interest of the weaker sections of the Indian community viz. socially and educationally backward classes and scheduled castes and scheduled tribes. Article 28(1), 28(2) and 28(3) are for religious instructions in educational institutions. Article 30 is related to granting aid to educational institution. Article 29(1) relates to equality of opportunity in educational institutions. Article 350A provides for adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups. Parliament has the exclusive rights to enact legislation with respect to institutions and Union Agencies mentioned in entries 63, 64, 65, and 66 of List. Under entry 66 of List I of the Indian Constitution, the central government is required to coordinate and maintain standards in University education. Thus, you can see that the state takes care of education through various provisions in the Constitution.

- **Administrative Role:** The government plays an important role in the administration of education. The administrative structure of education in India is decentralised. At the central level, Ministry of Education, erstwhile the Ministry of Human Resource Development (MHRD) is the apex body. It functions in two departments—Department of School Education and Literacy, and Department of Higher Education. The former department is further divided into two categories—Elementary Education & Secondary Education and Adult Education. Under the Department of Higher Education, there are six sub-categories viz. University and Higher Education, Technical Education, Book Promotion and Copy Right, Scholarships, Languages and Minority Education. The MHRD is headed by a cabinet minister followed by two state ministers (one each for School Education & Literacy and Higher Education). A number of secretaries are also appointed by the ministry for administrative purpose.

  At the state level, Department of Education is the apex body. The department of education of a particular state consists of a cabinet minister followed by a state minister. The state governments also formulate policies for education. There is also provision of acts and bills in the state legislature. These are brought whenever necessary.

  Apart from this, the Statutory Councils and Apex Bodies (established by the state governments or by the central government) play important roles in reforming the education system of the country. They are responsible for recognition of courses, promotion of professional institutions and providing grants to undergraduate and post-graduate programmes and various awards. Some important National Councils of the country are—All India Council for Technical Education (AICTE), National Council for Teacher Education (NCTE), Indian Council for Agriculture Research (ICAR), Medical Council of India (MCI), Indian Nursing Council (INC), etc.

  In the educational institutes, governing bodies have been set up for smooth functioning of the institutes. The Governing body is

responsible for various matters related to the administration of the institution and it takes decision in this regard. In recent days, the roles and responsibilities of the governing boards are becoming more complex. The members of the governing body are taken either from various organisations of the society or from local administration or state or central administration.

The government provides pre-school programmes through Anganwadi Centres and pre-schools attached to government schools. The Anganwadi Centres run under the Integrated Child Development Scheme (ICDS) which was initiated in the year 1975. These are, therefore, under the Department of Social Welfare of the respective states.

At the Centre, the National Council for Educational Research and Training (NCERT) is the apex body for school education. It gives support and specialised help to schools and supervises various parts of requirement of training. At state level, it is done by the State Council for Educational Research and Training (SCERT). The government provides school education, i.e., from Class 1 to 12 through different schools established and run by government. It includes elementary and secondary stages of education. It runs primary schools, middle schools, high/secondary schools and higher secondary schools. For the management of elementary education, the government of India emphasises on decentralisation. For this, direct community involvement in the form of Village Education Committees (VECs) has been encouraged. As a result of decentralisation, Panchayati Raj Institutions (PRIs) have become pivotal in the delivery of education in rural and urban communities. The school education is one of the delegated subjects of the Panchayats as per the 11th Schedule of the Indian Constitution.

- **Financial Role:** Public expenditure (revenue and capital) includes government spending on educational institutions (both public and private) and educational administration as well as subsidies for private entities (students, households and other privates entities).

India spends, on an average, 4.6 percent of its total GDP on education. There is a call from the experts to raise the education expenditure to 6 percent of the GDP, which is also in sync with Niti Aayog's target to improve education quality in India. In the Financial Year 2019-20, the Union Finance Ministry had allocated around Rs. 94,000 crore for education. In 2012, expenditure in pre-primary education for India was 1.2 percent. The scheme is funded by central and the state governments in the ratio 90:10 for general assistance and 90:10 for supplementary nutrition for all states of NE region. Expenditure on primary education (% of government expenditure on education) in India was 28.40 as of 2013. Its highest value over the past 14 years was 37.56 in 2000, while its lowest value was 25.21 in 2010. Expenditure on tertiary education (% of government expenditure on education) in India was 28.53 as of 2013. Its highest value over the past 14 years was 36.45 in 2009, while its lowest value was 17.54 in 1999. (Source: UNESCO Institute for Statistics http://uis.unesco.org).

Another way in which the public sector invests in education is through sponsorships. The Central Government partially or fully sponsors schemes financed by it but implemented by the States.

- **Regulatory Role:** Another important role of public sector is to regulate the quality of education. Central Government performs regulatory functions through NCERT (for school education), University Grants Commission (UGC) (for higher education), etc. The quality of pre-primary education is one of the critical issues. To review and monitor the delivery of services at Anaganwadi Centres, the Governor of Assam constituted the Anganwadi Level Monitoring and Support Committees under the Integrated Child Development Services (ICDS). Besides, there are Central Board of Secondary Education (CBSE), Indian Certificate of Secondary Education (ICSE) or State Boards which gives affiliations to schools and through this process maintains the standard. The UGC has powers regarding the recognition, functioning and de-recognition of universities. It also

has power of disbursing grants to universities and colleges for their maintenance and development, and in regulating fees. Institutions offering technical courses such as engineering, management, etc. and receiving funding from All India Council for Technical Education (AICTE), are required to comply with its academic standards and regulations. Likewise, Indian Council for Medical Research (ICMR) is responsible for maintaining the standard of medical education while National Council for Teacher Education (NCTE) is responsible for regulating teacher education.

- **Policy-making and Initiatives:** To run the education sector smoothly, the governments also play the role of policy-making agency and takes initiatives for their implementation. In 2013, Government of India adopted the National Early Childhood Care and Education Policy which lays out the vision for children below the age of six years. The Govt. of India has also adopted the Sustainable Development Goals (SDGs). The Goal 4.2 of SDG is to ensure that all girls and boys have access to quality early childhood development, care and pre-primary education by 2030.

  Universalisation of education has been the main goal of government since independence. Several efforts have been put forward from time to time to achieve this goal. The first ever attempt at drafting an educational policy was made in 1968 taking in the recommendations of the Kothari Commission, 1964-66. The New Policy on Education (NPE), which was introduced in 1986, and the National Curriculum Framework (NCF) ushered in education reforms and new institutions. The efforts were intensified in the 1990s through various schemes to improve school enrolment, reduce gender and other inequities as also drop-out rates. The Program of Action of the National Policy on Education (1986) recognised the importance of elementary education. Efforts were also made through non-formal education to universalise education. In 1988, National Literacy Mission was launched, under which Total Literacy Campaign and Post Literacy Campaigns were undertaken to achieve the goal. Residential

education of girls, especially the Kasturba Gandhi Shiksha Yojana, has been launched for girls' education. These funding come from the central government. Apart from this, some financial incentives and scholarships for poor girls have also been provided. The Operation Blackboard was launched to improve the environment in schools by providing basic facilities. The District Primary Education Program (DPEP) is a major program to implement UEE which aims to provide all children with access to primary education; to reduce differences in enrolment, dropout rates, and learning achievement; to reduce overall primary dropout rates; to raise average achievement levels by at least 25 percent over measured baseline levels; to ensure achievements of basic literacy and numeric competencies. The DPEP is funded by the central and state governments in the ratio of 85:15. The DPEP has been implemented in phases in different states beginning with 42 districts in the states including Assam. Another radical programme by the government to support UEE is National Program of Nutritional Support to Primary Education (School Meal Program), launched in 1997 to 1998. It provides a free, nutritious cooked meal of 100 grams of food grains per school day to all children in Classes I-V.

In 1993, the Supreme Court recognised that the right to education was a fundamental right as it was an inherent part of the right to life. The central government initiated the programme named Sarva Shiksha Abhiyan (SSA) in 2000. It aimed at enrolment of all children in school, bringing out-of-school children to school, retention of children at upper-primary level, and enhancement in learning achievement of students. Several other programmes outside the ambit of the erstwhile Ministry of Human Resource Development (MHRD), including the Mid-day Meal Scheme (MDM) and pre-primary education under Integrated Child Development Services (ICDS), were introduced to support child education. Recently, efforts have been made to streamline the entire education system by bringing the entire school education system under one umbrella—Samagra

Siksha Abhiyan. Also, a much needed National Education Policy 2020 has also been adopted.

Other important roles played by the central government are maintaining educational and cultural relations with other countries; collecting and broadcasting ideas and information; coordinating the educational activities of the centre and the states; preservation and promotion of national culture inclusive of patronage to national art; patronage to the study of ancient Indian culture; education of the handicapped; promoting and coordinating educational research; strengthening national unity; granting of scholarships; maintaining Central Institutions or agencies for education, etc. Thus, we can see that public sector plays a major role in education.



CHECK YOUR PROGRESS

Q 1: What does public sector mean? (Answer in about 10 words)

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Q 2: Make a list of constitutional provisions related to education. (Answer in about 20 words)

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Q 3: Mention any two initiatives taken by govt. of India for Universalisation of Elementary Education (UEE). (Answer in about 30 words)

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Q 4: Which agency/organisation mainly regulates the quality of higher (university) education?

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9.4 ROLE OF PRIVATE SECTOR IN EDUCATION

You may have seen that private sector also contributes significantly to the economy of our country. It plays a significant role in education as well. Private institutions may be government-aided or entirely unaided (self-funded). Among the private administrators of educational institutions, religious organisations have been actively promoting the cause of education. Apart from this, individuals, trusts and even some corporate houses are also involved in providing education. Some popular corporate houses having educational establishments are the Tatas, Birlas, the Reliance group, etc. Earlier, private sector was mainly involved in providing school education. However, with the liberalisation policies of the government, we can find schools, colleges and even universities and other educational institutions providing general education and professional education. Private educational institutions may run in the following ways—

- Educational institutions that receive government grant-in-aid but are privately run.
- Educational institutions that receive little government funding but are recognised based on certain criterion outlined by the government and must follow certain regulations.
- Educational institutions that are unrecognised and might not meet the criteria (such as infrastructure or teacher salaries) needed for recognition.

The private sector contributes towards educational development in many ways. Some of the important roles of private sector in education are pointed below—

- **Complementing Financial Investment:** India, being a diverse and developing country, faces a lot of challenges to achieve the goal of universal access to education. So, private organisations are expected to invest in education. The government has limited resources to provide universal access to education. Thus, the private sector plays a complementary role in terms of investment in education. Though private sector is characterised by a profit-motive, but in

case of education, it has to function on a not-for-profit basis. The Supreme Court had ruled that educational institutions are permitted to maintain a 'reasonable surplus to meet the cost of expansion and augmentation of facilities', but they are to be regulated.

- **Ensuring Equitable Access to Education:** It is very difficult for the government to cover the entire population under the umbrella of education, particularly due to the diversity that is prevalent. But universal access to education has been an aim of the government since independence. Private sector can help in this regard. The private educational institutions make education accessible to those sections of people, who are deprived of their due. Private bodies are able to make tailored education available. In private institutions, people have more choices of variety, whereas, government institutions provide more or less the same kind of facilities and provisions.
- **Maintaining Quality:** Establishment of private educational institutions creates an environment of competition in regard to quality of education. The private sector can compete for students with the public sector. In order to attract more students, the private institutions always try to raise the quality of education. As a result, other institutions also compete in terms of quality. Also, the public institutions have to compete with the private institutions, for which they are directed towards maintaining the quality of education.
- **Meeting Differentiated Demands of Specific Groups:** The Constitution of India has such provisions which let various organisations, for instance religious organisations, to tailor education based on their philosophy. However, the basic rules and regulations are to be followed. For example, private educational institutions are run by Christian missionaries, Arya Samaj, Ramakrishna Mission, Khalsa group, Sankaradeva Sangha, etc. They have the liberty to design the programmes, curriculum, teaching-learning method based on their own philosophy, while conforming to the overall guidelines and the core framework.

There are currently many private schools in India offering quality early childhood education, functioning either in stand alone mode or franchises. Euro Kids, Kidzee, Podar Jumbo Kids, Kangaroo Kids, Montessori schools, Pratham (non-profit), Akanksha Foundations (non-profit), Safari Kids, etc. are some private organisations offering pre-primary education. Some NGOs perform a complementary role in providing ECCE programs in areas where the government cannot reach, while some others are working in the spirit of entrepreneurship to improve the quality of ECCE provided by the government.

Likewise, we find many schools which are run either by some individuals, organisations or trusts. For example, Delhi Public School, Vivekananda Kendra Vidyalaya, Don Bosco School, etc. are some of the popular private schools in India.

A private university should be run by and/or must be a trust, society or not for profit entity. Generally, private university may be set up through an Act of Parliament (Central University) or an Act of a State Legislature (State University). Till date, no private university has been set up through an Act of Parliament. Currently, there are 356 private universities in India which are established by an Act of a State Legislature recognised by UGC (as on 1st June 2020). You may access the state-wise list of private universities in India in the UGC's website. While these universities are not dependent on government funding, they need to follow the rules, regulations and norms as mandated by government agencies with regard to many issues like admission policies, reservations in admissions, fixing the levels of tuition fees, qualifications and compensation packages of faculty and staff as well as the provision of infrastructure.

Thus, we can understand that private sector has obvious and profound roles to play in the field of education.



CHECK YOUR PROGRESS

Q 5: Write how private institutions pose competition in overall education. (Answer in about 30 words)

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Q 6: How are private universities established in India? (Answer in about 20 words)

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9.5 PUBLIC PRIVATE PARTNERSHIP IN EDUCATION

After the economic reform, along with the world, India also changed its policies in the light of globalisation. After the Liberalisation, Globalisation and Privatisation (LPG), many changes have been seen in Indian education sector. A major change entails initiation of Public Private Partnership (PPP) model in education. Public Private Partnership can be defined as a contractual relationship between government and private sector for a specific project, with simultaneous and well-defined involvement of government and private sectors with an understanding to share the costs, benefits, risks and rewards. Under PPP, public sector agencies (central, state, or local) join with private sector entities (companies, foundations, non-governmental organisations, academic institutions or citizens) and enter into a relationship to attain a commonly shared goal. Each party has a clear role and say in the execution process. Depending on the arrangements, PPPs can be funded by private or public agencies, and partnerships can be based on financial arrangements, experience and knowledge, or on market-based solutions or even through the provision of technical assistance. In these types of PPPs, the public sector maintains control and oversees the services while incorporating the private sector, which may enhance sustainability and quality of projects.

There are different models of PPPs, even for education. PPP plays an important role in the field of education. However, PPP in education is still at the nascent stage in India. Look at these points which show the role played by public private partnership in education.

- **Providing Flexibility**: Generally, the public sector gives schools very little flexibility in hiring teachers and organising schools, so a flexible PPP contract can make it possible for schools to create a better fit between supply and demand. Flexibility in teacher recruitment is one of the primary motivations for PPPs. Also, private schools can give their administrators more budgetary freedom, which may lead to a more efficient allocation of resources.
- **Maintaining Quality with Low Cost:** Private providers in PPP contracts are usually chosen through an open bidding process based on quality and cost criteria. The government defines specific requirements for the quality of education that it demands from the contractor. The contracts often include measurable outcomes (such as test scores and dropout rates) and clauses that specify the condition to deliver a certain quality of education, and the contractor with the best or lowest cost proposal is then chosen. Thus, it helps in bringing quality to the education sector in general. Outcomes are critical variables to measure in awarding these contracts.
- **Sharing Risk:** Here, sharing risk refers that the risk in the business is shared by both the parties, i.e. the public as well as private sector. This risk sharing is likely to increase efficiency in the delivery of services. As a result, it induces the channelling of additional resources to the provision for education. Measuring the optimal level of risk-sharing is not straightforward. Financial indicators such as revenue-to-cost ratio, revenue-to-student ratio, and cost-to-student ratio can be used to measure risk-sharing. In short, to ascertain different risk-sharing options, it is first necessary to examine quantifiable financial indicators. Thus, public private partnership model in education plays the role of sharing the risk.

- **Complementing Each Other:** Collaboration between public and private sectors makes the journey towards achieving the objectives more easy. When a PPP is implemented correctly, it can increase efficiency and choice and expand access to education services, particularly for people that tend to be poorly served by traditional delivery methods. PPPs also allows governments to take advantage of the specialised skills offered by certain private organisations and to overcome operating restrictions such as inflexible salary and work rules that may prevail in the public sector.



9.6 LET US SUM UP

- Education is a determining factor for growth and development of a nation. For positioning the young population of India in the picture of global economy, equal access to quality education is a must.
- In India, though it was realised that investment in education is necessary for national development, the necessity to invest in 'quality education' was realised rather late.
- The State is responsible to ensure education for its citizen. In 1990s, LPG affected the education sector as it affected the whole economy. So, both the public and private sectors play important roles in the education sector.
- Schools that are funded by revenues generated by the State and administered ('managed', 'run') by the State are called public schools.
- Education is under concurrent list in the Constitution; therefore, it is the responsibility of both central and state governments. At the central level, the Ministry of Education, earlier Ministry of Human Resource Development is entrusted with the responsibility of education. At the state level, the Department of Education looks after the education sector.
- This responsibility of the government includes policy making as well as managing, financing and regulating the overall education sector.

- The Constitution of India has a number of provisions for education. Through the constitutional provisions, the State ensures that appropriate and adequate rules and regulations are maintained for education. The administrative structure of education in India is decentralised.
- Besides, the Statutory Councils and Apex Bodies (established by Central or State governments) are responsible for recognition of courses, promotion of professional institutions and providing grants to undergraduate and post-graduate programmes etc.
- The government provides pre-school programmes through Anganwadi Centres and pre-schools attached to government schools which are under the Department of Social Welfare of the State.
- At the central level, the NCERT gives support and specialised help to schools and supervises numerous parts of requirement of training arrangements. At state level, it is done by the SCERT.
- Direct community involvement in the form of Village Education Committees (VECs) has been encouraged for decentralised administration of elementary education.
- India spends 4.6% of its total GDP on education. In 2013, expenditure on primary education in India was 28.40 and on tertiary education was 28.53. Another way in which the public sector invests in education is through sponsorships.
- Another important role of public sector is to regulate the quality of education. These regulatory functions are done through agencies like NCERT, UGC, Anganwadi Level Monitoring and Support Committees, CBSE, ICSE, State Boards, AICTE, ICMR, NCTE, etc.
- The govt. plays the role of policy-making agency and also takes initiatives for their implementation. Some of the important policies and initiatives are National Early Childhood Care and Education Policy, National Policy on Education (1986), National Literacy Mission, Kasturba Gandhi Shiksha Yojana, Operation Blackboard, District Primary Education Program (DPEP), National Program of Nutritional Support to Primary Education.

- Private sector too plays a significant role in education. Private institutions may be government-aided or entirely unaided (self-funded). Religious organisations, individuals, trusts and corporate houses are involved in providing education.
- The government has limited resources to provide universal access to education. Thus, the private sector plays a complementary role in terms of investment in education.
- The private educational institutions make education accessible to those sections of people, who are deprived of their due. Private bodies are able to make tailored education available.
- Establishment of private educational institutions creates an environment of competition in regard to quality of education.
- The Constitution of India has such provisions which let various organisations, for instance religious organisations, to tailor education based on their philosophy.
- Public Private Partnership can be defined as a contractual relationship between government and private sector for a specific project, with simultaneous involvement of government and private sectors, with an understanding to share the costs, benefits, risks and rewards.
- PPP plays an important role in the field of education. However, unlike other areas, it is yet to flourish in the field of education.
- Generally, the public sector gives schools very little flexibility in hiring teachers and organising schools, so a flexible PPP contract can make it possible for schools to create a better fit between supply and demand.
- PPP helps in taking the quality of education to higher level. Outcomes are critical variables to measure in awarding contracts through open bidding.
- Sharing risk refers that the risk in the business is shared by both the parties, i.e. the public as well as private sector. This risk sharing is likely to increase efficiency in the delivery of services. Public private partnership model in education plays the role of sharing the risk.

- Collaboration makes the journey towards achieving the objectives more easy. PPP model allows for compensating the limitations of the either party.
- Thus, in this unit, we have come to know about the role played by the government which is referred as public sector, the private sector and both private and public sector in partnership in the field of education.



9.7 FURTHER READING

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5) Tiwari, R., Anjum, B & Khurana, A. (2013). Role of Private Sector in Indian Higher Education. Galaxy International Interdisciplinary Research Journal**.** Vol.1 (2). Retrieved from https://www.researchgate.net/publication/329072379



9.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Public sector refers to the state or the government.

Ans to Q No 2: Articles 15, 17, 21-A, 28(1), 28(2), 28(3), 29(1), 30, 45,

46, 350A, and Entries 63, 64, 65, and 66 of List I.

Ans to Q No 3: District Primary Education Program (DPEP) and National Program of Nutritional Support to Primary Education (School Meal Program) are two initiatives taken by govt. of India for Universalisation of Elementary Education.

Ans to Q No 4: University Grants Commission (UGC) mainly regulates higher education.

Ans to Q No 5: The private sector competes for students with the public sector. In order to attract more students, the private institutions always try to raise the quality of education. As a result, other institutions also compete in terms of quality.

Ans to Q No 6: Private university may be set up through an Act of Parliament (central university) or an Act of a State Legislature (state university).



9.10 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: How does private sector help in ensuring equitable access to education?

Q 2: What is the contribution of private sector in financial investment in education?

Q 3: Briefly explain the role of PPP in placing education in the global market.

B) Long Questions (Answer each question in about 300-500 words)

Q 1: Enlist the constitutional provisions on education in India. How do these provisions help towards development of education?

Q 2: Make a critical appraisal of the role played by the private sector in maintaining or raising the standard of education.

Q 3: Enlist the various initiatives taken by the government of India for the development of education.

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UNIT 10 : ECONOMICS OF HEALTH-I

UNIT STRUCTURE

10.1 Learning Objectives

10.2 Introduction

10.3 Nature and Scope of Health Economics

- 10.3.1 Meaning and Definition
- 10.3.2 Scope of Health Economics

10.4 Health and Development

- 10.4.1 Meaning and Definition
- 10.4.2 Interrelationship between Health and Development

10.5 Health and Productivity

10.6 Determinants of Health Status

10.7 Disease Burden and its Measurement

- 10.7.1 Measurement of Disease Burden

10.8 Global Burden of Disease

10.9 Let Us Sum Up

10.10 Further Reading

10.11 Answers to Check Your Progress

10.12 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- describe Health Economics
- define the key concepts of Health Economics
- identify the correlation between Health and Development
- explain the losses due to ill health.

10.2 INTRODUCTION

Study of Health Economics becomes important as the cost of healthcare has increase rapidly in recent times. Within the subject of economics, health economics has emerged as a distinct branch. With

the rapid growth of population, the healthcare market not only expands but also becomes complicated as government's spending on health sector proportionately shrinks. So, proper understanding of the functioning of healthcare market would empower the students to deal with various problems in future.

10.3 NATURE AND SCOPE OF HEALTH ECONOMICS

Health Economics is the branch which is concerned mainly with health related issues of the society. It deals with demand and supply of healthcare services. It is related with such issues like efficiency, equity, value and behaviour in the production and consumption of health and healthcare.

10.3.1 Meaning and Definition

Health Economics is an applied field of study, where, through systematic and rigorous examinations, attempts are made to solve the problems faced in promoting health for all. Here, economic theories of consumer, producer and social choice are applied with the aim to understand the behaviour of individuals, health care providers, public and private organisations and governments in decision making. Health economists also address other health related issues like migration, climate change, displacement, vaccine access, accidents, obesity and pandemics. Kenneth Arrow developed health economics as a distinct branch in 1963. In the words of Morris and Spencer, "Health economics is the application of economic theory, models and empirical techniques to the analysis of decision-making by individuals, health care providers and governments with respect to health and health care." According to Ancy, "Health economics is the study of how scarce resources are allocated among alternative uses for the care of sickness and the promotion, maintenance and improvement of health."

10.3.2 Scope of Health Economics

The Health Economics studies the association between health status of the society and related resources. It analyses costs and benefits of health and health care. It provides information to decision makers for efficient use of available resources for maximising health benefits. The scope of health economics include eight distinct topics according to Williams-

- **Health and its Value:** It relates to the meaning of health, and the relationship between health with welfare and development.
- **Factors influencing Health:** It is concerned with determinants of health like genetic factor, occupational hazard, consumption pattern, education, income, capital, family background, etc.
- **Demand for Healthcare:** Demand for healthcare is a derived demand from demand for health. For maintaining good health people demand heath care services.
- **Supply of Healthcare:** The supply of healthcare includes cost of production, alternative production techniques, markets for inputs (manpower, equipments, drugs etc.), remuneration methods and incentives etc.
- **Micro Economic Evaluation:** Health microeconomics is concerned with how individuals choose, minimise costs or maximise utilities within a given healthcare system with a set of given rules and prices.
- **Market Equilibrium:** It deals the ways in which markets in health sector operates.
- **Evaluation at the Whole System Level:** It deals with equity and allocative efficiency criteria, inter-regional and international comparison of performance, financing method etc.
- **Planning, Budgeting and Monitoring Mechanism:** Here, the main concerns are evaluation of effectiveness of instruments available for optimising the system, interplay of budgeting, manpower allocations, regulation, the incentive structures etc.



CHECK YOUR PROGRESS

Q 1: State whether True (T) or False (F)

i. Health economics is still not a distinct branch. (T/ F)

ii. Study of association between health status and related resources is health economics. (T/ F)

iii. Demand for healthcare is a derived demand. (T/ F)

Q 2: Define health economics? (Answer in about 50 words)

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Q 3: State the scope of health economics. (Answer in about 50 words)

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10.4 HEALTH AND DEVELOPMENT

There is positive correlation between health and economic development. Health is one of the most significant determinants of development of a country. Development is profoundly related with the health condition of the people of the country. A country which has a healthy labour force has the ability and capability to undertake the tasks of expediting the economic growth and achieve development.

10.4.1 Meaning and Definition

Development means increase in the standards of living of a country's population in a sustainable way. It is related with the improvement in well-beings of its people. According to Prof. Thirwal, "We can say that development has occurred when there has been an improvement in basic needs, when economic progress

has contributed to a greater sense of self-esteem for the country and individuals within it, and when material advancement has extended the range of choices of individual." Again, health means both physical and mental wellbeing. Physical wellbeing reduces the risk of disease and/or injury. Mental health is the wellbeing of a person's emotional, social and psychological status. Sound mental health not only means the absence of depression, anxiety or other disorders, but also includes a situation of enhancing ability to enjoy life, capacity to bounce back after difficult experiences, adapt to adversity, feel safe and secure; and achieve one's goals according to their potential. The WHO, thus, defines health as a 'state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'.

10.4.2 Interrelationship between Health and Development

Health is wealth. A healthy population is a prerequisite for successful development. Health is both end and means of development. It is one of the important determinants of development, and at the same time, the development economists regard health condition of the people as one of the important ends of all development efforts. A country with healthy and efficient labour force can easily undertake development projects. The countries making significant investment in health sector are creating a healthy labour force, thereby, achieving growth and development. On the other hand, countries making insufficient and unplanned investment in health sector are facing frequent outbreak of epidemics and deaths, which seriously retard their growth potentials. Similarly, achieving good health status is one important objective of development. Moreover, economic prosperity promotes better health. Rise in income lead to consumption of more calories and nutrition. Well nourished individuals are in a better position to resist various diseases and have more prospects of recovering from illness.

There is an inter-linkage between health performance and economic performance. Good health plays a great role in economic growth as healthy people live long, produce more and save more. Health can contribute economic growth both directly as well as indirectly. Health can boost growth directly by raising productivity of the labour. Healthy labours are required to take less leave due to illness and can concentrate on work more. It leads to increase in productivity in the economy. Improvements in health lead to an increase in per capita income directly as each individual is able to produce more per unit of output. Similarly, health can influence economic growth indirectly through its incentive effect on education investment. The healthier individuals are expected to live longer and so they are encouraged to invest more on education as their time horizon over which returns to education can be enjoyed in the form of higher skill wages is extended. Health also affects child's education and future income. In a healthy family both parents could hold job, earn more and send their children to better schools. Healthy and well nourished children perform better in schools which will positively impact their future prospects and income. Health contributes to economic growth by lowering fertility. If parents are ensured that their children have a high probability of reaching adulthood and earning more, they will have fewer children and would be able to invest more in their health and education.

The relationship between health and income is known as the 'Preston curve'. This shows health and income are positively correlated. Countries with better health status tend to have higher incomes than countries with worse health status.



CHECK YOUR PROGRESS

Q 4: State whether True (T) or False (F)

i. Health is one significant determinants of development of a country. (T/ F)

ii. Healthy labour promotes production. (T/ F)

iii. Economic development is possible without investment in health. (T/ F)

Q 5: How does health contribute to development. (Answer in about 40 words)

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Q 6: What is meant by Preston curve? (Answer in about 40 words)

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10.5 HEALTH AND PRODUCTIVITY

Productivity is the measure of economic performance that indicates how efficiently inputs are converted into outputs. Well nourished, healthy, educated and skilful people are considered as "human capital" signifying their instrumental role in the economic growth. For enhancement of productivity of an economy, human capital is considered as most significant determinant. Traditionally, human capital has been defined with education and skill, but recently increasing attention has been given to aspects of health in defining human capital. Productivity of a person indicates his efficiency. Health influences productivity of workers and of the economy. Investment in health of the workers improves their health conditions and prevents disability and serious illness. It increases the quality of life of the employees, which in turn positively influences their productivity. Also, better health positively impacts labour supply through a longer life expectancy. Healthier individuals can produce more outputs per hour worked. It is already stated that longer life span encourages individuals to undertake more education and acquire skills. It enhances their productivity at the individual level. Similarly, healthy people are more willing to make investments which in turn promote growth and productivity of the economy.

The productivity differences due to health have the impact on earnings. Healthier workers are physically and mentally more energetic, hence more productive. Healthier people earn higher wages than those men whose health status makes them likely to lose days of work per month because of illness. The higher productivity of healthier workers allows them to get better paying jobs. Conversely, higher wages are used in part to purchase better healthcare services.

The poor health conditions in developing countries harm the productivity of adults. Due to poor environment in both workplace and at residence the workers frequently fall victim of illness. Since, healthcare system is neither adequate in comparison to population size nor sophisticated, the recovery from disease takes more time resulting is productivity loss. Ill health may leave persons able to work, but reduce their productivity and shorten their working lives. Poor health increases the number of days lost to illness as more proportion of people engage in manual work.



CHECK YOUR PROGRESS

Q 7: State whether True (T) or False (F)

i. Health does not influence productivity. (T/ F)

ii. Health status and income earning is not related. (T/ F)

iii. Better health positively impacts labour supply. (T/ F)

Q 8: How does health influence productivity? (Answer in about 40 words)

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Q 9: Briefly explain the relation between health and earning. (Answer in about 40 words)

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10.6 DETERMINANTS OF HEALTH STATUS

Determinants of health indicate those factors which have significant influence on health either positive or negative. At individual level, health status means a person's relative level of wellness and illness. It is affected by biological and behavioural factors that influence risk of a disease or vulnerability to injury. On the other hand, social health status indicates relative wellness of the people of a society. The socio-cultural, economic and ecological factors influence the social health. The conditions in which people are born, grow, live, work and the level of income and their age structure determines social health. Broadly, the determinants of health status are classified into five categories. They are-nutrition, lifestyle, environment, genetics and medical care. When anyone of the first four determinants becomes weak then the fifth determinant works as a support system.

- **Nutrition:** It is one important determinant of health status. It has individual, family and community dimensions. Poor nutrition weakens the body's defences against infections. Infection, in turn, weakens the efficiency of absorption of nutrients. People belonging to the lower stratum of socio-economic status typically suffer from calorie deficiency, protein malnutrition and undernourishment. Similarly, abundant of food also invites many diseases. Among the richer section of people, poor nutrition is results from the habit of junk foods consumption. Diet has cumulative effects on health.
- **Lifestyle:** Lifestyle includes day to day behaviour and functions of individuals in jobs, activities, fun and diet. Lifestyle has significant influence on physical and mental health of people. Many diseases and problems like metabolic diseases, joint and skeleton problems, cardio-vascular diseases, hyper tension, over-weight, violence and so on are attributed to bad lifestyle.
- **Environment:** The degraded ecosystems and polluted environment lead to several disorders and diseases. Urban communities face problems related to environmental degradation, air, sound and water pollution. Rural communities face problems related to sanitation,

hygiene, insecticides, pesticides and agro-chemicals. On the other hand, clean environment increases the longevity of the people.

- **Genetics:** Some biological and genetic factors affect specific populations more than others. Many diseases like heart disease, cancer, diabetes, mental illness etc. are caused by issues with multiple genes or genetic disorders in combination with lifestyle and environmental factors.
- **Medical Care:** It includes all goods designed to promote health and services rendered by health care organisations and professions for the prevention, treatment and management of illness and preservation of health. With the help of powerful technology in medical care many diseases of genetic origin may be prevented. If medical care system of a country is advanced and easily accessible to people, the health status of the people also improves.



CHECK YOUR PROGRESS

Q 10: State whether True (T) or False (F)

i. Lifestyle influences both physical and mental health. (T/ F)

ii. Poor nutrition affects only poor people. (T/ F)

iii. Diseases of genetic origin could not be prevented. (T/ F)

Q 11: What is meant by determinants of health status? (Answer in about 40 words)

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Q 12: Briefly explain the role of medical care in health status. (Answer in about 40 words)

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10.7 DISEASE BURDEN AND ITS MEASUREMENT

Disease burden refers to the intensity or severity of a disease and its possible impact including losses of life. It indicates the total effect of a disease on an individual or on a society. It measures the impact of living with illness and injury, and dying prematurely. To formulate appropriate health policy, data relating to estimated disease burden prove to be important.

10.7.1 Measurement of Disease Burden

The burden of a particular disease is estimated by taking together the Years of Life Lost (YLL) and Years of Life Lived with Disability (YLD). The YLL shows the number of years of life a person loses as a consequence of dying early because of the disease. While, the YLD indicates the number of years of life a person lives with disability caused by the disease. By combining the two a single figure is calculated to estimate disease burden which is called Disability Adjusted Life Year (DALY). One DALY represents the loss of one year of life lived in full health. Disease burden can be measured by using indicators like mortality, morbidity and financial cost arising out of health issues.

- **Mortality:** It shows the number of deaths in a particular population per unit of time. It is generally expressed as the number of deaths from a disease per 1000 population in a year.
- **Morbidity:** Morbidity is a state of disability or poor health condition due to a disease. It refers to the rate of disease in a population.
- **Financial Cost:** It shows the economic consequences of disease or injury. At micro level it indicates the impact of ill health on household's income or firm's profit. At the macro level financial cost indicates aggregate impact of a disease on a country's current or future gross domestic product.



CHECK YOUR PROGRESS

Q 13: State whether True (T) or False (F)

i. Disease burden is the impact of living with disability and premature dying. (T/ F)

ii. Higher mortality and morbidity leads to higher burden of disease. (T/F)

iii. Morbidity shows the number of deaths in a particular population. (T/F)

Q 14: What does DALY represent? (Answer in about 40 words)

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Q 15: What is meant by financial cost of disease burden? (Answer in about 40 words)

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10.8 GLOBAL BURDEN OF DISEASE

The Global Burden of Disease (GBD) represents a comprehensive regional and global assessment of mortality and disability from major diseases, injuries and risk factors. The GBD is important from public health perspective. The purpose of the GBD calculation is to provide comprehensive health data on diagnoses and trends that are comparable between countries and thereby to aid in policy decisions at global, regional and national levels. A consistent and comparative description of disease burden provides vital inputs in health decision making and planning process. The measure of GBD is important because of the following reasons–

- It prioritises actions in health and environment
- It helps in planning for preventive action

- It assists in accessing healthcare system
- It facilitates in comparing action and health gain
- It helps in identifying high risk populations
- It aids in planning for future needs
- It helps in setting priorities in health research



CHECK YOUR PROGRESS

Q 16: State whether True (T) or False (F)

i. The GBD emphasises local level disease burden. (T/ F)

ii. The GBD provides inputs in decision making and planning process related to health. (T/ F)

Q 17: State the importance of GBD.(Answer in about 40 words)

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10.9 LET US SUM UP

- Health economics is concerned mainly with health related issues of the society. It deals with demand and supply of healthcare services. It is related with such issues like efficiency, equity, value and behaviour in the production and consumption of health and healthcare.
- Health and development are positively correlated. Health is one of the most significant determinants of development of a country. Development is closely related with the health condition of the people of the nation. A country which has a healthy labour force has the ability and possibility to undertake the tasks of expediting the economic growth and achieve development.
- The poor health harms the productivity. Due to poor environment in both workplace and at residence, the workers frequently fall victim

of illness. Ill health may leave persons able to work, but reduce their productivity as well as shorten their working lives.

- Determinants of health imply those factors which have significant influence on health either positive or negative. Biological, behavioural, socio-cultural, economic and ecological factors influence health.
- Disease burden refers to the intensity or severity of a disease and its possible impact including loss of life. It indicates the total effect of a disease on an individual or on a society.
- Global Burden of Disease (GBD) represents a comprehensive regional and global assessment of mortality and disability from major diseases, injuries and risk factors. The GBD is important from public health perspective.



10.10 FURTHER READING

1) Bhattacharya, J., T. Hyde & P. TU (2014). Health Economics. London: Palgrave Macmillan

2) Hicks, L. (2014). Economics of Health and Medical Care. USA: Jones & Bartlett Learning

3) Sengupta, K. (2016). Determinants of Health Status in India. New Delhi: Springer India Pvt. Ltd.

4) Whittington, R. (2008). Introduction to Health Economics Concepts. UK: Greenflint Ltd.



10.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: i. False ii. True iii. True

Ans to Q No 2: Health Economics is that branch of which is concerned mainly with health related issues of the society. It deals with demand and supply of healthcare services. Health economics is related with such issues like efficiency, equity, value and behaviour in the production and consumption of health and healthcare.

Ans to Q No 3: The health economics studies the association between health status of the society and related resources. It analyses costs and benefits of health and health care. It provides information to decision makers for efficient use of available resources for maximising health benefits.

Ans to Q No 4: i. True ii. True iii. False

Ans to Q No 5: Health can contribute economic growth both directly and indirectly. Health can boost growth directly by raising productivity of the labour. Healthy labours are required to take less leave due to illness and can concentrate on work more. Indirectly, health can influence economic growth through education. The healthier individuals are expected to live longer; hence they are encouraged to invest more on education so that time returns to education can be enjoyed in the form of higher skill wages.

Ans to Q No 6: The relationship between health and income is known as the 'Preston curve'. This shows health and income are positively correlated. Countries with better health status tend to have higher incomes than countries with worse health status.

Ans to Q No 7: i. False ii. False iii. True

Ans to Q No 8: Health influences productivity in a number of ways. Better health positively impacts labour supply through a longer life expectancy. Healthier individuals can produce more outputs per hour worked. At the same time, longer life span encourages individuals to undertake more education and acquire skills. It enhances their productivity. Healthy people are more willing to make investments which in turn promote growth and productivity of the economy.

Ans to Q No 9: Health affects earnings through productivity. Healthier workers are physically and mentally more energetic, hence more productive. Healthier people earn higher wages than those men whose health status makes them likely to lose days of work per month because of illness. The higher productivity of healthier workers allows them to get better paying jobs. Again, higher wages

enable workers to purchase better healthcare services which in turn have impact on their productivity.

Ans to Q No 10: i. True ii. False iii. False

Ans to Q No 11: By determinants of health we mean those factors which have significant influence on health either positive or negative. Individual's health is affected by biological and behavioural factors while social health status is affected by socio-cultural, economic and ecological factors. The determinants of health status are classified into five categories-nutrition, lifestyle, environment, genetics and medical care.

Ans to Q No 12: When other determinants become weak then medical care works as a support system. With the help of powerful technology in medical care many diseases of genetic origin could be prevented. If medical care system of a country is advanced and easily accessible to people the health status also improves.

Ans to Q No 13: i. True ii. True iii. False

Ans to Q No 14: DALY is a measurement of the burden of a particular disease. By combining the together the YLL and YLD, a single figure is calculated to estimate disease burden which is called Disability Adjusted Life Year (DALY). One DALY represents the loss of one year of life lived in full health.

Ans to Q No 15: Financial cost of disease burden shows the economic consequences of disease or injury. It has both micro and macro implications. At micro level it indicates the impact of ill health on household's income or firm's profit etc. while financial cost at macro level indicates aggregate impact of a disease on a country's current or future gross domestic product.

Ans to Q No 16: i. False ii. True

Ans to Q No 17: The GBD is important from public health perspective as it provides a comprehensive regional and global assessment of mortality and disability from major diseases, injuries and risk factors. The health data provided by the GBD on diagnoses and trends are comparable between countries and thereby to aid in policy decisions at global, regional and national levels.



10.12 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: What is meant by Health Economics? On what does it focus?

Q 2: Write in brief what is disease burden? How it is measured?

Q 3: "Health affects productivity." Comment on the statement.

Q 4: What is meant by determinants of Health?

B) Easy type Questions (Answer each question in about 300-500 words)

Q 1: Discuss the nature and scope of Health Economics.

Q 2: Explain the factors affecting health status.

Q 3: Define global burden of disease. What is the importance of estimating global disease burden?

Q 4: Discuss the interrelationship between health and development.

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UNIT 11 : ECONOMICS OF HEALTH-II

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Economic Dimensions of Health Care

- 11.3.1 Meaning and Definition
- 11.3.2 Demand for Health Care
- 11.3.3 Supply of Health Care

11.4 Economics of Nutrition

- 11.4.1 Meaning and Definition
- 11.4.2 Linkages with Morbidity

11.5 Mortality and Female Education

11.6 Concept of Missing Women

11.7 Consequences of Gender Biases in Health

11.8 Let Us Sum Up

11.9 Further Reading

11.10 Answers to Check Your Progress

11.11 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to—

- discuss about various dimensions of healthcare
- define the key concepts of demand for and supply of healthcare
- identify the correlation between nutrition and health
- analyse the impact of ill health on female.

11.2 INTRODUCTION

Study of economic dimensions of health care entail understanding how the market forces namely, demand and supply operate in the sphere of health care. Besides, nutrition plays an important role in maintain good health. Understanding about nutrition is essential to create awareness

among people towards balanced food habits. Similarly, female education reduces mortality rate in a society as educated women could take care the health of herself and her children in a better way. Again, gender biases in health that exists in our society is responsible for problems like missing women, female infanticide, forced abortions etc. which have damaging as well as long lasting impact on the economy and society.

11.3 ECONOMIC DIMENSIONS OF HEALTH CARE

Health care indicates the set of services provided by a country or an organisation for the treatment of physical and mental illness. Comprehensive access to quality health care is an essential prerequisite for promoting and maintaining health. Without adequate health care, people are far more at risk of disease. Easy availability of health care helps in preventing and managing diseases, and reduces unnecessary disability and premature deaths. Access to health care improves people's quality of life by impacting their overall physical, mental and social health status.

11.3.1 Meaning and Definition

Economic principles and empirical models are applied in the analysis of decision making with respect to health care. Health economics deals with health care as a good or service that is manufactured or produced. Just as the production of any good requires inputs and environment, health care products and/or services also require certain inputs such as health care professionals, drugs, surgery materials, clinics etc. Conversion of inputs into outputs is affected by environment in which production takes place, e.g., whether the clinic is run by public or private sector. Health care resources are not enough to meet all the health care needs of the people and therefore, we have to decide which requirement should be met first, and which ones can wait. In this regard, demand for and supply of health care becomes important.

11.3.2 Demand for Health Care

The demand for health care is different from demand for general goods and services. Typically, demand for health care is a derived demand, i.e., its demand comes from demand for good health and/or requirement of treatment for ill-health. People demand health care with the objective to achieve good health or to prevent sickness. Health care provisions serve as a means for achieving a larger stock of 'health capital'. So, consumers demand health care by spending money in order to both consume and produce health. According to Michel Grossman, health care demand comes due to two reasons:

- **Health as a Consumption Commodity:** People demand health care to maintain good health. It makes the consumer feel good. As consumption good, health care directly yields satisfaction and utility to consumers.
- **Health as an Investment Commodity:** Good health ensures a qualitatively better, longer and productive life. The state of health determines the amount of time available to the consumer for productive activities. People invest in health via health care services so that in future they would be able to earn more income as return. Over time health degenerates, so investment is required to sustain health. Health care as an investment good yields satisfaction through higher productivity, higher wages and fewer sick days.

The demand for health care is guided by need rather than want. The demand for health care services is very inelastic because when people need the service then the quantity demanded does not response much to the prices. The demand analysis for medical care has peculiarities. The main purpose of studying demand for medical care is to determine the factors which affect a person's utilisation of medical services. This demand analysis is important

to identify the factors which are most influential in determining how much health care people would be willing to purchase. Demand for health care is affected by factors like age, income, education etc. With the increase in age health depreciates. People's demand for health care increases with increasing age. Demand for health care increases with person's increase in income. On the other hand, education may have a negative effect on the demand for health care, because more highly educated people are presumed to be more efficient in leading a healthy life.

11.3.2 Supply of Health Care

The supply of health care indicates the total amount of health care services available for people in a specific time period. It covers a range of areas including cost of production, alternative production techniques, markets for inputs (manpower, equipments, drugs etc.), remuneration methods and incentives etc. Suppliers and/or providers of health care include hospitals, pharmaceutical companies, medical equipment manufacturer etc. Hospitals provide health care services directly while the other two make available the inputs required to the health care production process. The costs of production for health care services involve effort, materials, financial resources, risk incurred, time and utilities consumed and opportunity forgone in production. The costs of production of health care services need to be worked out so as to determine the price of health care as well for fixing the extent of taxation and subsidies required to be provided. The supply of health care services and facilities is affected by both endogenous and exogenous factors. The important endogenous factors are availability of fund or resource with the household, government subsidy, existence of medical personnel, drugs etc. while the exogenous factors include demand for health care, availability of laboratories, blood banks etc. and existence of pharmaceutical companies.

The demand for health care and supply of it acting upon each other determine the equilibrium quantity and price of health care. Price of health care can be high if demand for health care is high in comparison to supply or due to limited supply in relation to demand for them. But market power does not always determine the equilibrium price as in many cases the health care suppliers, i.e., the hospitals are either run by government or by some non-profit making organisations. The prices are determined by the interaction of a few big players, including the government, insurance companies and pharmaceutical companies. The hospitals get prices paid by the households, insurance companies and government.



CHECK YOUR PROGRESS

Q 1: State whether True (T) or False (F)

i. Spending on health care is an investment. (T/ F)

ii. Demand for health care is inelastic in nature. (T/ F)

.iii. Price for health care is always determined by suppliers. (T/ F)

Q 2: Define demand for health care. (Answer in about 50 words)

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Q 3: Why the conventional demand-supply model does not fit well to market for health care? (Answer in about 50 words)

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11.4 ECONOMICS OF NUTRITION

Nutrition is the process of providing or obtaining the food necessary for health and growth. It is related with eating a healthy and balanced diet. There is interdependency among nutritional habits, health and public expenses. Nutrition economics focuses on this interdependency. Food and drinks provide us energy but over eating or inability to eat adequate food leads to various health related problems. While over eating and bad food habit can lead to problems of obesity, stress, blood pressure, diabetes etc. inability to eat adequately often results in malnutrition, which in turn, adversely affects individuals' productivity. Good nutrition helps in reducing the risk of disease, improving the ability to recover from and to fight against illness. Good nutrition is one which provides the body all the nutrients, vitamins and minerals required to function. Few decades back, it was generally believed that poor nutrition is the result of inadequate energy or protein intake. But, now it is apparent that protein-energy malnutrition is only one element to be addressed for good health. So, the focus has shifted towards better understanding of the influence of micronutrients such as iron, iodine, zinc, calcium, and several key vitamins on health. Economic evaluation is required to compare nutrition related costs with the health benefits which they bring in order to facilitate rational choices and decision making.

11.4.1 Meaning and Definition

Nutrition Economics is that branch of health economics which assesses the impact of nutrition on health and disease. It illustrates the health and economic aspects of specific changes in the daily nutrition and recommendations for improving nutrition through the lens of cost effectiveness. Nutrition economics helps in understanding of nutrition's impact on health outcomes and of its absolute and relative monetary effects. According to Lenoir and et.al, "Nutrition economics is defined as a discipline dedicated to researching and characterising health and economic outcomes in nutrition for the benefit of society". Thomas reviews

microeconomic data to demonstrate that nutrition is a good marker or proxy for general health status and bears a close relation to productivity and labour market outcomes.

11.4.2 Linkages with Morbidity

There is strong linkage between nutrition and morbidity. Diet has an impact on health and disease prevention. Malnutrition is the primary cause of deficiency in immunity. There exists a vicious circle between morbidity and nutrition. Poor nutritional status among children leads to an increased risk of experiencing infections with increased durations which consequently has a negative effect on their growth. Poor health condition again affects their future earnings which further hampers acquiring adequate nutrition.



CHECK YOUR PROGRESS

Q 4: State whether True (T) or False (F)

i. Poor nutrition is the result of only inadequate energy or protein intake. (T/ F)

ii. Nutrition economics helps stresses on both health outcomes and monetary effect. (T/ F)

iii. Malnutrition is the primary cause of deficiency in immunity. (T/ F)

Q 5: How is nutrition related with morbidity? (Answer in about 40 words)

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Q 6: What is Nutrition Economics? (Answer in about 40 words)

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11.5 MORTALITY AND FEMALE EDUCATION

Female education plays an important role in reducing mortality in a society. At the same time higher mortality rate affects female education. Female education produces social gains to a country by improving health and reducing fertility. Educated women could care the health of her own as well as her children's in a better way. Education creates awareness among women regarding communicable diseases, hygiene and bad impacts on health and of being frequently becoming pregnant. At the same time, education makes a woman economically independent which allows her to provide proper diet for her family. All these help to reduce the mortality. Improvement in maternal education has significantly reduced child morbidity and mortality. The study done by World Bank shows that when women gain four years more education, fertility per woman drops by roughly on births and an extra year of girl's education reduces infant mortality by 5-10 percent. Specifically, female education has the following benefits–

- **Behavioural Change:** Education changes the attitude and behaviour of women. Educated women are more confident and self-reliable.
- **Familiarity with Modern Health Care:** Educated women become easily familiar with modern medical culture. They immediately seek medical treatment when they fall ill and remain away from superstitions.
- **Information Receptivity:** Education enhances women's receptivity to new health-related information. Educated mothers are easily able to identify health care services for treatment of their own as well as their child's illness.
- **Familiarity with Modern Health Care:** Educated women become easily familiar with modern medical culture. They immediately seek medical treatment when they fall ill and remain away from superstitions.
- **Information Receptivity:** Education enhances the woman's receptivity to new health-related information. Educated mothers are easily able to identify health care services for treatment of their own as well as their child's illness.

- **Financial Accessibility:** Female education enhances their accessibility of financial resources and health insurance.



CHECK YOUR PROGRESS

Q 7: State whether True(T) or False (F)

i. Education causes behavioural change of women. (T/ F)

ii.: Education and woman's receptivity capacity to new health care is not related. (T/ F)

iii. Maternal education reduces child morbidity. (T/ F)

Q 8: How does female education benefit health through economic aspect? (Answer in 40 words)

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Q 9: What is the social gain of female education? (Answer in 40 words)

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11.6 CONCEPT OF MISSING WOMEN

The concept of 'missing women' is used to express gender bias against female children. The term 'missing women' indicates a phenomenon when there is a shortfall in the number of women in a region or country relative to the expected number of women. The concept is first introduced by Nobel Laureate Amartya Sen in 1990s. By the concept of missing women, he refers to the terrible deficit of women arising from sex bias in relative care in substantial parts of Asia and North Africa. This concept is a way to assess the cumulative impact of gender bias in mortality by estimating the additional number of females of all ages who

would have been alive if there had been equal treatment of both the sexes among the cohorts that are alive today. Those additional numbers of women are referred to as 'missing' by Amartya Sen because they had died as a result of unequal treatment in the allocation of survival related goods, care and services. By measuring the difference between actual and expected population sex-ratio, Sen had calculated the number of missing women. Actual population sex ratio is the number of females divided by the number of males in the most recent census expressed per thousand while expected population sex ratio represents the would be sex ratio given equal treatment. If the actual ratio exceeds the expected, the additional females that would have to be alive in order to equate the actual with the expected, would then be the number of 'missing women'. The phenomenon of missing women is caused by following reasons:

- **Sex Selective Abortions:** It is the practice of terminating pregnancy by determining sex of the foetus. Usually female foetus is aborted.
- **Female Infanticide:** New born female children are deliberately killed in many cases as they are regarded as burden to the family.
- **Inadequate Health Care:** There is gender bias in the society in offering health care facilities. Girl child are not considered seriously when they suffer from any disease.
- **Nutrition Deficiency:** Female child are very often neglected at home. They are not provided adequate nutrition; as a result, they die early.



CHECK YOUR PROGRESS

Q 10: State whether True (T) or False (F)

i. The concept 'missing women' expresses gender bias against female. (T/ F)

ii. Concept of 'missing women' put forwarded by Amartya Sen. (T/ F)

iii. Female infanticide is not related with missing women. (T/ F)

Q 11: How is the number of missing women calculated? (Answer in about 40 words)

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Q 12: What does the concept of missing women refer to express? (Answer in about 40 words)

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11.7 CONSEQUENCES OF GENDER BIASES IN HEALTH

Gender bias in health is defined as 'prejudices in action or treatment against a person on the basis of their sex'. It arises when patients with the same complaints are assessed, diagnosed and treated differently because of their sexes. Gender bias has damaging effect in a society. It creates complicacy in medical treatment. When equal quality of care and treatment are not provided in terms of equal gender opportunities, patient's health outcomes are bound to suffer. It is universal that women live longer than men. However, pay and pension gap excludes older women from health services and put them at higher risk of disease than men. Gender bias affects accessibility of medical care to women. Many researches across the globe reveals that when women suffer from illness, they often choose traditional healers and private practitioners in the name of privacy. This makes women more prone to disease and has the consequence of increasing mortality among them. The experts put forward the following measures to alleviate gender bias in health:

- **Recognising Gender Bias:** By recognising that there exists gender bias in health care the harm could be minimised. It is important to create awareness among patients.
- **More Research:** Conducting more research involving women would ensure alleviation of gender bias.

- **Educating Health Care Professionals:** Educating helps the professionals to be more aware about gender bias and how it manifests.
- **Preventive Policies, Regulations and Laws:** Sometimes gender bias is prevented through policies, regulations and laws making it illegal and punishable offences. For example, sex selective abortion and sex determination during the pregnancy have been made punishable offence in India and it is necessary to end such bias.



CHECK YOUR PROGRESS

Q 13: State whether True (T) or False (F)

i. Gender bias in health has damaging effect in a society. (T/ F)

ii. Women live longer than men in general. (T/ F)

iii. Recognition of gender bias in health is not the solution of eliminating the problem. (T/ F)

Q 14: What is meant by gender bias in health? (Answer in about 40 words)

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Q 15: Why do women face biases with regard to health? (Answer in about 40 words)

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11.9 LET US SUM UP

- The demand for health care services, like other goods and services not only depends on the income of the consumer and the prices but is also influenced by the costs.

- The supply of health care indicates the total amount of health care service available for purchase at any specified price in specific time period. It covers a range of areas including cost of production, alternative production techniques, medical inputs, remuneration methods and incentives etc.
- Nutrition economics is that branch of Health Economics which assesses the impact of nutrition on health and disease. It illustrates the health and economic aspects of specific changes in the daily nutrition and nutrition recommendations through the lens of cost effectiveness.
- Female education produces social gains to a country by improving health and reducing fertility. Educated women could care the health of her own as well as her children's in better way. Education creates awareness among women regarding the communicative diseases, hygiene and bad impacts on health, and on frequently becoming pregnant.
- The term missing women indicates a phenomenon when there is a shortfall in the number of women in a region or country relative to the expected number of women. The concept was first introduced by Nobel Laureate Amartya Sen in the 1990s.
- Gender bias has damaging effect in a society. It affects accessibility of medical care to women. When women suffer from illness they often choose traditional healers and private practitioners in the name of privacy. This makes women more prone to diseases and has the consequence of increasing mortality among them.



11.10 FURTHER READING

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3) Hicks, L. (2014). Economics of Health and Medical Care. USA: Jones & Bartlett Learning

4) Jacob, P. & J. Rapoport (2002). The Economics of Health and Medical Care. Massachusetts: Jones and Bartlett Publishers

5) Sengupta, K. (2016). Determinants of Health Status in India. New Delhi: Springer India Pvt. Ltd.

6) World Development Report (1993). Investing in Health. The World Bank



11.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: i. True ii. True iii. False

Ans to Q No 2: The demand for health care is a derived demand, i.e, it's demand comes from demand for good health. People demanded health care with the objective to achieve good health or to prevent sickness. This demand is guided by need rather than want.

Ans to Q No 3: Due to informational problems of households, market power by suppliers and government intervention, the market for health care is not possible to analyse through normal demand-supply market model.

Ans to Q No 4: i. False ii. True iii. True

Ans to Q No 5: There is strong linkage between nutrition and morbidity. Poor nutritional status has increased the risk of infections. MaInutrition causes deficiency in immunity which ultimate increases the chance of morbidity.

Ans to Q No 6: Nutrition economics is that branch of health economics which assesses the impact of nutrition on health and disease. It illustrates the health and economic aspects of specific changes in the daily nutrition and nutrition recommendations through the lens of cost effectiveness.

Ans to Q No 7: i. True ii. False iii. True

Ans to Q No 8: Opportunity to education makes a woman economically independent which allows her to provide proper diet for her family. She could take decision independently of availing medical treatment if she suffers or her children falls ill. All these reduces mortality.

Ans to Q No 9: Female education produces social gains in a country by improving health and reducing fertility. Educated women could care for the health of her own as well as her children in better way. Education creates awareness among women regarding the communicative diseases, hygiene and bad impacts on health, and being frequently becoming pregnant.

Ans to Q No 10: i. True ii. True iii. False

Ans to Q No 11: By measuring the difference between actual and expected population sex-ratio, the number of missing women is calculated. If the actual ratio exceeds the expected, the additional females that would have to be alive in order to equate the actual with the expected, would then be the number of 'missing women'.

Ans to Q No 12: The concept of missing women is a way to assess the cumulative impact of gender bias in mortality by estimating the additional number of females of all ages who would be alive if there had been equal treatment of the sexes among the cohorts that are alive today.

Ans to Q No 13: i. True ii. True iii. False

Ans to Q No 14: Gender bias in health means existence of prejudices in action or treatment against a person on the basis of sex. It arises when patients with the same complaints are assessed, diagnosed and treated differently because of their sexes.

Ans to Q No 15: Women are biased in terms of health due to prevailing social conditions. They lack to access of health care services due resource constraint, less education and limited medical facilities.



11.10 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: How is the demand for health care services influenced by age?

Q 2: Define the concept of 'missing women'?

Q 3: "Nutrition economics focuses on interdependency among nutritional habits, health and public expenses." Comment on this.

Q 4: Mention the ways to alleviate gender bias in health.

B) Essay type questions (Answer each question in about 300-350 words)

Q 1: Discuss the demand for and supply of health care.

Q 2: Explain the factors contributing to missing women.

Q 3: State the relationship between morbidity and female education. What are the benefits of female education?

Q 4: Discuss the consequences of gender bias in health.

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UNIT 12 : FINANCING OF HEALTH

UNIT STRUCTURE

12.1 Learning Objectives

12.2 Introduction

12.3 Financing Health Care and Resource Constraints

- 12.3.1 Meaning and Definition
- 12.3.2 Sources and Impact of Health Financing
- 12.3.3 Resource Constraint

12.4 Economics of Health Insurance

- 12.4.1 Sources of Health Insurance
- 12.4.2 Types of Health Insurance

12.5 Health Policy in India

- 12.5.1 National Health Policy of India

12.6 Financing Health Sector in India

- 12.6.1 Financing of Health Care in India
- 12.6.2 Health Care Finance and its Impact

12.7 Let Us Sum Up

12.8 Further Reading

12.9 Answers to Check Your Progress

12.10 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- explain the various issues of Health care financing
- define the key concepts of Health Insurance
- discuss India's health care financing system
- asses the country's Health Policy.

12.2 INTRODUCTION

Health care expenditure continues to increase at a rapid rate worldwide. The two main factors responsible for this rise are demographic

changes and advancement of medical technology. Population explosion creates increased demand for health care services. At the same time, use of expensive technology in health care can also lead to exorbitant increase in health care costs. The government's share in medical costs is subsequently shrinking in each and every budget. Although resource constraint is one reason of Governments' dwindling role in health care yet commercialisation of health sector also plays crucial role in the same. So, what would be the alternative mechanism which ensures that nobody fails to secure adequate medical care because of his or her inability to pay for the service? Health insurance is one good alternative but debate still continues on whether insurance could cover the entire population or not.

12.3 FINANCING HEALTH CARE AND RESOURCE CONSTRAINTS

Production and utilisation of health care services are associated with financial resources. Who will pay, how resources would be generated, from where resources would be collected – all of these need to be studied for the smooth functioning of health care services. These issues are discussed under financing of health care system. Therefore, health care financing deals with generation, allocation and use of financial resources in health system. The study of health care financing allows us to understand how a country's health system operates, whether finances are available or not, how to raise more funds for health, ways to develop mechanism for efficient and equitable delivery of health care services, ways to improve the access to services, and ways to reduce the burden of expenditure on the pockets of common people. Rising financial burden of health care on people often has effect of impoverishment and catastrophe. Therefore, the mobilisation, accumulation and allocation of financial resources are to be done in such an efficient way in order to provide for health needs of the people without raising their financial hardship. Accordingly, the objectives of health care financing are classified into three types— revenue collection, efficiency in the resource utilisation and financial risk protection.

12.3.1 Meaning and Definition

Health care financing, at personal level, refers to payments relating to hospital care, doctors' care, diagnostic tests, medicines and other personal medical services. In general, health care financing deals with generation and utilisation of financial resources for the country's entire health system. It analyses the impact of financial resources on health system's performance with respect to delivery and accessibility to health care. According to WHO, "health financing refers to how financial resources are used to ensure that the health system can adequately cover the collective health needs of every person". According to Bhore Committee Report, 1946, "Appropriate healthcare financing is a means to ensure adequate funds for health care, provide equitable access to all population groups and reduce financial barriers to utilise health services".

12.3.2 Sources and Impact of Health Financing

Following four are sources of health financing—

- **Government Financing:** A substantial proportion of health spending is usually financed by government through universal health programs.
- **Private Insurance:** Households purchase health insurance out of their own money and the insurance company finances the medical bill in case of health need.
- **Employer's Contribution:** The employers sometimes take care of the health issues of the employees. In certain cases, the health insurance is paid by employers.
- **Person's Own Funds:** People are paying the health care expenditure out of their own pockets. Majority of the people cannot afford health insurance and if public sector health care facilities are not adequate then they are forced to pay from their own sources, often causing borrowing and selling of properties.

Health financing has great impact on overall health system. A good financing affects the following domains—

- **Drugs and Infrastructure:** Make easy availability of medicines and improves health infrastructures like hospitals, laboratories, equipments, research centres etc.
- **Information System:** Make improvement in information system which helps the patients in choosing good treatment and doctors.
- **Workforce:** Availability of funds is important to employ sufficient number of workforce in health system which has the impact of good health care service delivery.
- **Access and Equity:** More public funding makes health care easily accessible to the people and provides equal opportunity to all.

12.3.3 Resource Constraint

Finance is the fundamental requirement for maintaining and improving the health care system. There is always resource constraint in health care. If there is shortage of funds it becomes difficult to employ adequate number of medical workers, to make available the required medical facilities for treatment and preventive care as well as to undertake health promotional activities for the benefit of the society. Since, the financial resources available for health care are finite, the government's decision regarding resource allocation is crucial. It would determine whether the priority is given on universal primary health care or on expensive and tertiary health care. The scarcity of resource leads to the necessity of efficient management of the health care system which ensures quality and availability of care. This eventually leads to the emergence of a new branch called Health Care Resource Planning.



CHECK YOUR PROGRESS

Q 1: State whether True (T) or False (F)

i. Scarcity of resource is the cause of Health Care Resource Planning. (T/ F)

ii. More public funding ensures access and equity in health care. (T/ F)

iii. Financing of health care deals with only delivery of services. (T/ F)

Q 2: What are the two factors responsible for rapid rise in health care expenditure? (Answer in about 50 words)

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Q 3: Define the role of health care financing? (Answer in about 50 words)

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12.4 ECONOMICS OF HEALTH INSURANCE

Health insurance represents an insurance type which provides coverage of health expenditure due to illness or injury to the person insured. The insurance company pays for medical care, surgical expenditure and cost of prescribed drugs. The insurer could either pay the care provider directly or reimburse the bills incurred by the insured person upon submission of necessary documents/evidences. Health insurance is important as it works as a safety net which financially protects the insured if he or she becomes victim of any health crisis. It helps in transferring the financial burden of health costs to insurance company in return of small fee paid in the form of premium. In return of regular premium paid, the insurance company pays the expenses of treatment

required by an insured person. Thus, health insurance is an assurance to avail the best medical care without worrying about the costs. The health insurance ensures financial stability, reduces stress and brings peace in mind, thereby helps in speedy recovery from illness.

12.4.1 Sources of Health Insurance

There are two main sources of health insurance: Public and Private.

- **Public Health Insurance:** This is provided through the governments. Through budgetary mechanism the governments pay for the insurance.
- **Private Health Insurance:** This includes insurance received through an employer or purchased from market by the individual out of his own money.

12.4.2 Types of Health Insurance

Following are different types of health insurance:

- **Individual Health Insurance:** This type of insurance offers health costs coverage to an individual and his family in return of premium paid by him.
- **Critical Illness Insurance:** This protects financial resources from the life-threatening diseases such as cancer, stroke, paralysis, kidney failure etc. whose cost of treatment is usually very high.
- **Senior Citizen Health Insurance:** Elderly people above the age of 60 years are more vulnerable to serious illnesses. This type of insurance ensures adequate medical coverage post retirement periods.
- **Group Insurance:** This is usually provided by the employer to the employees. However, the coverage amount is limited in this type of insurance.



CHECK YOUR PROGRESS

Q 4: State whether True (T) or False (F)

i. Health insurance is a policy which covers health expenditure. (T/ F)

ii. Health insurance transfers financial burden of health costs from insurance company to individuals. (T/ F)

iii. Private health insurance is provided by government through budgetary mechanism. (T/ F)

Q 5: Why is health insurance important? (Answer in about 40 words)

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Q 6: What is critical illness insurance? (Answer within 40 words)

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12.5 HEALTH POLICY IN INDIA

Health policy of a nation refers to its strategy for controlling and optimising the social uses of its health knowledge with intended objectives. The WHO defines health policy thus, “health policy as the decisions, plans and actions that are undertaken to achieve specific health care goals within a society”. After independence the Indian government adopted the Bhore Committee’s recommendations. The committee prescribed a model with the blueprint for development of a three tier system of health care delivery comprising primary, secondary and tertiary levels. Both public and private providers are allowed to deliver health care in each of the three levels. In the primary level of health care, community health centres, primary health centres and sub-centres were included; in secondary level sub-district hospitals were included, while the district

hospitals and medical colleges came under tertiary level. These classifications were based on the norm of population size. This system of three tier health care considerably helped in developing health infrastructure across the country.

12.5.1 National Health Policy of India

India adopted the first National Health Policy (NHP) in 1983. This policy is updated in 2002 and in 2017 subsequently.

- **National Health Policy 1983:** The NHP-1983 set the goal of attaining 'Health for all by the year 2000'. It tried to cater the health needs of the people, particularly the poor and under-privileged, by establishing a comprehensive public health care services. It recommended a decentralised health care system and encouraged use of volunteers and paramedics. The NHP-1983 had seven indicators to be achieved:
  - Raising Life Expectancy from 52.6 to 64 years
  - Reducing Infant Mortality Rate from 125 to 60
  - Reducing Maternal Mortality Rate from 4.5 to 2
  - Reducing Crude Death Rate from 14 to 9
  - Reducing Crude Birth Rate from 35 to 21
  - Achieving a Net Reproductive Rate of 1
  - Providing potable water to the entire rural population

  Although this policy contributed a lot to the health sector of India, its performance is limited due to factors like slow socio-economic development, insufficient political commitment, rapid demographic changes etc.
- **National Health Policy 2002:** The Government of India revised the National Health Policy in 2002. The NHP-2002 tried to ensure equitable access to health services across the social categories and geographical areas. Emphasis was given on strengthening and extending of public health services through convergence of all health programs within a single umbrella. The focus was given on those diseases

which principally contributed to disease burden such as TB, HIV/AIDS, Malaria, Blindness, etc.

- **National Health Policy 2017:** The NHP-2017 sought to reach all in a comprehensive and integrated way to move towards wellness. It aims at achieving universal health coverage and delivering quality health care services to an affordable cost without anyone having to face financial hardship as a consequence. This policy was adopted because of changing priorities of health as well as the growing incidences of catastrophic expenditure in health which contributes significantly to poverty. The NHP-2017 identified seven priority areas and action plans for improving environment of health-
  - The Swatch Bharat Abhiyan
  - Balanced, healthy diets and regular exercises
  - Addressing tobacco, alcohol and substance abuse
  - Yatri Suraksha-preventing deaths due to rail and road traffic accidents
  - Nirbhaya Nari-action against gender violence
  - Reduce stress and improved safety in workplace
  - Reducing indoor and outdoor air pollution.



CHECK YOUR PROGRESS

Q 7: State whether True (T) or False (F)

i. India adopted the first National Health Policy just after independence. (T/ F)

ii. 'Health for all' was the goal of NHP-2002. (T/ F)

iii. The NHP-2017 has seven priority areas. (T/ F)

Q 8: Define health policy. (Answer in about 40 words)

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Q 9: What is the goal of NHP-2002? (Answer in about 40 words)

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12.6 FINANCING HEALTH SECTOR IN INDIA

In India, the government has been taking the major responsibility in the health sector. It provides health care services to the people free of costs. However, the public health system is insufficient in comparison to the huge population size. Depriving people of quality health care services has forced a large section of people to move towards private health care providers.

In recent times, the government encourage PPP model in health care. The Public-Private Partnership (PPP) approach combines the efforts of public, private and other organisations by bringing together their core competencies. Under this model, the health care services are delivered to the people by making arrangements between public and private sector health service providers.

12.6.1 Financing of Health Care in India

The following table shows the trends different sources of financing of health care in India in recent decades-

Table 12.1: Indicators of Health Financing

Indicator	2015-16	2014-15	2013-14	2004-05
Total Health Expenditure (% of GDP)	3.8	3.9	4.0	4.2
Per Capita Health Expenditure (in Rs)	4116	3826	3638	1201
Government Health Expenditure (%)	30.6	29	28.6	22.5
Out of Pocket Expenditure (%)	60.6	62.6	64.2	69.4
Social Security Expenditure (%)	6.3	5.7	6	4.2
Private Health Insurance Expenditure (%)	4.2	3.7	3.4	1.6
Donor Funding for Health (%)	0.7	0.7	0.3	2.3

Source: National Health Account, GOI, 2019

The above table reveals that India's total expenditure on health as a percentage of GDP has a declining trend. In 2004-05, the country spent 4.2 percent of GDP which keeps on falling to 3.9 percent from 2014-15 and further to 3.8 percent from 2015-16. Although, per capita health expenditure doubled from Rs.1201 in 2004-05 to Rs.4116 in 2015-16, yet the cost of health increases at a much higher rate during the period. Out of total expenditure on health, government's share has been increased from 22.5 percent in 2004-05 to 30.6 percent in 2015-16. Still this is quite insufficient as the people are required to spend more than 60 percent of total health expenditure out of their own pocket. Gradually, the private insurance health expenditure is rising.

12.6.2 Health Care Finance and its Impact

India's budgetary allocation in health has been always inadequate. It is ranging around 3 percent of GDP which is only half of the internationally recommended amount of 6 percent. This inadequate spending leads to insufficient infrastructure, shortage of manpower, poor doctor-patient ratio and imbalance between rural and urban health care. There is always the shortages of manpower, beds in hospitals, materials, medicines, equipments etc. in comparison to the population size. As per the norm of WHO, there must be 25 health workers (doctors, nurses and midwives) in every 10,000 population but India has only 19 workers. Similarly, doctor-population ratio should be 1:1000 but in India it is as high as 1:1700. Again, the ratios are very miserable in rural areas. The deficiencies in public health care system forces the poor Indian people to seek private health care. Again the exorbitant fee in private health care forces them to borrow money from various sources and contributes to their impoverishment.



CHECK YOUR PROGRESS

Q 10: State whether True (T) or False (F)

i. India provides health care services to the people free of costs. (T/ F)

ii. India's public health system is sufficient in relation to population size. (T/ F)

iii. India spends in health internationally recommended % of GDP always. (T/ F)

Q 11: What is meant by PPP model in health care? (Answer in about 40 words)

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Q 12: What is the trend of financing health care in India in recent time? (Answer in about 40 words)

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12.7 LET US SUM UP

- The health care financing deals with generation, allocation and use of financial resources in health system.
- More financial burden of health care on the people has catastrophe and impoverishment effect. So, efficient health financing is important to provide health needs of the people without raising their risk of financial hardship.
- Health insurance provides coverage of health expenditure to the insured person when he /she faces illness or injury. The insurance company pays for medical care, surgical expenditure and prescribed drugs.

- Health policy refers to the strategy of a country for controlling and optimising the social uses of health knowledge with intended objectives.
- The Indian Government has been taking the major responsibility in the health sector. Although it provides health care services free of costs to the people yet the public health system is insufficient in comparison to the huge population size. When people are deprived of quality health care services, people are forced to move towards private health care providers. In recent time, the government encourage PPP model in health care.



12.8 FURTHER READING

1) Dahiya, H. (2018). National Health Policy of India. in International Journal of Recent Scientific Research, vol.9, Issue-7(B)
2) Eklund, F. J. (2008). Resource Constraints in Health Care. Finland: Helsinki University of Technology
3) Finkelstein, A. (2014). Moral Hazard in Health Insurance. New York: Columbia University Press
4) Purohit, B. C. (2020). Economics of Public and Private Healthcare & Health Insurance in India. New Delhi: SAGE Publications India Pvt. Ltd.
5) World Development Report (1993). Investing in Health. The World Bank



12.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No1: i. True ii. True iii. False

Ans to Q No 2: The two main factors responsible for rise in health care expenditure are demographic changes and medical technology advances. The first, i.e., population explosion creates increased

demand for health care services. Similarly, more use of expensive technology in health care leads to exorbitant increase in health costs.

Ans to Q No 3: The study of health care financing allows us to understand how a country's health system operates, whether finances are available or not, how to raise more funds for health, ways to develop mechanism for efficient and equitable delivery of health care services, improvement in the access of services, and to reduce the burden of expenditure on the pockets of common people.

Ans to Q No 4: i. True ii. False iii. False

Ans to Q No 5: Health insurance is an assurance to avail the best medical care without worrying about the costs. The health insurance ensures financial stability, reduces stress and brings peace of mind, thereby helping in speedy recovery from illness.

Ans to Q No 6: The critical illness insurance is a type of insurance which protects financial resources from life-threatening diseases such as cancer, stroke, paralysis, kidney failure etc. as its cost of treatment is usually very high.

Ans to Q No 7: i. False ii. False iii. True

Ans to Q No 8: Health policy is defined as the decisions, plans and actions that are undertaken to achieve specific health care goals within a society.

Ans to Q No 9: The NHP-2002 aims to ensure equitable access to health services across the social categories and geographical areas. Emphasis is given on strengthening and extending public health services by converging all health programs under a single umbrella. The focus is given on those diseases which are principally contributing to disease burden such as TB, HIV/AIDS, Malaria, Blindness, etc.

Ans to Q No 10: i. True ii. False iii. False

Ans to Q No 11: The Public-Private Partnership (PPP) approach combines the efforts of public, private and other organisations by contributing to their core competencies. Under this model the health care

services are delivered to the people by making arrangement between public and private sector health service providers.

Ans to Q No 12: In recent time, India's total expenditure on health as a percentage of GDP has a declining trend. In 2004-05, India spent 4.2% of GDP which declines to 3.8% in 2015-16. Out of total expenditure on health, government's share has been increased from 22.5% in 2004-05 to 30.6% in 2015-16. Still this is very insufficient as the people are required to spend more than 60% of total health expenditure out of their own pocket. The private insurance health expenditure is gradually rising.



12.10 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: How does resource constraint affect health care services?

Q 2: What are the main thrust areas of NHP-2017?

Q 3: "Health insurance works as safety net." Comment.

Q 4: What are the sources of financing health in India?

B) Easy type Questions (Answer each question in about 300-500 words)

Q 1: Discuss the sources and impact of health care financing.

Q 2: Explain different types of health insurance.

Q 3: Who finances health care in India? Discuss the impact of India's Health care finance?

Q 4: Elaborate on the National Health Policies of India.

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UNIT 13 : ROLE OF PUBLIC AND PRIVATE SECTOR IN HEALTH

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Meaning of Public and Private Sector

13.4 Role of Public Sector in Health

13.5 Role of Private Sector in Health

13.6 The Indian Health Sector: Broad Aspects, Structure and Establishments

13.7 Role of Public Private Partnerships (PPPs) in Indian Healthcare Service

13.8 Let Us Sum Up

13.9 Further Reading

13.10 Answer to Check Your Progress

13.11 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- explain the meaning of public and private sector
- discuss the specific role of private sector with regard to health care service
- analyse the role of public sector in health care service in India
- discuss the role of public private partnership in the health sector.

13.2 INTRODUCTION

In human, health is the general condition of a person's mind, body and spirit, usually meaning to be free from illness, injury or pain (as in good health or healthy). As defined by the World Health Organization in 1946 in its broad sense, "health is a state of complete physical, mental and social wellbeing and not merely the absence of

disease or infirmity." It is pertinent to note that good health is a crucial part of one's wellbeing.

Good health is very important for a community or society, not only for quality living but also based on economic grounds i.e., for one to be economically productive and efficient. Improved health contributes to economic growth in four ways:

- It reduces production loss caused by workers' illness
- It permits the use of natural resources that had been totally or nearly inaccessible owing to disease
- It increases the enrolment of children in schools
- It makes them better able to learn and frees them from alternative uses of resources that would have to be spent on treating illness.

In ancient period, human being and communities always used indigenous medicine to cater to their health needs. Religious leaders, priests played an important role in the provision of health care services. Even today, we find that many religious leaders or guru offer certain healthcare services to the people. It may be noted here that only after the Second World War, the evolution of modern health system was facilitated with a dramatic development in biomedical technologies and some important discoveries such as antibiotics, vaccines, mechanised diagnosis of diseases etc.

Today, both public and private sectors are offering many important health care services for the overall wellbeing of the community. For example, in India, Government, through the Ministry of Health and Family Welfare and other related agencies is playing an important role in the delivery of health care and in the establishment of primary healthcare services all over the country. Similarly, the private sector also plays a vital role in the delivery of health care services as well as in health system development, management and effectiveness.

13.3 MEANING OF PUBLIC AND PRIVATE SECTOR

The public sector is a collective term used to define a set of industries run by the government for welfare and collection of revenue. Such industries/institutions (often called as a Public Sector Undertaking

[PSU] in India) are controlled through certain relevant Ministers of the Government. In India, the public sector gained significance in the post independence era, particularly after the Industrial Development and Regulation Act 1951, Industrial Policy Resolution 1956 and Monopolies and Restrictive Trade Practice (MRTP) Act 1969. The PSUs in India were set up in the areas which required high investment and where the private industrial houses were not willing to make investments due to long gestation period. This meant that the state entrepreneurship was essential to lay a sound foundation for accelerating the process of industrialisation. In India, the government is emphasising more on the expansion of public sector also as a measure for removing the regional imbalances and for strengthening and safeguarding the overall interest of the society. Another important fact to be considered here is that the government has certain developmental priorities, which cannot materialise if they are left entirely to private enterprise.

On the other hand, private sector consist of business activities that is owned, financed and run by private individual and companies to make profit. India's private sector has been the major engine of growth and also playing important role in employment generation and makes valuable contribution to the country's gross domestic product. Private sectors are generally free from state ownership and control. Sometimes the private sector can collaborate with the government in a public-private partnership to jointly deliver a service or business venture to a community. In health care, both the sectors provide services for good health of the community as a whole.

13.4 ROLE OF THE PUBLIC SECTOR IN HEALTH

Public health is one of the areas in which the government must invest, especially in the developing economies. Public health services help in early prevention of health care problems, which is relatively inexpensive and can prevent dire and expensive health care problems later in life.

Public health promotes the welfare of the entire population, ensures its security and protects it from the spread of infectious disease and environmental hazards, and helps to ensure access to safe and quality care to benefit the population.

Governmental responsibilities for public health extend beyond voluntary activities and services to include additional authorities such as quarantine, mandatory immunisation laws, and regulatory authorities. The state's partnership functions by encouraging the common people to do things that benefit their health (e.g., physical activity) or create conditions to promote good health and requiring certain actions (e.g., food safety). Role of the public sector in health are discussed below–

- **Assure Health Services in All Levels:** Assuring health services indicates a group of activities such as assessing the availability of health-related services and health care providers in local communities, identifying gaps and barriers, convening community partners to improve community health systems and providing services identified as priorities by the local assessment and planning process.
- **Different Aspects of Health Responsibility of the Public Sector:** Different aspects of public health responsibility of the public sector include– assuring an adequate local public health infrastructure, promoting healthy communities and healthy behaviors, preventing the spread of communicable disease, protecting against environmental health hazards, preparing for and responding to emergencies and assuring health services.
- **Assure an Adequate Local Public Health Infrastructure:** Assuring an adequate local public health infrastructure for making the basic healthcare services available and accessible to the people is foundational to any public health system in any country. Along with providing the health care services, the public health sector should also look into other important issues, such as data analysis and utilisation; health planning; partnership development and community mobilisation; policy development, analysis and decision

support; communication and public health research, evaluation and quality improvement etc.

- **Promote Healthy Communities and Healthy Behaviour:** Promoting healthy communities and healthy behaviours means activities that improve health in a population, such as investing in healthy families; engaging communities to change policy, systems or environments to promote positive health or prevent adverse health; providing information and education about healthy communities or population health status; and addressing issues of health equity, health disparities and the social determinants of health.
- **Prevent the Spread of Communicable Disease:** Preventing the spread of infectious disease means preventing diseases that are caused by infectious agents e.g., by detecting acute infectious diseases, assuring the reporting of infectious diseases, preventing the transmission of disease and implementing control measures during infectious disease outbreaks.
- **Protect Against Environmental Health Hazards**: Protecting against environmental health hazards means addressing aspects of the environment that pose risks to human health, such as monitoring air and water quality; developing policies and programs to reduce exposure to environmental health risks; promoting healthy environments; identifying and mitigating environmental risks such as foodborne and waterborne diseases, radiation, occupational health hazards and public health nuisances.
- **Prepare and Respond to Emergencies**: Preparing and responding to emergencies means engaging in activities that prepare public health departments to respond to events and incidents and assist communities in recovery, such as providing leadership for public health preparedness activities within a community; developing, exercising; periodically reviewing response plans for public health threats; developing and maintaining a system of public health workforce readiness; deployment, and response.

13.5 ROLE OF THE PRIVATE SECTOR IN HEALTH

The private health sector also plays in important role in the areas such as-

- **Preventive and Curative Care:** The private health sector plays important role in offering preventive and curative health care services.
- **Providing Prompt and Quality Healthcare Services:** The private health care service providers offer more quick and responsive health care services.
- **Advanced Level of Research and Development:** The private health provider may also undertake advanced level of health research. In certain cases, they also collaborate with internationally reputed research institutions/Universities for the development of new drugs/vaccines etc.
- **Specialty Health Care Services:** The private sector often offers very specialised, sophisticated health care services, which may not be available in the public health sector. In this way, the private health sector plays a complimentary role in the health system.
- **Earning of Revenue Through Medical Tourism:** In many countries, the private healthcare providers attract foreign as well as local medical tourists in huge numbers. This helps the Government to earn significant revenues from the tourists. Further, this also contributes to local economic development in those areas.
- **Employment Opportunities:** The private health sector also offers huge employment opportunities to a large section of health professionals.

13.6 THE INDIAN HEALTH SECTOR: BROAD ASPECTS, STRUCTURE AND ESTABLISHMENTS

Service-wise, healthcare services are broadly categorised into three aspects: promotive, preventive and curative. Promotive aspect of healthcare services seek to promote good health among people, i.e., it

aims at promoting good health by undertaking various activities like health policy; awareness drives regarding healthy practices, precautions, behaviour; supportive community; measures to ensure a health environment; develop personal skills; re-orient the healthcare services etc. These various promotive healthcare services can be broadly categorised as enabling, mediating and advocacy. Enabling here means developing the required skills among the people, mediating means offering a linkage between people and the different health promotion activities and advocacy means undertaking various awareness drives to make the people knowledgeable on different healthy behaviours and practices. The preventive aspects of health basically seek to prevent occurrence of illness through activities such as early diagnosis of symptoms, regular health check-ups, maintaining a healthy life style and healthy habits and practices, vaccination and immunisation drives. The curative aspect of healthcare services basically tries to cure illness through proper diagnosis and treatment.

The Primary Healthcare System in India, especially in rural areas, is a 4-tier system. This comprises a Sub Centre at the lowest level (a village or panchayat) as a first level of contact with the people providing mainly preventive and promotive healthcare; the Primary Health Centre (PHC) supervising around 5-7 Sub Centres, providing the first level of clinical service including basic lab investigations, medical consultations, and Basic Emergency Obstetric Care services, the Community Health Centre/Block PHC at the Block level acting as the First Referral Unit providing Critical Emergency Obstetric Care services with 30-50 indoor beds. The fourth level is the sub-division/district level providing specialised care with hospitals ranging from 50-500 beds. The population coverage norm based on Indian Public Health Standard for each level of health facility is indicated in Table 13.1.

Table 13.1: Population norms for 4-tier Rural Primary Healthcare System

Level of Health Facility	Population Norm	
	Difficult/ Hill Regions	Other Regions
Sub Centre	3,000	5,000
Primary Health Centre	20,000	30,000
Community Health Centre/ Block PHC	80,000	120,000
District Hospital	No population norm, but every ten blocks should have at least one District Hospital.	

Source: Rural Health Statistics of India, (Ministry of Health and Family Welfare), 2011.

Let us briefly discuss the different health care services provided by these health facilities in India below:

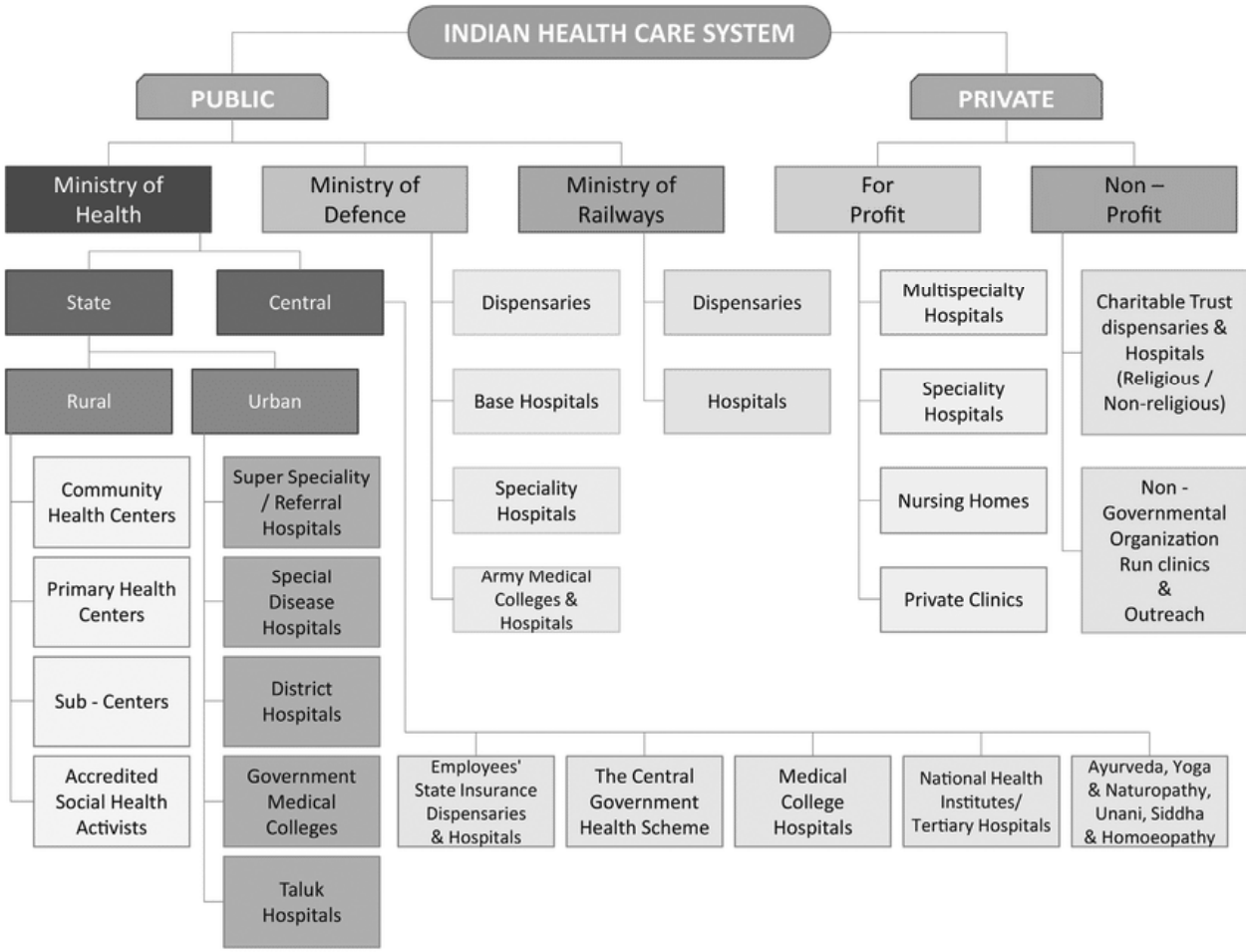
- **Sub-centers (SCs):** A sub-center (SC) is the most peripheral and first contact point between the primary health-care system and the community. Each SC is required to be staffed by at least one auxiliary nurse midwife (ANM) female health worker and one male health worker (for details see recommended staffing structure under the Indian Public Health Standards (IPHS)). SCs are assigned tasks relating to interpersonal communication in order to bring about behavioural change and provide services in relation to maternal and child health, family welfare, nutrition, immunisation, diarrhea control and control of communicable diseases programs. The Ministry of Health & Family Welfare is providing 100% central assistance to all the SCs in the country since April 2002 in the form of salaries, rent and contingencies in addition to drugs and equipment.
- **Primary Health Centers (PHCs):** A Primary Health Center (PHC) is the first contact point between the village community and the medical officer. PHCs were envisaged to provide integrated curative and preventive health care to the rural population with emphasis on the preventive and promotive aspects of health care. The PHCs are established and maintained by the State Governments under the Minimum Needs Program (MNP) / Basic Minimum Services (BMS) Program. As per minimum requirement, a PHC is to be staffed by

a medical officer supported by 14 paramedical and other staff. Under NRHM, there is a provision for two additional staff nurses at PHCs on a contract basis. It acts as a referral unit for 5-6 SCs and has 4-6 beds for in-patients. The activities of PHCs involve health-care promotion and curative services.

- **Community Health Centers (CHCs):** As per minimum norms, a CHC is required to be staffed by four medical specialists, that is, surgeon, physician, gynecologist/obstetrician and pediatrician supported by 21 paramedical and other staff. It has 30 beds with an operating theater, X-ray, labor room and laboratory facilities. It serves as a referral center for PHCs within the block and also provides facilities for obstetric care and specialist consultations.
- **First Referral Units (FRUs):** An existing facility (district hospital, sub-divisional hospital, CHC) can be declared a fully operational First Referral Unit (FRU) only if it is equipped to provide round-the-clock services for emergency obstetric and newborn care, in addition to all emergencies that any hospital is required to provide. It should be noted that there are three critical determinants of a facility being declared as a FRU: (i) emergency obstetric care including surgical interventions such as caesarean sections; (ii) care for small and sick newborns and (iii) blood storage facility on a 24 hour basis.
- **District Hospital:** District Hospital is a hospital at the secondary referral level responsible for a district of a defined geographical area containing a defined population. Its objective is to provide comprehensive secondary health care services to the people in the district at an acceptable level of quality and being responsive and sensitive to the needs of people and referring centres. Every district is expected to have a district hospital. As the population of a district is variable, the bed strength also varies from 75 to 500 beds depending on the size, terrain and population of the district.

There are also other health institutions providing healthcare services in India. Again, similar to the public health system, the private healthcare system also co-exists in India. The overall scenario of the Indian health care system has been summarised in Figure 13.1.

Figure 13.1: The Indian Health Care System.



Source: Adapted from https://www.drishtiias.com/daily-updates/daily news-editorials/public-health-system-in-india



ACTIVITY 13.1

Try to find out the number of public health care facilities located in the urban areas in the north eastern states of India. Also make a comparative analysis of manpower availability in the urban public health care facilities in those states, particularly in the capacities of Health workers, ANMs and Doctors.



CHECK YOUR PROGRESS

Q 1: What is the definition of health according to WHO? (Answer in about 20 words)

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Q 2: Distinguish between public and private sector. (Answer in about 30 words)

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Q 3: What type of health services should be provided by the public sector? (Answer in about 30 words)

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Q 4: Explain the role of government for health system development. (Answer in about 20 words)

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Q 5: What are the reasons for the growth of private sector healthcare service in India? (Answer in about 40 words)

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13.7 ROLE OF PUBLIC PRIVATE PARTNERSHIPS (PPPc) IN INDIAN HEALTHCARE SERVICE

Public Private Partnerships (PPP) is a cooperative management between two or more public and private sectors, typically of a long term. It includes long term nature of the demand for a service, profitability and amenability to structure a commercial framework and business model

for PPP. It is a commercial legal relationship defined by the government of India in 2011. NITI (National Institute of Transforming India) Ayog has come out with Public Private Partnerships model to bring changes in the health sector. As per the PPP model developed by NITI Ayog, both the gap in medical education and the shortage of qualified doctors will be addressed. As per this model existing and new private medical colleges will be linked with functional district hospital.

The policy goal of PPP in healthcare would be to bring out the synergies in key stakeholders interest between the public and private sector and at the same time have a strong regulatory mechanism of maintaining quality along with equity in service. Any model of healthcare PPP that is implanted and the framework used in evaluating will have to accommodate the key concerns. PPP model will vary in design and implementation based on structural, regional and goal differences. Yet, a framework for evaluating such models will try to ensure that PPPs are set up for success rather than failure.

- **Need for PPP model for healthcare**
  - To provide universal healthcare; which is need of hour given the dismal condition of healthcare sector in India.
  - It is difficult for government alone to meet the healthcare infrastructure and capacity gaps in Tier II to Tier III cities as well as in rural areas.
  - To provide health insurance- Karnataka's Yeshasviny Co-operative Farmers Healthcare Scheme and Andhra Pradesh's Arogya Rakshya Scheme can be cited as successful example.
  - The government spending on healthcare is around 1.15 percent of its GDP which is among the lowest in the world.
  - As compared to their government counterparts, private healthcare provider have done well in providing healthcare services.
  - PPP can ensure that government services are delivered in an economical, effective and efficient manner.

- **The key factors for successful PPP initiative**

In any healthcare service system, there are five key stakeholders namely provider, payer, beneficiary, regulator and IT infrastructure. PPP initiative will be successful only if there is an effective management of the public and private player's interest across different stakeholders rules. The following four points is important for the success of PPP initiative-

- **Scope of Free Service at PPP Hospital:** Free service means healthcare access of the beneficiary that is free of charges. However, there is a cost to the service provider which has to be met either through a global budget or through cross subsidy out of revenue from paying patients. The qualitative aspect of the core service of the patient's medical care must be equitable and there could be difference in catering to the patient's personal conveniences for those who are able to and willing to pay for such services. On the other hand, the quantitative aspect of free service can be determined on the basis of the built up facilities with maximum capacity utilisation, or alternatively on the basis of the actual service provided.
- **Determination of Tariff:** It is very essential that pricing strategies and service tariffs of the 'free services' are determined on mutually agreeable platforms. The government is the third party payer covering the cost of services for the private sector service provider, on all 'free services'. In most successful PPP models, tariff determination actually works top downwards from a global budget based on built-up capacity and capacity utilisation. Global budget on utilisation is also auditable and therefore, fits into public accountability. Based on mutual understanding, this global budget figure can be determined. It can also lower than cost of operation if cross subsidy is part of agreement. The value of assets provided by the government could be considered as contribution in which the government can expect certain returns in the form of return on capital employed or dividend on equity.

- **Role of Advisors to the PPP:** In most PPP initiatives, the public sector partner identifies the management and financial consultants to advice on the projects. It is important that the appointed advisors should develop the contractual clauses after discussion and in mutual agreement of both the public and private sector interests. This would enable a better business projection and provide incentive to the bottom-line objectives of the project.
- **Regulatory Role in a PPP Setup:** PPPs are considered to bring the best of both public and private sector world practices and benefits together to provide better healthcare. At the same time, a strong control mechanism is also needed to ensure that the public and private players operate within their defined roles and do not transgress boundaries that may undermine the larger industry context. While self regulatory mechanisms are an option to enforce quality controls through professional associations, such a mechanism might still need some time to evolve in India.

In conclusion, healthcare systems will be under ongoing pressure to increase quality and efficiency of care, and find new ways to use data, systems and distributed networks of providers, focused more on wellness and disease prevention rather than on the acutely ill. Health systems will need to become more integrated, addressing care needs across the continuum, while utilising technology to enhance delivery. PPP models are adapting to these changes. While early PPPs focused on building and replacing critically-needed hospital infrastructure; integrated PPPs were the next evolution, adding clinical service delivery and private sector management practices. This has led to the quality of care delivered, as well as access to speciality care.



CHECK YOUR PROGRESS

Q 6: What is meant by Public Private Partnerships (PPP)? (Answer in about 30 words)

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Q 7: State the policy goal of PPP in healthcare.(Answer in about 30 words)

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13.8 LET US SUM UP

- The public sector is a part of the economy run by the government for welfare and collection of revenue. This sector entered the areas which required high investment and where the industrial houses were not willing to make investments due to long gestation period
- The private sector consists of business activities that is owned, financed and run by private individual and companies to make profit. It is generally free from state ownership and control.
- The role of government in health development is well documented worldwide. As per the constitutional provision in many countries, the rights to health care is clearly indicated and government is responsible for providing access to health services without financial barriers and for ensuring that the 'value of health' as a basic human right of all is protected.
- Major public health problems like malaria, tuberculosis, leprosy, high maternal and child mortality and lately, Human Immunodeficiency Virus (HIV), Covid-19 pandemic have been addressed through a concerted action of the government. The Ministry of Health and Family Welfare (MOHFW) plays important role in guiding the public health system in India.
- At the time of independence the private sector in India had only 8% of total health facilities. However now, 93% of all hospitals, 64% of all beds, 80-85% of doctors, 80% of outpatients and 57% of in-patients are in the private sector. In all sectors of medical education

and training, medical technology and diagnostics, manufacture and sale of pharmaceuticals, hospital construction and ancillary services and the provision of health services, the private sector has gained dominance in India.

- The government health policies takes up from time to time, consider the various aspects such as tax policies on the imports of medical equipments and technology, health insurance policy, FDI policy on health industries, industrial status to health sector, entrepreneurship development etc. These policies were responsible for the development of private health service in our country.
- The government also provides some additional benefits like land allocation at subsidised rate, exemption of stump duty, electricity duty, conversion duty etc. encouraging local entrepreneurs to establish hospitals, laboratories etc. to serve the people of the nation.
- The Public Private Partnership (PPP) model in India has seen success in other areas such as infrastructure, energy, education, urban development, tourism, and more. It can be the panacea to India's healthcare challenges as well. PPP in healthcare has the potential to resolve various issues and ensure healthcare inclusion for the Indian masses. Starting with smaller projects and driving success for the same can help build credibility and gain buy-in from all stakeholders.
- PPP will bring in resources the government needs to make healthcare available as well as create a sustainable long-term model. It can improve the healthcare system by pooling in the expertise and finances of the private sector with the access and subsidies of the public sector.



13.9 FURTHER READING

1) Purohit, B.C. (2020). Economics of Public And Private Healthcare and Health Insurance In India. New Delhi: SAGE publication

2) Mehra, S.R. (2013). Essentials of Health Management and Administration. New Delhi: Cyber Tech Publisher

3) Chandra, B. (2007). Health Care Services in Hospitals. New Delhi: Alfa Publications

4) Kelkar, S. (2021). India's Private Health Care Delivery-Critique and Remedies. Singapur: Palgrave Macmillan

5) www.ibef.org policy paper 'The Emerging Role of PPP in Indian Healthcare Service' Prepared by CII.



13.10 ANSWER TO CHECK YOUR PROGRESS

Ans to Q No 1: Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

Ans to Q No 2: Public sector are run by the government for welfare motive, whereas private sector are run by private individuals and companies for profit motive.

Ans to Q No 3: Mass immunisation, environmental health activities, health education and promotion surveillance, control for communicable diseases at borders etc are not profitable for private providers and hence it should be provided by the government.

Ans to Q No 4: Health system includes strengthening of infrastructure, information mechanism and health research, The government is responsible for the development of this system.

Ans to Q No 5: The government health policies, tax policies on the imports of medical equipments and technology, health insurance policy, FDI policy on health industries, industrial status to health sector, entrepreneurship development etc. were responsible for the development of private health service in our country

Ans to Q No 6: Public Private Partnerships (PPP) is a cooperative management between two or more public and private sectors, typically of a long term nature. It includes long term nature of the demand for a service, profitability and amenability to structuring a commercial framework and business model for PPP.

Ans to Q No 7: The policy goal of PPP in healthcare would be to bring out the synergies in key stakeholders interest between the public and private sector and at the same time having a strong regulatory mechanism of maintaining quality along with equity in service.



13.11 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: What is meant by health and health care services?

Q 2: Distinguish between Public and Private health sector.

Q 3: What is meant by health promotion and health policy?

Q 4: What is PPP in healthcare sector?

Q 5: Why is PPP important in Indian healthcare sector?

B) Long Questions (Answer each question in about 300-500 words)

Q 1: Discuss the role of government in health development of the community.

Q 2: Discuss the factor responsible for the growth of private sector in health care services.

Q 3: Explain the role of public sector in health care service in India

Q 4: Discuss the role of public private partnership in the health sector.

Q 5: Discuss the key factors for successful PPP initiative.

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UNIT14 : ECONOMIC APPRAISAL OF HEALTH PROGRAMMES

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Health and Health Economics

14.4 Pharmacoeconomics

14.5 Economic Appraisal: Meaning and Its Importance

14.6 Techniques of Economic Appraisal

- 14.6.1 Cost Minimisation Analysis
- 14.6.2 Cost Benefit Analysis
- 14.6.3 Cost Effectiveness Analysis
- 14.6.4 Cost Utility Analysis

14.7 Let Us Sum Up

14.8 Further Reading

14.9 Answers to Check Your Progress

14.10 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- discuss the meaning of health and health economics
- explain economic appraisal and its importance
- describe the various techniques of economic appraisal in the health sector.

14.2 INTRODUCTION

The Indian health care sector is one of the fastest growing industries and is expected to grow at a compound annual growth rate of 17 percent during the period 2011 to 2020 to touch US $ 280 billion. Citizens' expectations for health care is becoming high in developing countries such as India, where people are becoming accustomed to

better standards. People now demand latest treatments, timely, affordable care, and a range of other choices. They are better informed than ever about their health and treatment options. They are prepared to take some responsibility for their own health, but, in general, they do not want to pay any extra amount for their health care.

The goal of any health care intervention is to improve health with available preventive measures, treatments, and medical procedures. The variation in the provision for health services across the country, along with increasing health care expenditure, accentuates the need for effective utilisation of health care resources. Although economics in general provides a framework to allocate scarce resources among competing ends, health economics specifically deals with the allocation of resources in improving health. Studies of health economics provide information to decision makers for efficient use of available resources for maximising health benefits. Economic evaluation is one part of health economics, and it is a tool for comparing costs and consequences of different interventions. The traditional classification of economic evaluation includes cost-minimisation, cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis. India is currently pursuing several strategies to improve health services for its population, including investing in government-provided services as well as purchasing services from public and private providers through various schemes. Prospects for future growth and development in this field in India will demand greater economic efficiency in the functioning of the health care system in the face of rapidly increasing costs, growing rate of aging, and rising rate in the chronic morbidities coupled with fast changing technology. Therefore, economic appraisal of health care interventions is very important.

14.3 HEALTH AND HEALTH ECONOMICS

Health is a multi-faceted concept and, thus, it is very difficult to define it precisely. General notion about health is the absence of illness due to physiological and organic deficiencies. It is mainly concerned with the mechanical ability and functioning of basic parts and organs of the

individual's body. The broad definition of health, however, does not mean mere absence of disease but it encompasses the whole range of personal, physiological, mental, social and even moral well-being of a person. The World Health Organisation (WHO) defines health as "a state of complete physical, mental and social well being and not merely the absence of disease or infirmity".

Good health indicates the state of proper functioning of the body and mind of a person in relation to one's physical and social environment that enables a person to live a content life and to achieve maximum productive capacity. In fact, health is a function of number of variables such as medical care, income, education, age, marital status, environmental pollution and also certain personal behaviour like smoking habits, exercise and the like. Thus, health does not mean just doctors and hospitals, but everything that influences the well-being of a human being.

Health Economics is the study of how scarce resources are allocated among alternative uses for the treatment of sick people and the promotion, maintenance and improvement of health standards in the economy, including the study of how healthcare and health-related services, their costs and benefits, and health itself are distributed among the various segments of a society. It can, broadly, be defined as 'the application of the theories, concepts and techniques of economics to the health sector'. It is, thus, concerned with matters such as the allocation of resources between various health promoting activities, the quantity of resources used in health services delivery; the organisation and funding of health service institutions, the efficiency with which resources are allocated and used for health purposes, and the effects of preventive, curative and rehabilitative health services on individuals and society. Thus, health economics is the application of principles of economics to the healthcare sector.

The scope of Health Economics includes relationship between health status and productivity, financial aspects of health care services, economic decision making in health and medical care institutions, planning of health development and other such related aspects. The distinguished features of health economics as a discipline include – health and medical care as economic goods, health as private or a public good, measurement

of quality of healthcare system, stock of health issues, investment aspects of healthcare industry, loss due to ill health, burden of diseases, resource costs of different diseases, effects of health and medical care provision, planning of health and medical care, choice of technology in health care system etc.

14.4 PHARMACOECONOMICS

Pharmacoeconomics refers to the scientific discipline that compares the value of one pharmaceutical drug or drug therapy to another. It is a sub-discipline of Health Economics. A pharmacoeconomics study evaluates the cost (expressed in monetary terms) and effects (expressed in terms of monetary value, efficacy or enhanced quality of life) of a pharmaceutical product. Pharmacoeconomics studies serve to guide optimal healthcare resource allocation, in a standardised and scientifically grounded manner.

Pharmacoeconomics centers on the economic evaluation of pharmaceuticals, and can use cost minimisation analysis, cost benefit analysis, cost-effectiveness analysis and cost-utility analysis. 'Quality-adjusted life years' (QALYs) have become the dominant outcome of interest in pharmacoeconomics evaluations, and many studies employ a cost-per-QALY analysis. Economic evaluations are carried out alongside 'randomised controlled trials' and using methods of decision-analytic modelling. Pharmacoeconomics is a useful method of economic evaluation of various treatment options. As more expensive drugs are being developed and licensed, it has become imperative, especially in the context of developing countries where resources are scarce to apply the principles of pharmacoeconomics for various drugs and treatment options so that maximum improvement in quality of life can be achieved with minimum cost. Pharmacoeconomics and health outcomes research play an increasingly important role in informing clinical development and making market access decisions on innovative medicines. It mainly works on the tenets of Health Economics, which particularly focuses on the costs and benefits of drug therapy. It is the part of health economics that focuses on the economic evaluation of pharmaceuticals.

14.5 ECONOMIC APPRAISAL: MEANING AND ITS IMPORTANCE

Economic appraisal and economic evaluation are different names given to research studies that weigh the costs of an action against the benefits that it provides. The difference between them is that appraisal is carried out before an action is taken, to help in deciding what is to be done by estimating the effects it is likely to have; and evaluation is carried out after the action is taken, to monitor what effects it actually has which can be safely attributed to the action undertaken. However, this distinction is often forgotten and these labels are often used interchangeably. In recent years, the expression 'evaluation' has become dominant in the literature on health economics, but 'appraisal' is used here because it describes better the kind of research mainly used in Health Economics.

Economic appraisal is a type of decision method applied to a project, programme or policy that takes into account a wide range of costs and benefits, denominated in monetary terms or for which a monetary equivalent can be estimated. Economic appraisal is a key tool for achieving value for money and satisfying requirements for decision accountability. It is a systematic process for examining alternative uses of resources, focusing on assessment of needs, objectives, options, costs, benefits, risks, funding, affordability and other factors relevant to decisions.

Economic appraisal is a methodology designed to assist in defining problems and finding solutions that offer the best value for money (VFM). This is especially important in relation to public expenditure and is often used as a vehicle for planning and approval of public investment relating to policies, programmes and projects. The principles of appraisal are applicable to all decisions, even those concerned with small expenditures. However, the scope of appraisal can also be very wide. Good economic appraisal leads to better decisions and VFM. It facilitates good project management and project evaluation. Appraisal is an essential part of good financial management, and it is vital in decision-making, transparency and accountability.

Economic evaluations are used to assist in setting priorities, making resource allocation decisions and designing services when there are competing goals and limited resources. Economic appraisals evaluate efficiency, sustainability, and cost-effectiveness. More specifically, they assist health program managers and policy makers in a number of ways. The various benefits and significances of economic appraisal and evaluation with regard to health care interventions can be stated as mentioned below:

- It guides decisions about the most appropriate mix of strategies and the best way to allocate scarce resources;
- It provides an overview of the total amount of resources that will be needed to start or expand a project;
- It assists discussions about the relative efficiency and equity of projects;
- It assists managers in deciding the most appropriate way to deliver a particular health intervention;
- It provides information for the advocacy of new health interventions and technologies;
- It provides evidence-based information to donors and policy makers that funding decisions result in cost-effective allocation of resources.



CHECK YOUR PROGRESS

Q 1: Define the term 'Health'. (Answer in about 20 words)

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Q 2: Explain in brief about the term Health Economics. (Answer in about 30 words)

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Q 3: What is meant by the term 'Pharmacoeconomics'? (Answer in about 30 words)

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Q 4: State the basic difference between Economic Appraisal and Economic Evaluation. (Answer in about 50 words)

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14.6 TECHNIQUES OF ECONOMIC APPRAISAL

Economic appraisal involves the costs and consequences that is, the inputs and outputs of activities, and suggests choices based on a set of criteria. There are four main types of studies involving economic appraisals viz. Cost Minimisation Analysis (CMA), Cost Benefit Analysis (CBA), Cost-Effectiveness Analysis (CEA) and Cost Utility Analysis (CUA). Each is a way of comparing the benefits of a health care intervention or program with its costs, but each differs in the way that the consequences (i.e., outcomes) of the intervention are measured and valued.

14.6.1 Cost Minimisation Analysis

Cost Minimisation Analysis (CMA) comprises the least costly alternatives when the outcomes of two or more therapies are virtually identical. CMA involves calculating drug costs to analyse the least costly drug or therapeutic modality. It also reflects the cost of preparing and administering a dose. This method of cost evaluation is the one used most often in evaluating the cost of a specific drug. This method can only be used to compare two products that have been shown to be equivalent in dose and therapeutic effect. Therefore, this method is most useful for comparing generic and therapeutic equivalents drugs. In many cases, there is no reliable equivalence between two products, and if therapeutic equivalence cannot be demonstrated, then cost-minimisation analysis is inappropriate.

Thus, CMA refers to comparison of two interventions or strategies which are assumed to have the same outcome or effects to find out which of the two is the least costly option. It focuses on costing of each of the options being compared in order to find out which of them has the least cost. Its main aim is, therefore, to find the most desirable option. From a broader perspective, it is used to compare two interventions/strategies with equivalent effectiveness and efficacy.

Advantages of Cost Minimisation Analysis:

- Relatively straight forward and simple method;
- It facilitates selection of cheaper yet effective drugs or interventions;
- It is very useful in evaluating the cost of a specific drug;
- As it compares the cost of two alternatives, it also helps to identify the cheapest method/drug to use hence maximising profits/benefits.

Disadvantages of Cost Minimisation Analysis:

- It can only be used to compare two products that have been shown to be equivalent in dose and therapeutic effect. In many cases, there is no reliable equivalence between two products and if therapeutic equivalence cannot be demonstrated, then cost-minimisation analysis is inappropriate.
- It cannot be used when outcomes of each intervention are different. It only compares alternatives of the same outcomes.
- It can sometimes be time consuming because in-order to use it, one has to find out the cost of the two different outputs for purposes of comparison.

14.6.2 Cost Benefit Analysis

Cost Benefit Analysis (CBA), sometimes also called Benefit–Cost Analysis, is a systematic approach of estimating the strengths and weaknesses of alternatives used

to determine options which provide the best approach to achieving benefits while preserving savings. Benefits and costs in CBA are expressed in monetary terms and are adjusted for the time value of money; all flows of benefits and costs over time are expressed on a common basis in terms of their net present value, regardless of whether they are incurred at the same or at different times.

Cost benefit analysis seeks to identify interventions with net benefits greater than their costs because such interventions are, by definition, worth adopting. In such analyses, costs are those expenses that can be attributed to the intervention itself (e.g., the added cost of a new medication) and all other resources that are consumed (e.g., testing, hospitalisation, surgical costs). The benefits of intervention are the monetary savings from events that are averted i.e. those costs that are not expended as a result of a new intervention plus the value of the resulting health improvements. In cost-benefit analysis, health value is expressed in monetary terms, or in other words, rates of clinical events are converted from their natural units, such as lives saved, into measures of economic value. This can be done using methods that estimate the value of a treatment in terms of the present value of future earnings that would be gained from the treatment, known as the human capital approach, or that assess or infer how much someone would be willing to pay us in order to avoid a given condition. By monetising health, Cost Benefit Analysis can facilitate the comparison of health care interventions with those from other sectors of the economy, such as housing or education. However, quantifying life is fraught with practical and ethical challenges; therefore, these types of analyses rarely appear in the published medical literature.

Advantages of Cost Benefit Analysis (CBA):

- It helps to allocate scarce resources to programs that maximise societal economic benefit;

- Cost Benefit Analysis is a type of economic evaluation method where the costs of the program or intervention are compared to the benefits of the intervention, and both costs and benefits use the same units, for example - rupee;
- Cost Benefit Analysis allows you to consider all costs and benefits over time, even those beyond the length of the intervention;
- Cost Benefit Analysis is typically used at the executive level of government when considering regulatory proposals that would be costly to implement but that would have potentially large economic benefits to society. Examples of these regulatory actions are the Clean Air Act and the Clean Water Act.

Disadvantages of Cost Benefit Analysis (CBA):

- It measures costs and outcomes in monetary terms and is not disease specific;
- There is difficulty in assigning monetary values to all pertinent outcome including changes in the length or quality of human life;
- The results of CBA are only as good as the assumptions and valuations on which they are based;
- Different methods of doing so may elicit different outcomes estimates and consequently different results to a CBA.

14.6.3 Cost Effectiveness Analysis

Cost Effectiveness Analysis (CEA) is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action. Cost-Effectiveness Analysis is distinct from Cost–Benefit Analysis, which assigns a monetary value to the measure of effect. Cost-Effectiveness Analysis is often used in the field of health services, where it may be inappropriate to monetise health effect. Typically, the CEA is expressed in terms of a ratio where the denominator is a gain in health from a measure (years of life, premature births averted, sight-years gained) and the numerator is the cost

associated with the health gain. The most commonly used outcome measure is quality-adjusted life years (QALY).

CEA differs from these other types of analysis in that it looks at only one consequence of an intervention a single effect or outcome that is common to both alternatives in question and assesses how that effect is achieved in differing degrees by the alternatives. CEA involves what is considered a "natural" effect of an intervention, such as the number of years of life gained, proper diagnoses made, or disability days saved. In CEA, no attempt is made to value the outcome; it is assumed that the outcome of interest is desirable.

CEA is only suitable to compare programs that have homogeneous outcomes and where there is a clearly dominant outcome of primary interest. This requirement is often quite restrictive. It may not be unreasonable, however, in comparing different kinds of live-saving programs (e.g. kidney dialysis and transplantation, emergency air ambulance system, trauma care), by using lives saved, or more likely, life years gained as the common measure of effect. When there are multiple outcomes or when there are significant consequences related to both quantity and quality of life, cost-utility or cost-benefit may be the preferred analysis in order to be able to make broader comparisons.

Advantages of Cost Effectiveness Analysis (CEA):

- Useful to know the cause of failure to attend the objective and the demands that are not met;
- To review the adequacy of corrective action taken;
- Outcomes are easier to quantify than CUA or CBA;
- Mostly used in situations where a decision maker, operating with a given budget considers a limited range of options within a given field.

Disadvantages of Cost Effectiveness Analysis (CEA):

- Ambiguity in assessing overall improvement or decrement in health;
- It cannot address the issue of allocative efficiency;
- Only compares programs with similar outcomes. It Cannot combine more than one important outcome;

- It is difficult to collapse both the effectiveness and the side effects into one unit of measurement.

14.6.4 Cost Utility Analysis

Cost Utility Analysis (CUA) is an economic analysis in which the incremental cost of a program from a particular point of view is compared to the incremental 'health improvement' expressed in the unit of quality adjusted life years (QALYs). CUA is used to determine cost in terms of utilities, to say in quantity and quality of life. Differing from cost-benefit analysis, cost-utility analysis is used to compare two different drugs or procedures whose benefits may be different. CUA expresses the value for money in terms of a single type of health outcome.

The primary outcome of a Cost Utility Analysis is the cost per QALY, or Incremental Cost Effectiveness Ratio (ICER), which is calculated as the difference in the expected cost of two interventions, divided by the difference in the expected QALYs produced by the two interventions. The results of cost utility analysis are compared with a threshold ICER; interventions with an ICER below this threshold are funded, whereas those with an ICER above the threshold tend not to be funded. CUA was developed to help decision-makers compare the value of alternative interventions that have very different health benefits, and it facilitates these comparisons without recourse to placing monetary values on different health states. It specifies what value is attached to specific health states, and thus increasingly facilitates the transparency of resource allocation processes. The challenges associated with the utilisation of cost utility analysis for resource allocation are primarily related to the adequacy of QALYs for capturing the value that society attaches to healthcare interventions. Cost utility analysis is, therefore, not a sufficient basis for resource allocation decisions; however, it is a useful technique and it performs a necessary function better than previous methods.

Advantages of Cost Utility Analysis (CUA):

- CUA allows comparison across different health programs and policies by using a common unit of measure (money/ QALYs gained);
- CUA provides a more complete analysis of total benefits than simple Cost–Benefit Analysis does. This is because CUA takes into account the quality of life that an individual has, while CBA does not;
- Cost Utility Analysis makes it clear what value is attached to specific health states, and this transparency then allows discussion among the stakeholders involved in decision-making (for example, patients, doctors, budget holders) about the accuracy and robustness of these utilities;

Disadvantages of Cost Utility Analysis (CUA):

- Absence of agreement in measuring utilities;
- No consensus on calculating utility weights;
- Utility weights are rough estimates;
- Many clinicians are not familiar with QALYs.



CHECK YOUR PROGRESS

Q 5: Who are the four techniques of Economic Appraisal associated with the health sector? (Answer in about 30 words)

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Q 6: How does Cost Effectiveness Analysis differ from other types of analysis? (Answer in about 50 words)

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14.7 LET US SUM UP

- The Indian health care sector is one of the fastest growing industries and is expected to grow at a compound annual growth rate of 17percent during the period 2011 to 2020 to touch US $280 billion.
- The goal of any health care intervention is to improve health with available preventive measures, treatments, and medical procedures.
- Health Economics is the application of the principles of economics in the healthcare sector.
- Pharmacoeconomics mainly works on the Health Economics which particularly focuses upon the costs and benefits of drug therapy. It is the part of health economics that focuses on the economic evaluation of pharmaceuticals.
- Economic appraisal and economic evaluation are different names given to research studies that weigh the costs of an action against the benefits that it provides.
- Economic appraisal is a methodology designed to assist in defining problems and finding solutions that offer the best Value for Money (VFM).
- Each techniques of economic appraisal are a way of comparing the benefits of a health care intervention or program with its costs, but each differs in the way that the consequences (i.e., outcomes) of the intervention are measured and valued.



14.8 FURTHER READING

1) Chapter– 3 Healthcare Economics– Concept, Development, Growth and Constraints with Reference to the Indian Economy (https://shodhganga.inflibnet.ac.in/bitstream/10603/7213/9/09_chapterpercent203.pdf)

2) Economic Evaluation for Global Health Programs (https://depts.washington.edu/cfar/sites/default/files/uploads/01_Levin_Economicpercent20Evaluationpercent20forpercent20Globalpercent20Healthpercent20Interventionspercent20CFARpercent20workshoppercent202013.pdf)
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5) https://www.sciencedirect.com/topics/medicine-and-dentistry/cost-minimization-analysis
6) https://en.wikipedia.org/wiki/Pharmacoeconomics



14.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well being and not merely the absence of disease or infirmity".

Ans to Q No 2: Health Economics is the study of how scarce resources are allocated among alternative uses for the treatment of sick people and the promotion, maintenance and improvement of health standards in the economy.

Ans to Q No 3: Pharmacoeconomics refers to the scientific discipline that compares the value of one pharmaceutical drug or drug therapy to another. It is a sub-discipline of health economics.

Ans to Q No 4: The difference between Economic Appraisal and Economic Evaluation is that appraisal which is carried out before an action is taken, to help in deciding what is to be done by estimating the effects it is likely to have; and evaluation is carried out after the action is taken, to monitor what effects it actually had.

Ans to Q No 5: There are four techniques of Economic Appraisal

associated with the health sector are Cost Minimisation Analysis (CMA), Cost Benefit Analysis (CBA), Cost-Effectiveness Analysis (CEA) and Cost Utility Analysis (CUA).

Ans to Q No 6: Cost Effectiveness Analysis differs from these other types of analysis as it looks at only one consequence of an intervention a single effect or outcome that is common to both alternatives in question and assesses how that effect is achieved in differing degrees by the alternatives.



14.10 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q 1: Write a short note on Health Economics.

Q 2: Write a note on Cost Benefit Analysis.

Q 3: Briefly discuss about the advantages and disadvantages associated with Cost Utility Analysis.

B) Long Questions (Answer each question in about 300-500 words)

Q 1: What is the meaning of the term Economic Appraisal? State its importance.

Q 2: Discuss briefly about the four techniques of Economic Appraisal associated with the health economics.

Q 3: Write a note on Cost Minimisation Analysis and state the various advantages and disadvantages associated with it.

*** ***** ***



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Name of the Paper: .....
Course Code: .....

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Learner's Feedback on Course

Dear Learner,

Regarding the course as mentioned above, we would like to know your opinions and comments so as to improve the quality of self learning materials in future. Please respond to the following statements by ticking the number you feel most reflect your opinion. After completion of the additional comments, please detach the page and send/mail the same to us at the address given below.

The Director, Centre for Internal Quality Assurance, KKHandiqui State Open University
Housefed Complex, Dispur, Guwahati-781006
(E-mail id: ciqa@kkhsou.in)

1) *Approximately how many hours did you spend for studying the units in the course?* ☐☐☐

2) *Please give your opinions (by ✓mark) to the following items based on your reading of the block:*

Sl. No.	***Statements***	***Strongly Agree***	***Agree***	***Neither Agree nor Disagree***	***Disagree***	***Strongly Disagree***
I)	*The SLMs of the course fulfil the learning objectives set out in the beginning of each unit*					
II)	*The units of the SLM could satisfy my academic needs and expectations*					
III)	*The Unit writers have excellent knowledge about the course contents*					
IV)	*Language and contents of the units were presented at a level which I could readily understand*					
V)	*Ample opportunity for participation in the activities provided in the units*					
VI)	*Used enough Illustrations (Diagrams, tables etc.) for conceptual clarity*					
VII)	*Quality of content is engaging, relevant, and up-to-date*					
VIII)	*The self check questions are very helpful*					
IX)	*The Possible/model questions and the answers to check my progress have benefited me a lot*					

Additional Comments: (Please feel free to provide your open comments)

1) *Which aspects of the SLM, according to you, worked well?*

   .....

   .....

2) *What sort of changes/improvements do you feel KKHSOU could implement to improve the overall quality of the SLM?*

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Thank you for taking the time to complete this form.