

# Impact of Research Development on Social Economic Change in India

## Abstract

The motive of the paper is to know what is research and how it can be developed and what are the impacts of research development on social economic change. The main aim of the paper is to inform that Less developed countries like India spend much portion of the Gross domestic product on development programmes to make socio economic change in the society and to make India a developed nation. Socio economic change can be measured with the help of the indicators Gross Domestic Product, Per Capita Income, Literacy Rate, level of employment and life expectancy. There can be great change in the society and economy with the help of the creative ideas of the human beings. Thus short and medium term development in economy and society can be achieved with the help of the research productivity and research development. There is a great change in the social economic factors due to invention of new technologies, change in laws, change in environment and ecological changes. Research provides various ways to enhance the life expectancy with the help of invention of new medicines, literacy rate by creating the interest of students in higher studies. There are great implications of research in the development of society and economy. Data analysis will do to see the impact of research development and creative ideas of the researchers on Gross Domestic Product, level of employment and literacy rate.

**Keywords:** Research, Development, Economy, Society, Gross Domestic Product, Per Capita Income, Literacy Rate, Employment and Literacy Rate.

## Introduction

The word Research has been derived from the Middle French "Recherché". It means to go about seeking. The term itself derived from the old French term "recherchier" means re+cerchier or searcher means to search. Research means to search again. Research is derived by combining two words Re+Search .It means to search again. To search with the help of the little information and reach to the vast information. It means to know the every aspect of information with the help of the research. Research means the systematic investigation of a subject to find new knowledge and try to solve the subject problem. Research means to study the specific problem in a systematic way. The main object of the research is to extend the human knowledge in the field of economy, politics, sciences, and society and bring change in them with the help of the existing knowledge and combining it with the new knowledge with the help of new techniques and ideas. Research helps in generating the creativity among the researchers. Research is used to make relations with past knowledge and create new knowledge for solving the problems prevailing in the society with the help of the creative ideas in a systematic manner.

## Researcher

Researcher is a scholar who has the ability to create new knowledge with the help of the existing knowledge and to do work for the welfare of the society and economy. Researcher is a person have specialised knowledge and expertise in the field of subject and to solve problems and create healthy and sound environment, society and economy. Some of the qualities should be there in researcher such as – creative, capable, hard worker, diligence, focus, passionate, learner, critical thinking and good communicative skills. If a researcher have the above mentioned qualities than only he can have an objective and transparent outlook into the problems prevailing in the society.

## Development

Development is the act or process of developing. Scientific and systematic order of technical knowledge to attain the specific goals and objectives is considered as development. It can be use in any sense such



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as development of knowledge, development of skills, development of thoughts, ideas and development of creative skills. So development is a process that can take us to the peak of the knowledge and ideas.

#### **Research Development**

Research development means Development of ideas, thoughts creativity and knowledge with the help of research. It means that to develop the nation, to develop the skills and capabilities of human beings it is essential to develop the research as research development can bring change in society and economy.

#### **Socio Economic Factors and Change**

Socio means society and economic means economy. Socio economic factor are –economic growth, Gross Domestic Product, per Capita Income, human capital and technology, literacy, level of employment and poverty etc. Socio economic factors of nation are factors whose development can bring prosperity in a nation and lead nation towards the developed countries. Positive Change in socio economic factors means to bring change in economic growth, Gross Domestic Product, per Capita Income, human capital and technology with having improvement in technology and making inventions in them. Thus with the help of the socio economic factors nation can attain economic growth.

#### **Relationship between Research Development and Socio Economic Change**

Less developed countries are those countries where the economic growth is less as compared to the developed countries. The reason of less economic growth in less developed countries like India is the poor level of technology , less and inefficient human capital , less gross Domestic Product and low level of tertiary education. Till these factors are low, less developed countries cannot attain the prosperity and the high level of the economic growth.

There is a great need to bring change in less developed countries economy and society. Government in less developed countries invest money in the field of research. Government of India has its view that development of research can bring socio economic change and take the nation to the area of developed countries as the government of developed countries has also invest money on the research.

The following socio-economic factors can be progressed with the help of the research development.

1. Investment in research will bring improvement in research development which will improve the socio-economic factors such as economic growth and Gross Domestic Product and Per Capita Income.
2. Investment in research will be helpful in improving the human capital and will increase the efficiency in work.
3. Investment in research will improve the technology.
4. Investment in research will be helpful in attaining the literacy.

So, the study of research development and socio economic change can be done with the help of the following fields.

1. Improvement in the economic growth
2. Improvement in the Human Capital
3. Improvement in the field of tertiary education
4. Improvement in the field of Technology
5. Improvement in the literacy rate
6. Improvement in the field of employment

#### **Objectives of The Study**

The objective of the study are as follows:

1. To know how the research can be developed.
2. To see the impact of research on the socio economic change in Indian economy.
3. To know the variables responsible for socio economic change.

#### **Review of Literature**

Review of literature is essential to see the work done by the previous researchers on the same topic and review helps to have the deep understanding of the topic. Review of the study helps to find out the research gaps present in the previous studies.

Christiya (2011) the paper reveals that research and development is essential for the country development. The main objective of the study is to find out the impact of research and development on the company growth. 12 mining companies of Indonesia have been taken for the study to find out the economy growth. Primary data has been collected for the study.

Higgins (2012) the paper will study the impact of research on technological development and will study how the technology will improve the education system and child attainment. The aim of the study is to see how research and investment in technology can help in attaining the educational improvement. Primary data has been used in the study. The result of the study declares that there is significant relation between research in technology and educational improvement.

Paas (2013) the study reveals that socio economic development has its impact on the economic viability. Socio economic development is essential to see and assess the policies assessment of the nation. The study makes use of farms to see the socio economic development and its impact on the economy growth. Time period of the study is 2001 to 2006. The study reveals that development of technology in farms is essential to have socio economic change.

Khan and Rehman (2014) the paper deals with significance of research and development on the economy growth. Time period of the study is 1971 to 2008. Ordinary least square method has been used to find out the impact of research and development on the Gross Domestic Product of Pakistan. Secondary data has been used. The results of the study reveals that there is strong and significant relationship exists between research and development and the economy growth.

Nicolaidis (2014) the study reveals that research development is essential for the economy growth. For the development of research there should

be strong relationship between the education and industry. The success of the research brings socio economic change in the society. The objective of the study is to see what is the impact of research on the arts and culture of the society.

Haris (2016) the purpose of the present study is to see the impact of technology on the educational attainment of the child. Research has been done in technology and its impact upon students performance has been seen using the primary data. The results of the study declare that technology is a milestone for the achievement of educational needs of the students. The limitation of the study is less importance has been given to higher education research and development on the economy growth.

**Research Methodology**

This will be all India study based on secondary sources of data to be collected from published and non - published sources.

**Sources of Data**

As mentioned above, the study will be based on the secondary sources of data. Data will be collected from Primary Census abstract Report's, Journals, Periodicals, books, weeklies, News papers and clippings.

**Dependent Variables**

Employment, Education and Gross Domestic Product

**Independent Variables**

Research Development

**Table 1 Indicating Literate Population in 2011 (Primary Census abstract)**

Literates	Absolute Numbers			Literacy Rate		
	Total	Rural	Urban	Total	Rural	Urban
Persons	76,34,98,517	48,26,53,540	28,08,44,977	73.0	67.8	84.1
Male	43,46,83,779	28,12,81,531	15,34,02,248	80.9	77.2	88.8
Female	32,88,14,738	20,13,72,009	12,74,42,729	64.6	57.9	79.1

Data based on Primary census abstract

**Table 2 Indicating Gross Domestic Product in India from 1991 to 2017**

Years	GDP (Current US\$)
1991	274.84
1992	293.26
1993	284.19
1994	333.01
1995	366.60
1996	399.79
1997	423.19
1998	428.7
1999	466.84
2000	476.64
2001	493.93
2002	523.77
2003	618.37
2004	721.59
2005	834.12
2006	949.12
2007	1238.70
2008	1224.10
2009	1365.37
2010	1708.46
2011	1822.99
2012	1828.98
2013	1863.21
2014	2042.56
2015	2073
2016	2250.99
2017	2457.75

Source: RBI Publications (World Development Indicators)

**Research Development and Economic growth**

Government and policy makers make implications that for the economic growth investment in research is essential. It means that there is direct and positive correlation between research and economic growth. Economic growth means growth of Gross Domestic Product, Per Capita Income,

Technology and reduction of poverty. Research increases the working capacity of the firms as it helps in improving the skills and capacities of workers with the improved technology. Efficiency in work brings good and high quality of production. In return of efficient production demand for product will increase which will lead to high level of employment. So, there money and real income will increase. The increased income due to research development will increase the Gross domestic Product and National Income of the economy. Thus it proves that investment in research will lead to economic growth.

**Research Development and Human Capital**

Human Capital means knowledge, skills and attitudes of the human beings. There is direct and positive correlation in Research Development and Human Capital. Human capital may include specific technical knowledge, skills in research approaches, communication and IT skills and so on, as well as attitudes which enable the researcher to ask questions and seek out new knowledge. Researchers have highlighted that capacity building can be supported by outsiders but must be led by the individual. Before the investment in research there was no or less human capital. Even there was human capital available in the India, the whole of the human capital was sent in to the abroad as there was no any area available to the humans to increase their income and to lead a settled life. So, to solve the problem government of less developed countries decide to improve the situation of brain drain by investing in research.

The output from investment in research is attained in the form of increased knowledge and research findings of the human beings. Human beings can understand the problem in a systematic manner with the help of the research. They think scientifically and give solution of the problem in a scientific and systematic manner. They also have the capacity to improve the work and technology with the help of the new innovations and inventions. Efficient human capital will get attractive and good work with great

ease. Thus there will be no problem of brain drain. Human capital will improve the production and its qualities by making use of his skills and new technologies. It will lead to increase in the National Income and gross domestic product. So, Research development is essential for the socio economic change.

#### **Research Development and Education**

Research development also puts its impact upon the education level. There is a strong feeling among the academics is that research is helpful in carrying out quality of teaching in the field of tertiary education. Tertiary education is also called higher education. Government in less developed countries like India should spent on the research in the field of tertiary education as it will help in improving the standards of the universities and colleges. As investment in research will bring effective change in the thinking and creativity of the students in the colleges. They will make use of the innovations and new kind of technology and thus with the change in the tertiary education research will lead to economic growth. Improvement of education will be helpful for bringing increase in the National Income and will work in the way to make India developed nation. So, Investment in research will be helpful for socio economic development.

#### **Research Development and Technology**

Research development also puts its impact upon the technology. Technology efficiency can be enhanced by the research development in less developed countries. Developed nation has more efficient resources as the technology used by them in the production is most effective and efficient. For the work, research will be done in the field of technical areas, business in a systematic manner. New innovation and inventions in the field of technology will be created with the help of the research .New technology will produce output of high quality at cheap rate. The cheap product will increase the amount of the exports and Foreign Direct investment in India. Thus, it will lead less developed countries to fourth stage of growth- Drive to maturity. Thus, National Income of India will increase and will be able to attain socio- economic development.

#### **Research Development and Literacy Rate**

Research development also puts its impact upon the literacy rate. Literacy rate is the rate that gives information about the people of nation who are involved in education. Literacy rate can be improved or increased by the research development in less developed countries. Less developed countries can also be recognised as countries where literacy rate is less. Research development and literacy are interrelated with the help of the tertiary education. Investment in research can create skills, efficiency and technical vision among the students of the less developed countries. They can solve the problems effectively and can spread among the society that education is essential. It will help in involving more of the people of India in the scheme of education. Thus there is a positive relationship between the research development and literacy rate. In these ways,

investment in research development will bring change in socio economic factors.

#### **Research Development and Employment**

Employment is very essential for the economic growth of a country. If a country has less employment, people will live in poverty and there will be no economic growth. On the other side if employment is more, people will not live under the poverty line. There income will be more and economic growth will be more. The reason behind the less employment in less developed countries is that people are not well educated; they do not know the technique to make efficient use of technology. It was due to people did not have the skills, trainings and capabilities. So, the government of less developed countries have to take some steps to solve the problem of the unemployment. One of the step is to invest in the research as it is able to create critical thinking among the students and citizens and they can make use of efficient technology which will increase their efficiency. People of less developed countries will get job easily and thus leads to increase in employment level. So, investment in research development will bring change in socio economic factors.

Positive impact of research development on the social economic change- It is clear by the above mentioned points that investment in research or development of research will be responsible for the economic growth by having change in the socio economic factors for a short and medium time period. It is clear that , for the development of a nation Gross domestic product , efficient technology , high level of employment, literacy rate ,human capital and good quality of education is essential . If these factors are not available nation will be considered as less developed or underdeveloped nation. To solve the problem government of nation take various steps. For the purpose government build research institutions. Development of research and investing in it is one of the steps.

Research improves the skills, critical thinking and creative ideas of the human beings and brings change in the society and removes inequality from the society in the form of provide more employment and reduces the poverty from the society. Due to research, society will think about the problems in a systematic and scientific manner. Thus, they will be able to find the scientific solution of the problems prevalent in the economy and society. Following are the points which show reasons for the positive effects of research on the socio economic development.

1. Researchers who enter in private sector organisation give contribution to innovative ideas and improve the human capital.
2. Investment in research indicates critical thinking of researcher and increased capacity of academia to absorb prevailing knowledge.
3. History has also reveals that critical thinking is responsible for the economic growth.
4. If there will be an appropriate or adequate investment in research to develop the technology and inventions Improved technology and

innovations are responsible for changes in socio economic development.

5. Investment in research bring change in the pattern of education. Now due to critical thinking they will make effective use of the technology.
6. History reveals that interconnection of academics and industry will bring tremendous change in the efficiency of work with the human capital. Thus leads to socio economic development.
7. Researchers who enter into the private sector organisations contribute in their efficiency with the help of the innovations and techniques.
8. Human capital can be developed by the tertiary education which is effectively responsible of rise of innovative ideas and skills. The building of human capital is also in existence with the help of the research.
9. Many vaccines which contribute to the socio economic change and development were developed by the public research institutes. For example, the live attenuated polio vaccine was developed at the University of Cincinnati.

Thus, it is clearly revealed that research helps in bringing the socio economic change. Is it really say that research development bring socio economic development, Up to one extent research development is helpful in bringing socio economic change. But, it is not only the single factor that is responsible behind the socio economic change. History reveals that research can bring change but up to limited extent. Research in low developed countries is less possible as government of India has less receipts to establish the research institutions. Even yet there is no evidence available that there has been any effort done to improve the tertiary education by having investment in research. It is clear that technology will bring change in the in development. But all type of technology will not bring change. So, research bring change in socio economic development but to a limited extent.

#### **Impact of Research Development on The Economy of Less Developed Countries Like India**

Indian economy is sixth largest economy in the world. How one can say that India is the sixth largest economy in the world. Answer is that Gross Domestic Product, National Income can measure it. So, development of nation is measured with the help of the Gross Domestic Product. India is a mixed economy nation. It has been divided in to various sectors such as agriculture sector (Primary sector), industrial sector (Secondary Sector) and services sector (tertiary sector). Research has its impact on different sectors of the economy.

1. Impact of research on primary sector
2. Impact of research on secondary sector
3. Impact of research on tertiary sector

#### **Impact of Research Development on Primary Sector**

Primary sector includes agriculture and activities related to fields such as, horticulture, gardening, poultry farming and flora. Industries engaged in the extraction of natural resources such as crops, oil and ores. In less developed countries, initially primary sector was not well developed. At that

time production was of cheap quality and the exports of Indian primary products was less. To solve the problem various steps were taken by the government In less developed country like India. One of the steps was the establishment of the research institutes. Due to the research various researcher has been emerged and bring technological advancement in primary sector. Government has received the idea from the developed countries,

Due to more efficient production in under developed economies, given farm machinery, better information available to farmers, and often larger scale. Thus, their production has increased and it is of good quality that can be exported to other nations . thus, Research is helpful in bringing positive change in the primary sector which has 18 percentage share in India's Gross Domestic Product. Technological development is also helpful in the commercialisation of the primary sector.

#### **Impact of research development on secondary sector**

Secondary sector includes industries that produced a finished, usable product that is also involved in construction. Secondary sector take the raw material from the primary sector and produces the final product. This sector is divided in to two parts light industries and heavy industries. For the development of a nation development of heavy industries are more essential as compared to the light industries. Developed nations has efficient technology and effective human capital .with the help of them it, developed nation has economic growth, These developments can also be attain by the less developed countries if they have modern technology available at cheaper rate. It can be possible with the help of the development of research. So, research institutions have been developed by the less developed countries government. As research is helpful for bringing change in ideas, skills and technology. Development of secondary sector is essential as it supports both the primary and tertiary sector. Secondary sector contributes 27 percentage in to the Gross Domestic Product.foreign Direct Investment can be attain due to the research development . Thus Research development can bring change in socio economic developments with the help of the secondary sector and contributes to make India developed nation. So, research development is essential for the economic growth.

#### **Impact of Research Development on Tertiary Sector**

Tertiary sector involves services like banking, insurance and transportation. Services were not given due importance as described services as non-productive sector. It means that service sector is not able to produce the products. It was also estimated that it could not help in economic growth but, all these things are wrong as they are very important and shares 57 percentage part of the Gross domestic Product. Less developed countries with the help of the creative skills, ideas, technology can improve the tertiary sector and all can be done with the development of research. This sector could play an initiator role for economic development, studies

pertaining services accelerated. One of the way to develop services sector is technological developments.

#### **Conclusions**

1. Investment in research by government by developing research institutes is able to bring change in technology and helps in the commercialisation of the agriculture sector and industry. Emergence of new innovations in less developed countries is major drive of economic growth which would increase this absorptive capacity.
2. Developed economies reveal that there is less correlation between the research development and tertiary education. The reason behind is that research helps in the development of the technology and skills which are of less use in the education sector.
3. Human capital is having positive impact upon the development and growth of nation that can be attain with the economic growth. It has great impact upon the government and finds out that human capital is attained with the research development. Research suggests that investment in doing research in low-income countries on its own will not lead to improved research capacity and that an effective and explicit capacity building strategy must be developed.
4. Number of methods has been used to develop the research and to bring economic growth. All methods that are adopted by government have highly impact upon the socio economic change and development.

#### **Suggestions for Enhancement in Research**

1. Government should come forward in the less developed countries and should organise programmes to provide research training
2. Government should open research centres in India.
3. Importance of research should be created among society by organising awareness programmes.

These are like suggestions to enhance the research and awareness regarding research in people to develop and bring prosperity in economy.

#### **References**

1. Chen, H.C. & Dahlman, C.J. (2004). 'Knowledge and Development: a cross-section approach.' *World Bank Policy Research Working Paper* 3366.
2. Cornell University, INSEAD, and WIPO (2013): *The Global Innovation Index 2013: The Local Dynamics of Innovation, Geneva, Ithaca and Fontainebleau.* <http://www.globalinnovationindex.org/content.aspx?page=gii-full-report-2013#pdfopener>
3. Grossman, G. M. (1993). *Innovation and growth in the global economy.* MIT press.
4. Guimón, J. (2013) *Promoting University-Industry Collaboration in Developing Countries.* *Innovation Policy Platform Policy Brief*
5. Heher, A. D. (2005) *Implications of international technology transfer benchmarks for developing countries.* *International Journal of Technology Management & Sustainable Development* . 2005, Vol. 4 Issue 3, p207-225.
6. Martin, B. R., & Tang, P. (2007). *The benefits from publicly funded research.* *Science Policy Research Unit, University of Sussex*
7. OECD (2013) *Commercialising Public Research: New Trends and Strategies.*
8. Romer, P. M. (1994). *The origins of endogenous growth.* *The journal of economic perspectives*, 3-22
9. Salter, A. J., & Martin, B. R. (2001). *The economic benefits of publicly funded basic research: a critical review.* *Research policy*, 30(3), 509-532.
10. Siegel, D.S., Westhead, P., Wright, M. (2003) *Science Parks and the Performance of New Technology-Based Firms: A Review of Recent U.K. Evidence and an Agenda for Future Research* *Small Business Economics*, 20 (2), pp. 177- 184
11. Quintas, P., Wield, D., & Massey, D. (1992). *Academic-industry links and innovation: questioning the science park model.* *Technovation*, 12(3), 161-175.