

IMPORTANCE OF INSTITUTE OF DIRECTIONAL RESEARCH IN INDIA

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ABSTRACT

Despite of numbers of IITs, IISERs, NICER, NITs, Universities and Research Institutes in India which are in full active mode, a new kind of institutes are required for fast, productive and speculation free development of rural and urban India. Through database analysis and field survey analysis I have reached to the conclusion that only an institute which would be able to bridge between academics and society, can improve our society with flawless solidity and chaos-less integrity. An architectural design of such an institute is proposed in this article.

Key words : Directional Research, Modified Social Growth Index, Scientific Aptitude of the Society

INTRODUCTION

“Of the 121 crore Indians, 83.3 crore live in rural areas while 37.7 crore stay in urban areas, said the Census of India’s 2011 Provisional Population Totals of Rural-Urban Distribution in the country, released by Union Home Secretary R.K. Singh” (*The Hindu*: July 15, 2015). It is also observed from 2011 census that the growth rate in rural areas are decreasing while that of urban areas remains constant. On the other hand, for the first time, Indian Institute of Science (IISc) Bangalore marks as India's debut in top 100 universities ranking in engineering and technology very recently, published by The Times Higher Education, a weekly magazine based in London (*Business Standard* : November 13, 2015). These divergent perspectives of the growth of our science and society conflicts to the words : 'Progress of society is the reflects of the progress of the science and technology of that society'. This discrepancy is scrutinized and prescribed for synchronization.

SOCIAL GROWTH INDICES (SGI)

In 1993 Brock (Brock, 1993) tried to explain social growth in terms of three philosophical parameters. According to Brock good life comes from rational thoughts, satisfaction of performance and achievements of desirable at the personal level. In the late nineties of the last century, two new scientific approaches were proposed to measure the growth of a society – objective and subjective well being. Land (Land, 1996) provides a history of these two indicators as the progress of social

movements. Land (Land, 1996) questioned about the equality of social growth and economical growth. His approaches based on subjective well being (SWB) may be described in terms of people's conscious experiences of hedonic feelings and cognitive satisfactions.

Merits and demerits of social indicators (objectives) and SWB are discussed in details by Diener and Suh (Diener and Suh, 1997). They have shown that there are several factors which undoubtedly influenced the growth of a society is not included and difficult to parameterize to include in economic growth indices. On the other hand, there are factors in both objectives and subjective well-being which could not be evaluated accurately and hence incorporate inaccuracy in the interpreted results based on Land's method. Thus there is a need for weighted blending of economical growth indices (EGI) with social growth indicators.

MODIFIED SOCIAL GROWTH INDEX (MSGI)

The growth of a society may be well described with in life-style (LS) and life-insurance (LI) parameters. Industrialization improves the life-style and scientific advances along with scientific attitude of a society insured the life in a society. So far, in EGI value of life is ignored. Without measurement of life security of a society how can we call a society is developed? An advanced society should be well organized and give immense importance on security of life in all respect. Individual satisfactions, good life feeling, objective and subjective well-being, etc. indices should be incorporated in life-style. Thus, we can summaries the modified social growth index (MSGI) as follows -

$$MSGI = A \times LS + B \times LI \quad (1)$$

A and B in equation (1) are the percent contribution to MSGI. Values of A and B should be scaled properly to get more accurate results. But, one can take equal contribution from both these component for simplicity. Further, both LS and LI should be expressed in terms of social indicators (SI), SWB, EGI etc. There are some parameters which influence both LS and LI but in different direction and having different percent contribution. Details of MSGI would be discussed in coming articles. At present, MSGI would be treated as a single index for social growth of a society. Here it should be mentioned that effect of scientific development is directly included for the first time in social growth index as SAS (Scientific Aptitude of the Society). In the present article I have concentrated only on SAS.

PRESENT STATUS OF SAS IN INDIA

To the best of my knowledge there is no survey on SAS neither in India nor outside India at the society level. Scientific Aptitude of school students and university students are available. Varghese (Varghese, 2005) have shown that trend in science education and research at the university level is declined. This is probably due to the uncertainty in future life i.e. with respect to job finding. Another study by Rao (Rao, 2004) on secondary and higher secondary students exposes that the scientific attitude and aptitude in secondary and higher secondary students are average. Thus, till now SAS value

of any Indian society is very poor. Particularly in rural area lot of superstitions are still there. The lack of scientific awareness and slow implementation rate of scientific and technological advancement in our society has the major contribution to stop (in urban area) and decelerate (in rural area) the growth of our society which has been observed from 2011 census.

ATTEMPTS AND FLAWS OF OUR AWARENESS CAMPAIGNING

So far several attempts have been taken by both government and non-government organizations to speed up the scientific awareness in our society. For example, '*Nirmal Gram Yojana*' was initiated by ministry of drinking water and sanitation in 2003. Government announced to prize the best at the *grampanchayat* level, block level and district level to make a success of this project. But, an assessment in 2013 reveals that its success rate is very bad. The situation is even worse than what it reported. Still we should appreciate this attempt as it has some contribution to improve SAS of our society within few restricted areas. Another very recent attempt should be mentioned here. '*Swachh Bharat Mission*' was initiated and implemented by ministry of urban development and the prime minister of India, Mr. Narendra Modi in 2014 which also unable to make remarkable change in our society except a huge propaganda at its opening day.

The main reason behind these catastrophes is lack of proper monitoring of the programs. In most of the cases politicians were in the supreme charge and tried to make more announcement than success. We can't give charge to any private organization where there are chances for misuse or legacy. In my consent, well educated person directing an academic institution may execute such program with better success. Thus we need institutions which would act as a local government as well as policy maker along with its normal mode of academic research and education. Such type of research institutes or organizations are not present in India till now. We can call this type of institute as **Institute of Directional Research (IDR)**. An institute of this kind should improve the scientific awareness and sustainable development of our society. A very brief proposal about IDR is given in the next section. Detail architecture would be given in coming articles.

BRIEF DESCRIPTION OF IDR

To upgrade India from a developing country to a developed country our education level should be uplifted. According to the AICTE report 2012 our annual intake capacity in technical diplomas and degrees is 3.4 million and in science, medicine and agriculture is 3.1 million (UGC report 2010). But, only increase of the number of institutes will not guarantee the improvement of education level. We need new institutes of different categories which will work in different ways as mentioned in the earlier section and termed as IDR.

Basic goal of IDR would be a research along with general education system. But the intention and implementation method of research and education would be of different kind. The word '*Directional*' implies that the first and foremost research objectives of this institute should governed by

the urgent requirements of the projected area (PA). For example, a branch of IDR at any location of Sundarban will focus researches on agriculture based on salty soil, drinking water and water for agriculture, health problems and its remedy according to its climate, energy resource development from the available raw materials etc. It is obvious that a medicine of a particular disease may not be effective equally for two people from two different climates as their body structure and capacity are different. Same is true for agricultural plants. Thus, an area specific research should be done with immense importance. Also, there should be a clear-cut plan for resource utilization and enhancement according to the PA. As stated above, all these research out-come will benefit all people of the PA through its immediate implementation which should also govern by IDR itself.

IDR will also regulate the lower level education systems starting from the ground levels situated in PA. The education system should be of an open system. There would not be any class system rather a level system. In a Level Specific Education System (LSES) there would not be any time bound and subject bound. In this education system gradation or certification would be divided into two sections; '*Character development*' and '*Knowledge development*'. There should be mandatory activities for all students for their good health and character building. For knowledge development section everyone has to read few basic subjects to know about ourselves and the importance of our environment. A student would be allowed to choose other activities and subjects according to his/her choice of interest and as suggested by the mentors. Assessment of a student would be done by his/her regular activities, problem solve capabilities and one-to-one and one-to-many discussions on a particular topic. Traditional method of examination should be excluded. The education system would be in home type or away home type. Every branch of IDR would focus only on a small PA but should well connected to the central monitoring body. Its main focus would be to make its PA susceptible to global and local crisis.

CONCLUSION

In this brief article new index to measure social growth is presented which is termed as MSGI and includes effect of SWB, social indicators, EGI and other important parameters which were not considered in other methods so far. Influences of scientific developments on social growth is included directly as SAS in the present method. As at present SAS value of different societies of India is very small. According to 2011 census report our social growth has stopped in the urban area and decelerated in rural area despite of our scientific high reputation in world ranking . Negligence of SAS may be the reason for this anomaly. A research institute devoted to directional research should be helpful for sustainable development of our society. In this article details about MSGI and IDR is not presented which would be described in coming articles.

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REFERENCES :

The Hindu: July 15, 2015

Business Standard : November 13, 2015

Brock, D. 1993, '*Quality of life in health care and medical ethics*', in M. Nussbaum and A. Sen (eds.), *The Quality of Life* (Clarendon Press, Oxford), pp. 95–132.

Land, K. C.: 1996, '*Social indicators and the quality of life: Where do we stand in the mid-1990s?*', *SINET* **45**, pp. 5–8.

Diener, E. and Suh, E. 1997, '*Measuring quality of life: Economic, Social and Subjective indicators*', *Social Indicators Research* **40**, pp. 189–216.

Varghese, G. 2005, '*Declining Trend in Science Education and Research in Indian Universities*'. Web : <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.540.8459&rep=rep1&type=pdf>

Rao, D. B. 2004, '*Scientific Attitude Scientific Aptitude and Achievement* ', Discovery Publishing House, New Delhi 110002.