

Executive Summary

Vision 2030 for sustainable development is a global commitment and “action plan for people, earth and growth”. It is fundamental, comprehensive and inseparable, with the added requirement of leaving no one behind. It consists of 17 Sustainable Development Goals (SDGs) that are integrated and inseparable and bridge the three dimensions (economic, environmental and social) of sustainable growth; and show the scope and purpose of the current universal agenda. Research plays an important role in shaping the future and hence investigating the effect of this research on the UN’s 17 sustainable development goals for the betterment of mankind. Although the SDGs are divided into 17 distinct components, the objectives are inextricably linked, creating an indivisible structure, achieving one objective or aim can aid in the achievement of other objectives.

Importance of this study

Impact study of research helps to focus on the main purpose of research instead of just the research process. How research is done, communicated, and evaluated have brought a lot of barriers between research itself and those who may benefit from it. Reducing those barriers will help apply the research to make changes in the real world. Focusing on research impact, thus, helps us to ensure that we get the best possible returns from an investment that we- as a society- make in research. This study explores the major funding agencies who allotted research funds in the high priority areas in India by analyzing the funding acknowledgement section of the research articles retrieved from Elsevier’s Scopus where it was observed that the Department of Science and Technology (DST) is the most prominent funding agency in India followed by Department of Biotechnology (DBT), Council of Scientific and Industrial Research (CSIR) and University Grants Commission (UGC). Also, a practical approach to describe the impact of research work using quality metrics like the number of citations received, View counts, Field weighted citation and Field weighted view impact is made in this

paper where the results showed that the quality of the funded research was greater. But there were some of the funding agencies' publications that had the highest number of citation count and impact despite having a smaller number of publications and thus it is not only the huge number of Scholarly Outputs that matters when computing the Quality of the publications. The study is important because it will give an idea to formulate a policy and strategize the funding area in line with 16 SDGs.

Among the survey population, 50% are doing the awareness classes on the importance of research grants, grant writing, budgeting, legal aspects of grants etc., 83% of the survey population is circulating the fund calls to the institutions. 87% are not having a research grant management tool in their institution, but 70% are aware of the importance of grants in the university ranking, 73% of the population doesn't have a research policy or strategic planning for the promotion of the research fund related activities. The important note here for the funding agencies is that while going for open access publication most of the time researchers had to avoid the acknowledgement part so that they can avail the article processing charge (APC) fee waiver given by the publisher. This can be avoided by providing budget provisions while sanctioning the research grant to the PI. Implementation of provision This will be a great initiative from the funding agencies if they make provisions to handle APC charges while budgeting. While quantifying the research output impact we can easily track all funding data from the acknowledgement as data is the brain of intellectual implementation to societal excellence.

Objectives of the study

1. To quantify the growth of a scientific publication in terms of government funds and policies.

2. To evaluate the productivity and quality of research of an individual, organization and the state of Karnataka in terms of the needs, capacities and funding policies relevant to India.
3. Development of models (metrics) for measuring outputs of S & T investments.
4. Development of suitable indicators, including not only publications, citations, and patents, but also other performance-markers- for example, institute/scientist location, age, per capita funding by Government etc.- for R & D assessment. This is highly significant for developing countries where young scientists trained/returning from abroad find placements in relatively new institutions and are thus handicapped by lack of funding, collaboration possibilities etc.
5. Development of an approach to gauge the value added to R & D efforts by government funding of public and private universities/national labs in the State of Karnataka.
6. A method for assessment of direct and indirect benefits of R & D on research output by public and private universities/national labs in the State of Karnataka.

Methodology details

Research Approach

Mixed method design -Sequential Explanatory Design (Quan – Qual)

Phase 1 - Database/ bibliometric survey (quantitative)

Phase 2 -Survey on information on government research funding and technical hitches experienced by researchers. (quantitative)

Sampling Design

70 institutions are selected for the collection of data.

Data Collection

The triangulation strategy will be used in this study are a combination of the following data sources:

Bibliometric Review- The use of publication lists retrieved from the suitable indexing and abstracting database (Scopus), Analytical database (SciVal). Web site search of the intuitions may also consider getting the data

Survey Questionnaire - Survey on information on government research funding and technical hitches for researchers.

Results & Discussions

United Nation's vision 2030, with its 17 sustainable development goals, lays out an ambitious blueprint for our planet's long-term viability. It constitutes a significant shift in policy toward research, giving the scientific fraternity a socially and politically determined mandate to contribute to the attainment of the SDGs and that research will be among the key important action plan for vision 2030, the efforts were made in this study to explore the impact of this research on the quality education and funding in India. Funding distribution in the state of Karnataka is quantified and plotted based on the Subject area. The allocation to institutions by different Indian funding agencies during the year April 2005 to March 2010 and from April 2010 to March 2017 is collected and plotted using Tableau software. This report explores the major funding agencies who allotted research funds in the high priority areas in India by analyzing the funding acknowledgement section of the research articles retrieved from Elsevier's Scopus where it was observed that the Department of Science and Technology (DST) is the most prominent funding agency in India followed by Department of Biotechnology (DBT), Council of Scientific and Industrial Research (CSIR) and University Grants Commission (UGC). Also, a practical approach to describe the impact of research work using quality metrics like the number of citations received, View counts, Field weighted citation and Field weighted view impact is made in this paper where the results showed that the quality of the highest funded research was greater. Keeping the high quality and quantity metrics we have tried to create a ranking for funding agencies taking the data from the Scopus

database and analysing it using the SciVal analytical tool. Top funding agencies like DST, DBT, CSIR, DSIR, and UGC ranked 1st in quantity and quality both. The ranking is satisfying the funding amount they have given for the last ten years to the Indian institutions.

Policy implication, Suggestions & Recommendations:

- Evaluate the outcome of funding in relation to SDGs for future research grant allocations.
- Considering budgeting allocation for Article Processing Charges to promote Open Access publishing to improve citations.
- Make it mandatory to acknowledge the funding agency (even after the completion of the project) for prolonged research continued in the funded research area.
- Fund distribution should be generous to all other research institutions (Private/State institutions) at par with premier institutions.
- Need of a Grants Office in all the Institutions who are applying for research grant from funding agencies.