Adopting Multi-Disciplinary Perspective to Understand and Resolve Social Challenges

Ram Kumar Mishra¹, Geeta Potaraju²

¹Director, Institute of Public Enterprise (IPE), Hyderabad, Telangana State
²Assistant Professor, Centre for Governance and Public Policy, Institute of Public Enterprise (IPE), Hyderabad, Telangana State

Abstract- Specialized knowledge has been given significant importance since time immemorial. But what we are witnessing in the present scenario is that problems or challenges that are faced by societies have changed in a significant manner and have taken multiple dimensions. In order to deal with these real world problems, the specialized or specific knowledge would not be enough. There is a need for integration of knowledge through collaborative and multidisciplinary research in order to find solutions for these real time problems. The present paper highlights various aspects of multidisciplinary research approach and shows that this is the only way out towards problem solving. The present study also explores the approach adopted by various international and national funding agencies which are involved in providing funding and infrastructure support to governments, civil societies and individuals to strengthen collaborative multidisciplinary work in social science research.

Keywords: Multidisciplinary Research, Social Science, Societal Challenges

I. INTRODUCTION

Since the beginning of civilization, advancement of knowledge has taken a path of specialization, starting with the dependence on nature to gradually moving towards scientific knowledge and developing specific tools and techniques for understanding issues. With the societies evolving over a period of time and the challenges getting more and more complex, the need to apply these specialized knowledge systems, techniques and tools for resolving societal challenges needs a rethink leading to a shift in thinking. In the post globalization era, societies face varied problems and challenges which are not the same as before. The specialized knowledge including technology advances are not enough to deal with these types of problems. There is a necessity for integration of knowledge drawing from various disciplines and in a collaborative manner work through a multidisciplinary research approach. The interest towards understanding complex societal issues, make it necessary for the multidisciplinary perspectives and application for various problems.

There are many examples of multidisciplinary approach with the application of innovation/knowledge from one discipline to other. With the advent in information technology, many social issues and challenges are being addressed through use of technology. For example, patients living in remote and rural areas, in India are getting the best medical professionals to diagnose their ailment with the help of internet technology and are being treated at their locations. The other recent example in India is the usage of Aadhar as a proof of identity for the poor beneficiaries of various government schemes who have started receiving their benefits directly into their bank accounts by avoiding middle men and brokers. This process has brought in an element of empowerment in the rural masses by ensuring speedy and just service delivery. As a part of digital governance plan, many CSC/internet kiosks have been set up in rural and remote locations in India. These centers are providing the much needed support to citizens and providing access to government benefits without making these individuals travel to the headquarters and have interface with the officials. Let us also consider a few real world problems such as the problem of global warming, climate change, need of sustainable development and so on and forth. Various factors influence the cause of these critical situations including greed for power, money and domination. The world community has been trying very hard through various forums to bring together nations to recognize the critical situation and find solutions. But we have though not succeeded much in any of these above areas. The reason may be that a holistic approach to the problem has yet not been put in place.

Application of knowledge in the new field gives a leading advantage and a unique angle to solving outstanding and complex problems and can throw up new avenues of dealing with societal issues. Teaming up and making joint efforts with varied research groups from various disciplines will bring in collective expertise and gain synergy to the group and can go a long way in solving critical issues. This will result in better solutions for complex problems. Nevertheless, we are in times when countries over globe are confronting issues of governance and there are many questions staring for solutions which are more or less similar in all the countries in their nature and form. Looking at these recent trends across the world the relevance of multidisciplinary perspective to research especially in social science and humanities becomes very important.
II. NEED AND RELEVANCE

2.1 Why Multidisciplinary Research?
Advancements in science and technology have led to greater focus on specialization, both in the fields of natural sciences and social sciences. Rapid industrialization and globalization have given rise to new challenges which have no straight jacketed solutions. The complex global problems faced by mankind today has no simple solutions, and in order to deal with these real time problems, there is a need to bring in synergy from various disciplines through the approach of multidisciplinary research. Multi-disciplinary research is inquiry that requires combining theories & concepts, methods & practices, thinkers & perspectives, phenomena from more than one academic discipline. Basically, multi-disciplinary research is the integration of knowledge of more than one discipline for a common problem solving purpose. There are some other terminologies like pluri-disciplinary or cross-disciplinary which have also been used interchangeably with the term multidisciplinary. Multi-disciplinary research is important to communicate the gap in the modern academic world and is helpful to bring various intellectual resources in a common platform to bring greater social rationality and justice.

III. REVIEW OF LITERATURE
As a part of the study a review of literature conducted to understand the perspectives of multidisciplinary research in social science and impact of the research outcomes in policy making and implementation towards addressing various societal issues. Since mid of the twentieth century interdisciplinary research has become an important topic to be concern for knowledge production and research funding in academia and policy making institutions (Katri et al., 2010). Young (2000) focuses on the preliminary requirements for a multidisciplinary research approach and identify three such characteristics which are important to work together i.e. expertise, common goal and methodology. Good coordination, respect and trust among co-workers in a collaboration research team, good leadership, apparently distinct tasks and deadlines and ethical accountability. The multidisciplinary research is the research process where disciplines work together and the work of each added to others (McDonnell, 2000) where time management as an important issue as different disciplines, funding bodies and client groups work together with their own individual working style and tempo of work (Coco, 2004). Rowland, (2003) defines the interdisciplinary research approach as the process of research where different discipline come together and work together by taking support of their own theoretical and practical framework and emerge as a new discipline of problem solving. As in both, the multidisciplinary and the interdisciplinary research process disciplines come together and work for same common purpose, where meta-level theory and practice are used to identify, review and design mechanism which can be used in multiple propose of problem solving and also can be used across different discipline, therefore the present study considers both the terms as conceptually same and used as compatible. Lawrence & Despres (2004) propose that interdisciplinary approach start with complex problems and simplify the problem by dividing it into different parts based on the disciplines and combine the solutions as an integral part. At the same time, Newell (2004) mention that interdisciplinary has multiple approach and answer to solve any one problem, as one answer constructed through any interdisciplinary approach may clash with another answer constructed from the insights of some other discipline. Studies also propose that the inherent complexity in interdisciplinary makes evaluation difficult (Klein, 2006). The interdisciplinary researchers are always good in terms of innovation, economic growth or social needs and more successful in achieving infiltrate and applicable output (Rafols & Meyer, 2008). Jolly & Kavanagh (2009) identify the two distinct parts of universities as discipline and practice. Discipline are the type of phenomenon in the world and are focus towards the interest (i.e. sociology, psychology), whereas, practices are focus on problem (i.e. education, art). They argue the consequences of discipline and support interdisciplinary practice to reformulate knowledge. Shahin et al (2014) recognized the need for multi-disciplinary approaches of research and mentioned that integration of social science research with the technology driven research would lead to a greater societal and policy relevance for technological research and would be helpful to achieve societal goals.

IV. ESSENTIALS OF MULTIDISCIPLINARY RESEARCH

4.1 How is Multi-Disciplinary Research done?
Multi-disciplinary research is a process which involves a combination of ideas and insights from various theories and methods of different disciplines which are integrated into a common thread. There are many aspects of multi-disciplinary research: A multidisciplinary research process needs great clarity in the questioning process. During the formulation of the research question, there should be no scope for bias and a thorough understanding of strengths & weaknesses in each discipline.
During the process of information gathering various ideas and perspectives from different disciplines must be integrated and adopted for the study. While framing of the research study multiple perspectives from various
disciplines must be integrated to make it more creative and inclusive. There should be adequate scope for improvements and changes during the course of the research for making it more comprehensive.

4.2 Thrust Areas of Multidisciplinary Research
Multi-disciplinary approach has been adopted as a fundamental mechanism in research by of the disciplines in social sciences. Pure sciences have also opened up to look at the problems of the society in a much more comprehensive way and are integrating the benefits of sciences to social well being to arrive at an acceptable and sustainable solution. Some key areas where multidisciplinary approach is being adopted for solving various practical problems like Education, Health, Livelihoods, Gender, Water resources, Environment, Urban and Rural Development, Terrorism, Corruption etc. Collaborations among various key stakeholders are being sought for studying the issues related to these areas and efforts are being made to derive at a sustainable solution for these issues.

Table 1: An indicative table of collaboration among various stakeholders

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Areas</th>
<th>Issues</th>
<th>Disciplines</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Education</td>
<td>Sociological and political dimensions including Governance, Accessibility, Quality, PPPs, Financing issues</td>
<td>Sociology, Political Studies, Public Administration, Economics, Finance, Information Technology</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
<tr>
<td>2</td>
<td>Health</td>
<td>Accessibility, economic, sociological and political dimensions of health care, Governance issues, Community health, health financing, PPPs, Resource costs of morbidity and under nutrition, Gender and health care</td>
<td>Public health, Sociology, Political Studies, Economy, Science, Information Technology, Education, Finance, Medicine, Nutrition,</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
<tr>
<td>3</td>
<td>Livelihoods in the rural Sector</td>
<td>Water Resources and Cropping pattern, Gender issues, Micro financing and livelihood, Child labour and women empowerment, Migration, Food security issues, Farmers’ suicide</td>
<td>Sociology, Political Studies, Economy, Science, Information Technology, Education, Finance, Medicine, Nutrition, Agricultural, Health care, Earth Science, Atmospheric Science, Gender Studies etc.</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
<tr>
<td>4</td>
<td>Sustainable Development</td>
<td>Environmental economics Forest Resources, water resources and sustainability of Development Challenges of drinking water supply in rural and urban areas, Inter-state distribution of river water</td>
<td>Geo-sciences, Physics, Sociology, Political Studies, Economy, Information Technology, Education, Finance, Public health, Agriculture</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
<tr>
<td>5</td>
<td>Gender</td>
<td>Empowerment issues, socio-cultural and economic issues, health and nutrition issues, economic independence related issues, protection against sexual harassment and other issues</td>
<td>Sociology, Psychology, Political Studies, Public Administration, Women’s Studies, Economy, Information Technology, Education, Nutrition, Health care</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
<tr>
<td>6</td>
<td>Urban &amp; Rural Development</td>
<td>Sanitation, health care, housing, transportation, livelihood issues etc</td>
<td>Economics, Sociology, Psychology, Political Science, Public Administration, Planning and Architecture, Information Technology, Engineering and Construction</td>
<td>Government + Private + Foreign Organizations</td>
</tr>
</tbody>
</table>
V. ROLE OF GOVERNMENTS AND MULTIDISCIPLINARY COLLABORATION

5.1 Role of Agencies
We are in times when countries world over are confronting issues of governance and there are many questions staring at the policy makers and thinkers for solutions. The relevance of multidisciplinary perspective to research especially in social science and humanities becomes very important at this juncture to bring in order into the society. Most of the international donor institutions like the World Bank, DFID, UNDP, OECD, GTZ and others, for many decades as of now have been providing funding support to countries in the developing world to work on cross cutting governance issues and to make available the knowledge and best practices to all others through peer learning and capacity building initiatives. Many new tools and techniques and approaches have been evolved and designed for multidisciplinary research to deal with complex issues from both supply and demand sides.

Engaging in multidisciplinary research has definite advantages. Application of knowledge in the new field gives a leading advantage and a unique angle to solving outstanding and complex problems and can throw up new avenues of dealing with societal issues. Teaming up with complementary research groups can combine the collective expertise and gain synergy in the group and can go a long way in solving critical issues. This results in increased chances and potential to get more output with less work.

VI. INDIAN SCENARIO

Multidisciplinary research follows a collaborative approach, which would facilitate the efficient provisions and coordination towards the increasingly diverse societal challenges and could provide solutions for better formulations and implication of policies. However, the growth of social science research is much slower, though it acts as a pre-requisite for a well -communicated technological research (Shahin et al. 2014). In India, the vast cultural and climatic diversity roots the need for multidisciplinary studies with concern to development and improvement of policies for various societal challenges.

A significant portion of social science research in India has been promoted by the Indian Council of Social Science Research (ICSSR), University Grant Commission (UGC), the universities and institutions established and funded by Government as well as other deemed universities and institutions supported by Private sectors (Thorat & Verma, 2017). On behalf of Government of India (GoI), the important step taken by UGC to promote international collaboration is the bilateral cultural exchange programs to promote higher education.

A major initiative taken by Government of India to bring in a multi-disciplinary approach to problem solving in governance, is to set up the National Institution for Transforming India (NITI Aayog) which is a think-tank established on 1st January 20151 mainly concerned about transforming India. NITI Ayog focuses on exploring and resolving various societal challenges faced by rural and few parts of the urban areas, through multidisciplinary approach. We are again witnessing some rising interest in funding agencies for such a multi-disciplinary research on key issues of societal interest. New tools and techniques are being evolved and approaches being designed for multidisciplinary research and dealing with complex issues from both supply and demand sides.

6.1 Issues and Challenges in Multi-disciplinary Research

There are also some issues faced while adopting a multi-disciplinary approach to research in social sciences. Primarily the challenge comes up in setting up of multidisciplinary group with competent researchers who are equipped in terms of knowledge and skills to cover the wide variety of issues that come up while researching in inter-cultural and inter-societal issues. Limitations in finding the right mix of the teams sometimes leads to taking up individual research with core themes and not spread too thin rather than becoming a multidisciplinary group by yourself it may be much easier to team up with other specialists with complementary skills. Another issue is of funding for social science research which is limited and there is a tendency to focus on strategic interventions.

VII. CONCEPTUAL MODEL

Based on the importance and relevance of multidisciplinary approach in resolving societal issues, the paper identifies certain key factors which form the components of the multidimensional approach. The three main influencing factors of multidisciplinary research include i.e. research capacity especially of the researchers involved in carrying out multidimensional research, role of funding organizations and the nature of collaboration and network among varied groups.

The study identifies six important characteristics of a researcher for a multidisciplinary research project viz. ethical accountability, task orientation and expertise on research topic, coordination, leadership quality and compatibility of the researchers. The funding organizations are again divided into three categories to analyze the significant role in
conducting multidisciplinary research to resolve various societal issues. The collaboration among teams also has been analyzed mainly through two criteria i.e. the collaboration among different discipline to solve the societal issues which calls for an integrated solution and the methodology including design and evaluation to be used by different groups of the research team.

VIII. CONCLUSION

Multidisciplinary research approach plays an important role in bringing various disciplines to come together on the same platform and address issues and concerns of society. It also helpful in building up consensus among various research groups in addressing a set of problems as well as building up the right kind of attitude among individual researchers to make them aware of the need for adopting this approach. This approach also helps in developing various tools and techniques that can be widely used by all for resolving societal problems. This approach also gives an opportunity for greater cohesion and convergence in monitoring social problems and finding joint solutions for redressing them.

IX. REFERENCES

[10] Multidisciplinary Research Method Techniques, Undergraduate Research Workshop, October 2016, Wichita State University, Kansas