



G20 Nations and Collaborative Research: Space for Indian Researchers

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Abstract

At a time when India was leading the G20 member nations, the G20 Presidency offers greater opportunity for Indian students, scholars, and faculties to explore the areas of advanced research so as to conduct the study in the universities and higher educational institutions where requisite research opportunities exist in the member nations. This paper is aimed at exploring the prospects of collaborative research among G20 Nations, for the benefit of Indian students and scholars. While analyzing the significance of collaborative research, this paper is also about identifying a few countries that offer better opportunities for Indian students. Of all the 19 nations that constitute the G20, Australia, China, Canada, and Germany seem to have numerous opportunities for Indian students and scholars undertaking collaborative research. This paper is focused on exploring the research opportunities in a couple of these countries.

Keywords: *G20 Nations, Collaborative Research, Indian Researchers*

Introduction

Incidentally, most of the Indian students are already there studying and conducting research studies in these advanced countries. Apparently, concerned governments are encouraging such studies with a variety of schemes and incentive programs. While some of these students are affluent and can afford the foreign education and research on their own, some others have been helped by the central government and various state governments, financially and otherwise. Yet, many more Indian students are there awaiting such opportunities in foreign countries. Now that there is close cooperation among the member states, wherein such opportunities do exist, our students can explore the nations and their facilities. While the Indian government is leading the G20 nations, ready to facilitate the 'study and research abroad', it is time for the prospective students to grab the opportunity this year itself.

Several member states have been faced with multiple problems of economic decay, poverty, health and environmental issues, unemployment, labour scarcity, social inequality, political destabilization, and natural disasters. While some of these nations have similar problems, some others have had peculiar ones that deserve special attention. Some such problems seem to have certain connections across the borders. There is a need for collaborative research on such problems so that their solutions can be found with mutual cooperation. Thus, the member states can focus on such areas of research wherein students and scholars could explore the

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opportunities for conducting advanced research. Obviously, it needs proper facilitation from the concerned governments of the G20. More than the economic assistance, logistical support in terms of travel, visa, accommodation, and institutions of higher education in the areas of study has been crucial.

G20 Efforts

In the era of globalization, the G20 has emerged as a premier leaders-led platform to address the challenges confronting the global economy. The G20 sought to encourage short-term as well as long-term solutions to promote human prosperity and well-being. The G20 has no permanent staff or secretariat. Its chair rotates annually and is selected from G20 members clustered in five regional groupings of countries. Since 2008, the G20 Heads of States have met periodically at summits to deliberate on an agenda carefully designed to review the world economy and address impending issues through global cooperation. Till the year 2019, fourteen G20 Summits have been concluded.

The G20 comprises 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, and the United States) and the European Union. The G20 members represent around 85% of the global GDP, over 75% of the global trade, and about two-thirds of the world population². The G20 initially focused largely on broad macroeconomic issues, but it has since expanded its agenda to inter alia include trade, climate change, sustainable development, health, agriculture, energy, environment, climate change, and anti-corruption. Certain G20 platforms have been created and established for the purpose of promoting research and innovation among the member nations.

Research and Innovation Initiative Gathering (RIIG)

It aims to enhance, intensify, and strengthen research and innovation collaboration among the G20 member countries. RIIG is furthering the work of the Academic Forum held during the Italian Presidency in 2021, by bringing together science, technology, and innovation experts of the G20 member countries.

Development Working Group (DWG)

It has been acting as the custodian of G20 ‘development agenda’ since its inception in 2010. After the adoption of the 2030 Agenda for Sustainable Development and its Goals in 2015, DWG has played an important role in supporting Sherpas in both driving the G20 Sustainable Development agenda and in working with other work streams to better understand the sustainable development intersections of G20 actions with efforts to achieve the 2030 Agenda.

Education Working Group (EdWG)

It was established in 2018 during Argentina’s Presidency. EdWG focuses on strengthening learning outcomes and equitable access through technological tools, digitalization, universal quality education, financing, partnerships for education, and international cooperation. EdWG

² The G20 Summit is held annually, under the leadership of a rotating Presidency. Accordingly, India has assumed the presidency this year.

also collaborates with Employment and other WGs to address cross-cutting issues like skill development and school-to-work transition.

Employment Working Group (EWG)

It started as the G20 Taskforce on Employment – set up in 2011 under the French Presidency – which was raised to Working Group level following the Leaders’ Declaration under the Australian Presidency in 2014. The first meeting of the EWG took place under the Turkish Presidency in 2015. The EWG discusses labour, employment, and social issues to further develop strong, sustainable, balanced, inclusive, and job-rich growth.

Covid Background

The present COVID-19 crisis has demonstrated the vital need for knowledge sharing across the global community. COVID-19 has provided a timely reminder that it can be done and of the enormous rewards it can bring. The COVID-19 pandemic has highlighted the need for international research collaboration in both the public and private sectors to develop diagnostics, vaccines, and treatments in order to tackle health emergencies. This requires open exchange of, and rapid access to, samples and information.

In the wake of the COVID-19 pandemic, almost all nations have suffered heavily in the field of education and research. The last couple of years have witnessed the downfall of educational standards at home. More so is the case with higher education and research studies. The special issue of Nature shines a spotlight on collaborations in science today, particularly in the wake of the coronavirus pandemic. It reveals that such cooperation, although complex, is thriving in many ways. It is clearly essential, both to the progress of research and for the betterment of society. But, at the same time, international collaboration is under pressure, partly as a result of geopolitical tensions.

Incidentally, some research studies tracking global recovery spending found that governments could further seize the G20 opportunity to restructure their economies toward a low-carbon transition through recovery measures. Many of these studies highlighted the need for G20 members to address policy coherence and policy gaps to strengthen a sustainable recovery, better integrate nature and biodiversity in their recovery plans, and further understand the long-term impacts and opportunities of sustainable recovery.

Over the years, G20 summits deliberate over different dimensions of issues and concerns of the member nations, and thereby resolve to do the needful. Accordingly, the member states commit to implement the same on a priority basis. Incidentally, there are several Commitments towards Collaborative Education and Research being adopted at the last G20 Summit at Bali, Indonesia, in 2022. Suffice it to cite a few such resolutions³ which focuses on their commitments towards higher education, skills strategy, and research and innovation.

³(20. We emphasise the importance of cultivating relevant skills in tertiary or higher education, and technical and vocational education and training through learning and training programmes that are developed and implemented in collaboration with industries, partners and other stakeholders such as: project-based learning, internships, apprenticeships, and entrepreneurship, which better equip the students prior to entering the working world. The

Collaboration Research

Contemporary research is marked by expanding diverse forms of teamwork. Collaboration research across organizational and cultural boundaries extends the possibilities of new discovery. International collaborative research involves cross-country teams that share research, conduct research, and promote research, leading to advanced knowledge and positive shifts in practice. International collaborative research projects often provide findings beyond what one team could achieve alone. International research collaborations have increased in volume and importance, responding to higher education expansion and the advancement of knowledge as well as the increasing professionalization and specialization of science, in particular.

Obviously, Researchers undertake collaborative projects for several reasons. Motivations include research organization and researcher reputation, higher visibility, opportunities for multidisciplinary research, access to research funds, and mentoring of younger researchers. International and culturally diverse research projects provide valuable opportunities to advance scientific knowledge production, yet also imply challenges, risks, and drawbacks.

Collaboration research is essential as we need diverse teams to tackle global problems such as pandemics and to steer social and geopolitical challenges. Currently, over a quarter of the world's more than two million annually published scientific articles across all fields result from scientists affiliated with research organizations in at least two different countries. Educational research, social and natural sciences have become much more collaborative over time. While IRCs are time-consuming, requiring coordination and exchange among teams, the motivations to collaborate are diverse and clear. (Beaver, 2001)

International collaboration takes many forms, involving bilateral and multilateral relationships and collaborations within and across disciplines. Researchers collaborate in and travel to all the world's continents, but most frequently to Europe and North America. Short and long-term international mobility is common in the careers of researchers and is done for a variety of reasons. As well as attending conferences, researchers make short-term international trips to visit collaborators, either established or potential, and to carry out independent research. Short-term trips are considered to be becoming more frequent as part of the role of a researcher.

acquisition of skills needs to enable our learners to take on the necessary digital, economic, social and ecological transformation of our societies.

21. We support a revised G20 Skills Strategy being developed jointly by the Employment and Education Working Groups, which highlights the importance of developing adequate skills and lifelong learning as a guide for countries to move forward in their journey to achieve universal quality education and promote lifelong learning, in order to benefit individuals, enterprises, economies and societies. We look forward to future cooperation between the Employment and Education Working Groups to support and monitor the implementation of the G20 Skills Strategy.

45. We acknowledge the importance of research and innovation in sustainable resource utilization in various sectors, especially in the midst of health, climate, food and energy crises. We welcome research and innovation collaboration for the conservation of biodiversity and its use to support the sustainable development including green and blue economy. We also promote inclusive collaborations to further research and innovation, as well as promoting researchers' international mobility.)

Some Tasks

International collaborations can also provide a real career boost. But international work has its share of challenges. Some are minor inconveniences that are easy to adjust to, while others can turn the project into a difficult situation.

International projects tend to move slowly than usual. Having collaborators scattered across the globe can make it complex to set up meetings, when multiple time zones.

Arranging visas and permits for international work may slow down the process, in the developing world. And funding timelines and application procedures don't always align well, so getting such agencies to work together can be slow and cumbersome.

Politics can also intrude, when the political situation changes, which may shift a government's funding priorities or even make it too dangerous to continue the project.

The biggest challenge when it comes to international research is funding to do it.

Funding and Grants

In recent years, there has been a growing trend in the amount of research grants available for international collaborations. This can help to encourage those who are considering collaborating with scientists from other countries to do so. They will find it easier to find funding for their research. These Grants are of two types, project-based and collaborative. ⁴Financial support for promoting research is very crucial⁵. This is true at home and abroad. Although our governments have tried to offer such support for research studies at home, it has not been extended to those scholars working outside India. Of late, certain efforts are being evident in the case of some states and governments at different levels in India.

National Efforts

Indian National Funding Agencies: A National ICT-based portal has been developed primarily to connect the opportunities with the aspirations of youth. This portal facilitates registration of job seekers, job providers, skill providers, career counsellors, etc. The portal provides job matching services in a highly transparent and user-friendly manner. These facilities, along with career counselling content, will be delivered by the portal through multiple channels like career centers, mobile devices, CSCs, etc. The project would be capable of meeting the varied demands and requirements of youth for information on education, employment, and training, and will be supported by a multilingual call center.

SPARC: Scheme for Promotion of Academic and Research Collaboration (SPARC) (India) Initiative aims to promote joint research proposals and facilitate academic and research collaborations between Indian Institutions and foreign institutions from 28 countries. This

⁴ First, a project can be funded by an institution or business that wants to fund specific projects, and can be awarded by governments or private donors. In contrast, a consortium is a group of institutions that pool their resources to fund a common goal.

⁵ In a 2014 survey by Universities Canada on internationalization, 83 percent of universities cited the lack of research funding opportunities as the most significant barrier to international collaboration.

initiative envisages that the culmination of joint research proposals would lead to solving problems of national and international relevance. This scheme may be used by prospective scholars at home and abroad.

Further, Indian researchers can look out for periodic calls for proposals issued under various bilateral or multilateral collaborative programmes by the following agencies:

- Indian Council of Medical Research (ICMR)
- Department of Biotechnology (DBT)
- Department of Science & Technology (DST)
- Council of Scientific & Industrial Research (CSIR)
- Indian Council of Social Science Research (ICSSR)
- Indian Council for Research on International Economic Relations (ICRIER)
- University Grants Commission (UGC)

ICSSR

The ICSSR, through its International Collaboration Programme, focuses on collaborative links with social scientists, social science organizations, and academic institutions in India and outside. Over the years, the Council has built strong international links established through research collaborations and professional leadership with scholars working in other countries. The focus has been on developing close relationships with social scientists and social science establishments across the globe. These valued relationships greatly enhance the relevance and performance of teaching and research. The Council maintains an international focus and global presence that broadens the international opportunities available to social scientists in India. Renewal, strengthening, and expansion of the frontiers of academic collaboration with an international focus and linkage have become catchwords at the ICSSR.

Besides, the ICSSR is one of the implementing agencies for the social sciences component of the 'Cultural Exchange Agreements' signed by the Government of India with other countries. Presently, it has major Cultural Exchange Programmes (CEPs) with the G20 countries like Russia, France, and China. The Council not only sponsors Indian social scientists to visit these countries, but also invites foreign scholars to visit our country under this programme. Activities include: Visits of Scholars, Joint Seminars, Joint Publications, and Joint Research Projects. Yet, Academic Contacts with some organizations/Countries are not covered under CEPs, including some G20 nations like Australia, Japan, the Republic of Korea, Mexico, South Africa, Sri Lanka, and Vietnam. Besides, there are professional contacts and long-term collaborative programs with several institutions of repute across the globe⁶.

⁶ Academy of Social Science in Australia, Canberra, Human Science Research Council (HSRC), now called, National Research Foundation, Pretoria, South Africa and the Japan Society for Promotion of Sciences (JSPS), Tokyo, El Collegio de Mexico, Mexico City, Korean Research Foundation, Seoul, Vietnam Academy of Social Science, Hanoi, for organizing joint seminars, projects, exchange of scholars and joint publications, etc. Besides, there exists Collaboration with some Multilateral Organisations like the ISSC, Paris, Association of Asian Social Science Research Council (AASSREC), Science Council of Asia, Japan and International Federation of Social Sciences Organisation (IFSSO).

ICRIER

Established in August 1981, ICRIER is an autonomous, policy-oriented, not-for-profit, economic policy think tank. Its main focus is to enhance the knowledge content of policy making by undertaking analytical research that is targeted at informing India's policy makers and also at improving the interface with the global economy. ICRIER has been involved in research related to G20 issues for more than a decade⁷. The discussions in these Conferences have provided a platform for engaging eminent researchers, academicians and policymakers in the debate on topics of relevance to the G20 Summit. This conference has been extremely effective in facilitating the exchange of ideas and views at both a scholarly and policy level. Given the vast experience, the ICRIER has built strong research capabilities and a knowledge pool on G20 issues. Our researchers have authored several books and papers on G20 issues, and ICRIER has productively completed various research projects on different aspects of G20.

UGC

Meanwhile, this premier Higher Educational Commission has simplified the procedure for enabling academic collaborations between Indian and foreign higher educational institutions. The UGC has decided to allow certain Indian higher education institutions to enter into a Memorandum of Understanding with foreign institutions to offer dual degree, joint degree or twinning programmes, provided they fulfil certain conditions⁸. However, the new regulation would supersede the University Grants Commission (Promotion & Maintenance of Standards of Academic Collaboration between Indian and Foreign Educational Institutions) Regulations, 2016. Perhaps, the private autonomous colleges and deemed universities seem to utilise this opportunity to enter into agreements for these degree programmes with foreign institutions.

External Opportunities

Almost all the G20 nations have offered international research opportunities in various fields of study. Based on the nature and field of research, funding scope, and timeline, one can opt for such facilities. Thanks to the ICT and latest technology, prospective scholars can explore the opportunities themselves. As part of this paper, certain nations belonging to different continents that offer better facilities for promoting collaborative research for Indian students and scholars have been explored. Some of these include: Germany, Australia, Canada and China.

Germany: It is interested in international cooperation and exchange, and it supports not only its universities and non-university research institutes, but also its small and medium-sized research enterprises when they engage in research cooperation with international partners. The 'Kooperation international' online portal aims to be a communication platform on all aspects of international cooperation in education and research for anyone seeking information and cooperation partners. One finds the details of bilateral partnerships and opportunities for participation in programmes and support measures, as well as contact persons for India. German Centre for Research and Innovation (DWIH), New Delhi, provides information about research and funding opportunities for international collaborations and research. Besides, there are other institutions that also offer information on foreign collaboration, as mentioned below:

⁷ Since 2009, it has been organizing annual international conferences, prior to the G20 Summit.

⁸ It is based on quality of the institutions as per the NIRF, NAAC, and Times Higher Education Ranking.

- The German Rectors' Conference offers a database on over 35,000 international university partnerships with German higher education institutions. (www.international-university-partnerships.de)
- Förderkatalog, a publicly funded research project in Germany, is a Federal Government database containing details of roughly 280,000 ongoing and completed research projects. It enables one to find out what kind of research is being carried out in laboratories with public funds and who is working on which subjects. (www.foerderportal.bund.de)
- German Research Institutions (GERiT) provides a comprehensive overview of approximately 29,000 German research institutions. Users can search the database. (www.gerit.org)
- Database of DFG-funded research projects: The German Project Information System (GEPRIS) provides information about ongoing and completed research projects funded by the German Research Foundation (DFG), which is the central self-governing research funding organisation in Germany. (www.gepris.dfg.de)

Australia: Australian Research Council (ARC) supports international research collaboration through partnership and policy. The ARC is committed to providing funding opportunities for international research collaboration through the National Competitive Grants Program (NCGP). The Excellence in Research for Australia (ERA) program evaluates Australia's research performance nationally and internationally at a discipline level in eligible higher education institutions. All ARC funding schemes are open to Australian and international researchers, provided they apply through an eligible Australian institution. ARC funding schemes provide a variety of opportunities to support international research collaboration.

The Discovery Projects scheme supports excellent research by individual researchers or research teams. The Discovery Early Career Researcher Award scheme supports excellent research by early career researchers in both teaching and research.

Australian Laureate Fellowships scheme supports ground-breaking research and provides incentives for outstanding world-class researchers and research leaders.

The Future Fellowships scheme supports research in areas of critical national importance by outstanding mid-career researchers.

ARC Centres of Excellence are prestigious centers of expertise that promote a high level of national and international collaboration by world-class research teams who investigate and find solutions to challenging and important Australian and international problems.

The Linkage Projects scheme supports collaborative research projects with organisations outside the higher education sector.

The Linkage Infrastructure, Equipment and Facilities scheme supports existing and emerging research areas by providing funding for major cooperative initiatives so that infrastructural facilities can be shared between higher education institutions and industry.

Industrial Transformation Research Program encourages and supports university-based researchers and industry to work together to find solutions to a range of priority issues facing Australian industries.

Besides, the Industrial Transformation Research Hubs scheme and Industrial Transformation Training Centre schemes are also there, ready to support collaborative research.

Canada: Over the years, some Indian students have been going abroad and to the North American country like Canada. Yet, many more can explore the research opportunities in the G20 countries. Canada's research councils are members of the Global Research Council, an organization that brings together the heads of national research councils from around the world to facilitate interaction and share best practices⁹. Besides, there are several websites available for exploring the needed opportunities for our students and researchers in Canada.

China: Being a fellow Asian country, Chinese climatic conditions and facilities are more convenient for our students to pursue the research work. Although certain foreign policy issues may come in the way of travel and logistical support, Chinese institutions are worth working. Several websites are there to explore the research projects, with financial support being available for our studies.

Conclusion

Finally, the world is a small place, and we need to work together to make it better. Research is not just about making inventions and discoveries; it's also about sharing them with others. International research collaboration is the key to helping us understand each other, as well as our universe, better. G20 has enabled us to get closer and exchange cooperation in conducting the research on pressing problems of the nation. Although there are numerous research opportunities available in the G20 countries, the awareness level is hardly sufficient on the subject. Thus, there is a need to explore the institutions and universities that offer International collaborative research for Indian students and scholars. Thanks to the latest developments in the field of ICT, one can explore the requisite opportunities in the G20 through a website search.

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⁹ Europe's massive, multi-year research funding program Horizon 2020, with a budget of €80 billion (\$122 billion CAD), is a tempting target for researchers looking for international partners. As usual the complex bureaucracy and red tape surrounding the program can be a deterrent, but the EU, as G20 member institution does provide guidance on how to get involved through its network of EURAXESS offices.