

The GII Partners

Preface



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Co-editors of the *Global Innovation Index*
Co-founders of the Portulans Institute

For a second year, the *Global Innovation Index* (GII) is published by WIPO in partnership with the Portulans Institute, with the support of our Corporate Network partners, namely, the Brazilian National Confederation of Industry (CNI, Brazil), the Confederation of Indian Industry (CII, India), Ecopetrol (Colombia) and the Turkish Exporters Assembly (TİM, Türkiye). We at Portulans are very grateful to all our partners for their continued support and enthusiasm for the GII. We owe a great debt of gratitude to WIPO and its dedicated team of professionals under the leadership of Director General Daren Tang and Assistant Director General Marco Alemán. We further extend our appreciation to the Academic Network (to which we welcome the University of Johannesburg, the University of Oxford and VinUniversity) for its invaluable contribution to our work and to continuing research around innovation and the GII.

This year has, so far, been marked by the many tensions that have arisen around the world. Whereas many of us were expecting growth and trade to pick up rapidly in a post-COVID environment, geopolitical tensions have taken a new turn with the Russian Federation–Ukraine conflict and inflationary pressures are also making a global comeback. The risk of a splintered world economy has grown. In particular, poorer economies risk hunger on a massive scale, while growing inequalities and poverty threaten to put the world back several decades.

In such an uncertain context, innovation has a critical role to play. More than ever, innovation must be the target of strong, counter-cyclical policies. Productivity gains continue to justify spending on innovation. But at a time when financial resources are stretched – and competition for these resources stronger – it is even more important in 2022 to make explicit the links between innovation and productivity.

As last year's edition of the GII underlined, the COVID-19 pandemic has made fragile the innovation ecosystems of a great many emerging and poorer economies. Hence it is vitally important to consider how such systems can be strengthened and brought closer to local needs, as well as national interests, as a new type of globalization confronts the world.

In this era of growing uncertainties, it is our strong belief that the GII has a significant role to play by pursuing its goal of providing the factual and quantified evidence to allow private and public stakeholders to make the best decisions they can, and in so doing adopt more efficient strategies.

Corporate Network

Chandrajit Banerjee, Director General, Confederation of Indian Industry (CII)

Future innovation – The new economic catapult for productivity and growth



As India celebrates its 75th year of Independence on a strong foundation for productivity and growth, an acceleration in scientific and technical innovation is driving rapid economic progress throughout the country.

Today, India is experiencing significant transformations, from space technology and smart cities to health care and telecommunications, all driven by innovative solutions. India's Chandrayaan-2 Moon orbit, digital identity technologies (Aadhar), universal health care and the indigenous vaccine Covaxin®, are just several prominent examples of the country's current innovation prowess across various sectors.

Using frontier technologies, Indian companies are making significant leaps in innovation. In so doing, they are making their contribution to the country's socioeconomic transformation. Additionally, a startup culture has taken root across the country, positioning India as the third biggest startup economy in the world.

WIPO's *Global Innovation Index* (GII) captures all these developments, showing where India continues to improve its innovation performance and encouraging further expansion of its knowledge inputs and outputs. This year's Special theme focusing on "What is the future of innovation-driven growth?" examines the role and impact of digital innovations in enhancing productivity throughout the country.

The Confederation of Indian Industry (CII) is working in close partnership with the Indian Government and other stakeholders in inspiring Indian industry to recognize and embrace innovation. As we strive to raise enterprises to the next level of technological innovation, we are prioritizing capacity building, academic collaboration and international cooperation in sharing best practice.

As a founding knowledge partner of GII, CII is proud to be an integral part of India's journey toward an innovation-driven knowledge economy. Over the years, the GII has evolved into an invaluable benchmarking tool encouraging nations to leverage innovation for economic prosperity and social good.

I congratulate the GII team for the 2022 edition of the report. This continues to provide a useful guide for exploring the multi-dimensional layers of innovation and productivity across the globe.

Robson Braga de Andrade, President, Brazilian National Confederation of Industry (CNI)

Innovation and productivity vectors – Human resources, digital transformation and sustainability



Innovation is crucial to increasing productivity in emerging economies with recent growth-related difficulties, such as Brazil.

Coordinated by the Brazilian National Confederation of Industry (CNI), the Entrepreneurial Mobilization for Innovation (MEI) is a group of business leaders fostering an innovative culture by proposing policies aimed at increasing funding and modernizing the regulatory framework for science, technology and innovation (STI) in Brazil. In this regard, three noteworthy MEI working groups cover: human resources, digital transformation and sustainability.

Economic expansion is, to a large extent, the result of labor productivity gains. Between 2011 and 2019, GDP per employed worker increased in China (4.5 percent), the European Union (1.1 percent) and the United States of America (0.6 percent). During the same period, Brazil recorded zero growth. Good education and investments are vital to circumventing the low growth trap and supplying a qualified labor force to meet a predicted shortfall in trained professionals in the area of information technology and communication (ICT).

Digital transformation can be a powerful tool in overcoming productivity stagnation. In Brazil, the contribution of the ICT industry to GDP growth in 2020 was only 40 percent of its value to the United States, half of its value to China, and two-thirds in the case of the Eurozone.

Opportunities offered by the sustainable economy can provide an impetus for innovative activities, leading to productivity growth. In the case of Brazil, we view innovation as a primary lever for resolving serious structural problems, such as the challenges to sustainable development and a lack of social equity.

Ernesto José Gutierrez de Piñeres, Digital Vice President, Ecopetrol

Science, technology and innovation are key drivers unlocking productivity potential in uncertain times

Science, technology and innovation (STI) have become the key drivers accelerating Colombia's energy transition and facilitating the process of creating a more sustainable, inclusive and transparent economy. Innovative and disruptive solutions are fundamental to Colombia meeting its 2050 carbon reduction goals and for the transition to net-zero, a top priority at the national level.



As a key energy player, Ecopetrol recognizes the need to evolve quickly as it confronts major challenges to our industry. We aim to transition from a value chain to a value ecosystem, from estimation to measurement, and from traditional business models to knowledge exchange and collaboration. To achieve this, we need to collaborate with local and international innovation ecosystems and develop a more agile, efficient approach to handling energy needs and opportunities.

This is the reason why we at Ecopetrol joined the corporate network of the *Global Innovation Index* (GII) hosted by the Portulans Institute. The GII has allowed us to understand the dynamics of Colombia's innovation system and has fostered better informed, more balanced decision-making at a strategic level. Even though Colombia notably improved its innovation performance in the GII 2022 (Colombia ranks 63rd out of 132 countries) compared to the year before, the Index shows that Colombia produces fewer innovation outcomes than expected relative to its innovation input.

In order to instigate a meaningful change, business development goals must be balanced against safeguarding the planet and environment. At Ecopetrol, we are fully aware of this urgent imperative. Early this year, the Company presented its strategic vision for 2040 – “Energy that Transforms.” This is a comprehensive response to current environmental, social and governance challenges (ESGs), with a sharp focus on generating sustainable value for all stakeholders. The Company seeks to build a better future by transforming ideas into opportunities through innovation and cutting-edge technology. That is why Ecopetrol decided to add a “T” to ESG to produce a set of TESG (technological, environmental, social and governance) targets, as a way to understand how technology can be at the heart of our business strategy.

Mustafa Gültepe, President, Turkish Exporters Assembly (TİM)

Improving Türkiye's exports and productivity through innovation

Recent advances in future technologies hold enormous potential for sustainable development and productivity growth. That is why this year's Special theme – “What is the future of innovation-driven growth?” – is extremely valuable for enhancing and strengthening our understanding of what is meant by efficiency.

In order to increase productivity – one of the main drivers of sustainable income growth and poverty reduction – countries should prioritize investments in innovation, including R&D, human capital and organizational knowledge accumulation. For this reason, the Turkish Exporters Assembly (TİM) – an umbrella organization for more than 100,000 exporters in Türkiye – continues to design projects that help exporters adapt to an age of digitalization and ensure they benefit from new technologies.

As a result of these efforts, 2021 was a record-breaking year for Turkish exports, which achieved a historical record in annual exports amounting to USD 225 billion. Significant advances in Turkish exports have increased economic prosperity within the country. Export-oriented investments have created employment opportunities for the younger generation and uplifted many Turkish cities economically.

Innovation is at the center of our work at TİM. We view innovation as the most valuable tool for catching up with the ever-changing structure of the global economy and ensuring that Türkiye is a notable market player. Projects developed within the scope of the TİM Innovation and Entrepreneurship Academy have sought innovative ideas and opened new horizons. Last year, Türkiye ranked 41st in the *Global Innovation Index* (GII), having climbed 10 positions from 2020 and has improved further to 37th place in 2022, recording the country's best result to date. Achieving this success was a joint effort carried out under the coordination of the Assembly, as well as relevant ministries and institutions. TİM aims to continue strengthening Türkiye's innovation ecosystem and maintaining the success achieved thus far.

On behalf of myself and the TİM, I would like to thank the President of the Republic of Türkiye and ministries, the GII Türkiye Task Force and all stakeholders who contributed to the production of this year's *Global Innovation Index 2022*, which gives a valuable perspective and offers important insights drawn from an ever-expanding knowledge-base on innovation, innovation policies and tackling productivity stagnation.

Corporate Network partners

Partnerships with the private sector are an important source of influence for the GII – firms, private sector entities, and industry associations keen to promote innovation and spur competitiveness, are after all, at the heart of innovation. These partners constitute the GII's Corporate Network, supported by the Portulans Institute. In 2022, the GII Corporate Network comprises the Confederation of Indian Industry (the longest-standing corporate partner since 2008), the Brazilian National Confederation of Industry (a partner since 2017), as well as Ecopetrol Group and the Turkish Exporters Assembly, which both joined last year. We extend our gratitude to all corporate partners for their invaluable support.

Brazilian National Confederation of Industry (CNI)

Robson Braga de Andrade, President; Gianna Sagazio, Innovation Director; Tatiana Farah de Mello, Innovation Executive Manager; Pedro Micussi, Industrial Development Specialist.

Confederation of Indian Industry (CII)

Chandrajit Banerjee, Director General; S. Raghupathy, Principal Adviser; Ashish Mohan, Principal Counsellor and Head, Technology, Innovation, R&D and IPR; Namita Bahl, Director, Technology, Innovation and R&D; Divya Arya, Executive Officer, Technology, Innovation and R&D.

Ecopetrol Group

Ernesto José Gutiérrez de Piñeres Luna, Digital Vice President; Alexis Ocampo, Technology Excellence Manager; Andrea Del Pilar Tapias, Coordinator of the Innovation Centers; Alicia Morales, Professional in Science, Technology and Innovation Strategy; Maria Clara Otálvaro, Innovation Trainee; Juan Pablo Fernandez, Science, Technology and Innovation Strategy Trainee.

Turkish Exporters Assembly (TİM)

Mustafa Gültepe, President; Kutlu Karavelioğlu, Deputy President; and the following Innovation and Sustainability Committee Members: Ahmet Fikret Kileci, Baran Çelik, Başaran Bayrak, Birol Celep, Erdem Çenesiz, Hüseyin Memişoğlu, İbrahim Pektaş, Mehmet Şanal, Melisa Tokgöz Mutlu, Nilgün Özdemir, Orhan Sabuncu. Bilal Bedir, Secretary General; Kübra Ulutaş, Deputy Secretary General; Meltem Demirtaş, Manager; Gökhan Ezgin, Chief; and the following experts: Gülçin Yetkin, Çağrı Köse, Burak Günaydın, Nebile Mercan.

Past corporate partners include Alcatel-Lucent, A.T. Kearney, Booz & Company, the Brazilian Micro and Small Business Support Service (SEBRAE), Canon, Dassault Systèmes, du (a telecommunications company), Huawei, IMP³rove – European Innovation Management Academy, PricewaterhouseCoopers (PwC), and strategy&.

Academic Network partners

First established in 2021, the GII Academic Network engages world-leading universities in GII research. Faculty members and graduate students – active in diverse fields, including business management, law, public policy and science – support the dissemination of GII results within the academic community. We extend our gratitude to all Academic Network partners for their support.

Brazil: University of São Paulo (USP), School of Economics, Management, Accounting and Actuarial Sciences, Moacir de Miranda Oliveira Júnior, Full Professor, Business Administration Department

China: Peking University, Office of Science and Technology Development, Weihao Yao, Director

Colombia: Universidad de los Andes, School of Management, Veneta Stefanova Andonova Zuleta, Dean; and Carolina Davila Aranda, International Office Director

Egypt: The American University in Cairo (AUC), School of Business, Sherif Kamel, Dean; and Nagla Rizk, Professor and Director, Access to Knowledge for Development Center

France: Institut Européen d'Administration des Affaires (INSEAD), Bruno Lanvin, Distinguished Fellow

Mexico: Tecnológico de Monterrey, EGADE Business School, Osmar Zavaleta, Associate Dean of Research; and José Ernesto Amorós, Professor and Research Group Leader, Entrepreneurship & Innovation

Nigeria: Lagos Business School Pan-Atlantic University (LBS), Chris Ogbechie, Dean

Russian Federation: National Research University Higher School of Economics (HSE University), Institute for Statistical Studies and Economics of Knowledge, Leonid Gokhberg, First Vice-Rector and Director

South Africa: The University of Johannesburg, College of Business and Economics, Erika Kraemer-Mbula, Professor of Economics

United Kingdom: Saïd Business School, University of Oxford, Soumitra Dutta, Dean

United States of America: Cornell SC Johnson College of Business, Ravi Kanbur, Professor, Charles H. Dyson School of Applied Economics and Management

Vietnam: VinUniversity, Rohit Verma, Founding Provost