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CATALYZING CLEAN AIR IN INDIA



Lead Story:
Catalyzing Clean Air in India

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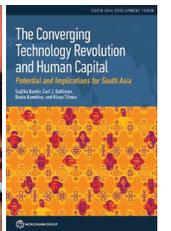
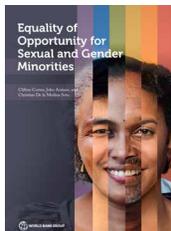


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CATALYZING CLEAN AIR IN INDIA

Globally, air pollution is a silent killer. The air pollution levels in India are among the highest in the world, posing a heavy threat to the country's health and economy. Almost all of India's 1.4 billion people are exposed to unhealthy levels of ambient PM 2.5 – the most harmful pollutant - emanating from multiple sources. These small particulates with a diameter of less than 2.5 microns, is about one-thirtieth the width of a human hair. Exposure to PM 2.5 can cause such deadly illnesses as lung cancer, stroke, and heart disease. Ambient and indoor air pollution is estimated to have caused 1.7 million premature deaths in India in 2019. The health impacts of pollution also represent a heavy cost to the economy. Lost labor income due to fatal illness from PM 2.5 pollution in 2017 was in the range of \$30-78 billion, equal in magnitude to about 0.3-0.9 percent of the country's GDP.

PM 2.5 comes from a variety of sources. Some of the most common sources include emissions from burning fossil fuels such as coal or oil and biomass such as wood, charcoal, or crop residues. PM 2.5 can also



come from windblown dust, including natural dust as well as dust from construction sites, roads, and industrial plants.

Over half of PM 2.5 emissions in India are formed in “secondary” way in the upper atmosphere when

different types of gaseous pollutants from one area such as ammonia (NH₃), mix with other gaseous pollutants like sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from another place. Agriculture, industry, power plants, households, and transport all contribute significantly to the formation of secondary

Beyond Boundaries - Understanding Airsheds and PM2.5

A 5 minute animation film that introduces the concept of airshed management of air pollution in India and helps understand how PM2.5 is formed, how it travels and how it impacts health.



All of India's 1.4 billion people (100% of the country's population) are exposed to unhealthy levels of ambient PM 2.5 - the most harmful pollutant - emanating from multiple sources.



PM 2.5. This secondary form spreads farther and wider than primary PM2.5 and travels across states, cities, and crosses jurisdictional borders.

The air pollution challenge in India is therefore inherently multi-sectoral and multi-jurisdictional. The common geographic area where pollutants mix

and create similar air quality for everyone is called an airshed. Cities need to look beyond their immediate jurisdiction for effective air pollution control strategies and apply a new set of tools for airshed-based management. Also, standardizing tools across India is important so control strategies and relevant data sets can be linked.

The health impacts of pollution also represent a heavy cost to the economy. Lost labor income due to fatal illness from PM 2.5 pollution in 2017 was in the range of \$30-78 billion, equal in magnitude to about 0.3-0.9 percent of the country's GDP. The Government of India's National Clean Air Program (NCAP) is a powerful step in acknowledging and resolving the problem of deteriorating ambient air quality.



Action

India is taking many significant steps in responding to this problem. The Government of India is envisaging a revision of its the ambient air quality standards and has strengthened vehicular and industrial emission standards in recent years. A strong emphasis on expanding renewable energy, promoting electric vehicles, and supplying LPG cooking fuel to millions of households are some examples of the actions India is taking to combat air pollution.

The Government of India's National Clean Air Programme (NCAP) is a powerful step in acknowledging and resolving the problem of deteriorating ambient air quality. The NCAP has set a time-bound goal for improving air quality across the country, with a focus on around 132 "non-attainment" cities where air pollution standards are not being met. The NCAP provides cities an overall framework for developing air quality management plans, with guidance on policies across a range of sectors.



In 2020, based on the recommendations of the 15th Finance Commission, the Government of India has set aside about \$1.7 billion to fight air pollution over the next five years for the 42 Indian cities that have million-plus populations – provided they reduce their air pollution levels by 15 percent every year. This is the world's first performance-based fiscal transfer funding program for air quality management in cities.

Recognizing the need for concerted cross-jurisdiction and airshed level action and coordination, India's Parliament approved a law in August 2021 to establish the Commission of Air Quality Management in the National Capital Region and adjoining areas.

The World Bank program is introducing tools to support state and regional air quality management approaches. These initiatives will help formulate India's first State Air Quality Action Plan and India's first large Airshed Action Plan for the Indo-Gangetic Plains (IGP), spanning seven union territories and states.



6 WAYS INDIA CAN #BUILDBACKBETTER

How air pollution levels can be kept low post lockdown

Prioritize small businesses that adopt cleaner production practices



#CleanAirForAll

Incentivize shift to higher vehicle emissions standards, retire older vehicles



#CleanAirForAll

Subsidize farmers who use organic fertilizers and manage manure sustainably



#CleanAirForAll

Continue supporting accelerated adoption of renewable energy through incentives



#CleanAirForAll

Encourage adoption of emission trading scheme that can help industries reduce air pollution at the least cost



#CleanAirForAll

Boost jobs and restore landscapes through community tree-planting programs run by local governments



#CleanAirForAll

World Bank Support

The World Bank is supporting India in tackling air pollution under its Country Partnership Framework. The greatest effort is being placed on the Indo-Gangetic Plain where the population density and pollution intensity are the highest and most concerning, and capacity and systems to tackle the challenge are in most need of support.

Building on the work that is already underway, the World Bank program introducing tools to support state and regional air quality management approaches. These initiatives will help formulate India's **first State Air Quality Action Plans and India's first large Airshed Action Plan for the Indo Gangetic Plains (IGP), spanning seven union territories and states**. Measures such as these will be prioritized to reduce the greatest amount of air pollution at the lowest cost based on scientific evidence.

The World Bank is also supporting the National Knowledge Network (NKN) in establishing a training program to enhance the capacity and skills of citizens to take on new jobs in air pollution management. The training is aligned with India's National Skills Qualification Framework (NSQF).

In the IGP states, the World Bank program supports the Network in connecting with academic institutions and city and state practitioners to carry out air quality management work such as modeling.

As part of the India Lighthouse initiative, experts from India and around the world have been exchanging their experiences to develop India-specific practices using state-of-the-art tools to make the full extent of the air pollution problem in India more effectively understood, managed, and controlled.



Way Forward

Air quality management is an ongoing process. It needs to be integrated into the capabilities of the government, as well as incorporated into the behavior of businesses and individuals. This requires sufficient funding and a sustained focus on building capacity.

The good news is that many other countries have demonstrated that air pollution control is possible when there is strong commitment and a well targeted and cost-effective plan in place.

Due to its convergence with climate change, India has already put in motion many of the essential "sector transitions" needed in air quality management. For example, India is spearheading a solar-energy revolution. Today, 60 percent of Delhi Metro's daytime energy requirement is being met through solar power from the 750 MW Rewa Solar Project in Madhya Pradesh, reducing its dependence on coal, as well as saving over \$170 million on its energy bill over the next 25 years.

What's more, a study by the World Bank and the International Institute for Applied Systems Analysis (IIASA) show that focusing on air pollution through a clean air pathway out to 2030 could bring about significant climate change co-benefits for India. Such a pathway, for example, will reduce India's CO2 emissions by 23 percent by 2030, and 42 percent by 2040-50. In fact, most of the policy measures and management practices are well-known. If pursued, they have the potential to reduce India's air pollution within a single generation.

During the medium- to long-term, the World Bank will support Indian cities and states, as well as the Indo-Gangetic Plain in implementing state and regional airshed plans for cleaner air for all. The focus will be on developing institutional capabilities and implementing systems that are vital for change. Working with the government and various stakeholders will help to bring the best local and international experts to bear on the air quality issue.



Regional Dialogue

Harnessing Converging Technologies to Build Human Capital in South Asia



South Asia is among the fastest growing regions globally with a vast human capital potential. By 2030, it will be home to over a **quarter of world's working adults**. Despite the potential, the region faces persistent human capital deficits—one out of every three children is stunted here, and four out of 100 do **not live beyond the age of five**.

COVID-19 pandemic has exacerbated these vulnerabilities and reversed much of the recent gains in human development. With deep disruptions, the pandemic has shifted focus on digitalization and use of converging technologies for delivering health, education, social protection services, and on building future pandemic and climate resilience. Converging technologies refer to a synergy of biosciences, nanotechnology, and artificial intelligence, powered by big data and high-speed computing.

While the combination of technologies and data can spur service delivery, growth, and development, challenges of digital inequity and data privacy are

striking. The 7th #OneSouthAsia Conversation, **Harnessing Technology to Build Human Capital in South Asia** on September 16, 2021, explored these successes and gaps with panelists from Bangladesh, India, Nepal, and Pakistan. The conversation, moderated by Cecile Fruman, World Bank's director for regional cooperation and engagement in South Asia, built on the latest publication, ***The Converging Technology Revolution and Human Capital: Potential and Implications for South Asia***.

The pandemic tested the potential of technology where in many cases converging technologies were leveraged for successful service delivery. For instance, CMED, a health start-up in Bangladesh, partnered with the government to develop COVID-19 surveillance system based on artificial intelligence. Khondaker A. Mamun, founder of CMED, said that in 2008 the government had initiated the Digital Bangladesh campaign, and the investments made in digital infrastructure since then paid off during this crisis.

In Pakistan too, digital services developed prior to the pandemic came in handy. The government's social protection program *Ehsaas* used a combination of three digital services—biometric payment systems, SMS-based requests, and wealth-profiling data analytics— to deliver emergency cash to over 100 million people. This is roughly half of the country's population.

"This was the most extensive social protection intervention ever in the history of the country," said Sania Nishtar, who is Pakistan's minister for poverty alleviation and social safety, adding that there is still more work to be done to bridge the financial and digital literacy divide in the country.

Another blow of the pandemic was the mass disruption of the education systems and learning. In South Asia alone, **an estimated 5.5 million children are predicted** to drop out of school due to COVID-related income losses. Even as technology was adopted to "reimagine education," severe gaps remain when it comes to access. A UNICEF report points out that about **88 percent of South Asia's school-age children do not have internet connection in their homes**. Rabi Karmacharya, who is the executive

director of OLE Nepal, said in Nepal alone only 7 % of population has access to internet at home, which has led to huge learning losses even with online learning models. "Technology can be used to build critical thinking in children, but we need to start investing it in from the start, not just at a higher education level and make it accessible," he added.

The use of technology, however, is not a straightforward path. Anita Gurumurthy, Executive Director of IT for Change, warned that the inequity of access remains a huge concern. But the investments made into local digital capabilities and communities helped implement local solutions during the pandemic, she added.

World Bank's vice president for human development, Mamta Murthi emphasized the scope technologies offer to strengthen regional cooperation in sectors like open-source platforms, e-commerce, and to build an ecosystem of entrepreneurship and innovation. The panelists also echoed sharing knowledge, cooperation on research, design and development, and frameworks for data and technology governance can harness the human capital potential, not just locally, but regionally as well.

Four Channels of Interaction between Technology and Human Capital

Technologies deployed in health, education, and social protection: these can improve service delivery.

Technology applications in sectors such as agriculture, energy, water, and sanitation: these can improve child nutrition and reduce transmission of disease, thereby improving human capital.

The availability of skilled labor affects the use of technology in the workplace: it alters the demand for skills and the requirements placed on the education and training system.

Highly specialized human capital such as scientists, engineers, and professionals help drive the innovation system: this in turn creates and adapts converging technologies for local use.

India's Digital Gaps

Less than 40 percent of women own a mobile phone in India as compared with 80 percent of men.

Only 24 percent of households in India had access to the internet.

Rural availability was just 15 percent, compared with 42 percent of urban households.

India's Digital Landscape

The use of digital technologies in health and education service delivery is advancing in many South Asian countries, with India in the lead.

India's tech start-ups in education are becoming significant even globally.

Technology applications in education are focusing on tutoring and examination preparation for students in the formal school system rather than on revolutionizing the approach to learning.

India has the fourth-largest number of technology "unicorns" in the world.

Mamta Murthi, Vice President, Human Development, World Bank



"Countries in South Asia can work towards common frameworks for data and technology governance. This will facilitate cross-border investments in sectors like education and health. Converging technologies can also open the scope for new avenues in regional cooperation that can, for example, use open-source platforms and e-commerce, build an ecosystem of entrepreneurs and innovation..."

Cecile Fruman, Director, Regional Integration and Engagement, South Asia Region



"Technologies have opened avenues to harness the wealth of human potential across national boundaries in South Asia. Regional collaboration can be strengthened in areas like research, design and development, disease surveillance, education platforms, innovation, service delivery, and more. All this, while ensuring digital equity so that the benefits filter down to the most vulnerable groups in the region."

New Project

IMPROVING HEALTHCARE SERVICES IN MEGHALAYA



The World Bank Board of Executive Directors has approved a \$40 million project, which will improve the quality of health services and strengthen the state's capacity to handle future health emergencies, including the COVID-19 pandemic.

All 11 districts of the state will benefit from the project. The project will help strengthen the effectiveness of Meghalaya's health insurance program known as the **Megha Health Insurance Scheme (MHIS)** – which currently covers only 56 % of the households. With its merger into the national Pradhan Mantri Jan Arogya Yojna (PMJAY), MHIS now plans to offer a more comprehensive package and cover 100% of the households. This will reduce barriers to accessing hospital services and preventing catastrophic out-of-pocket costs for poor families.

The project will invest in infection prevention and control for a more resilient response to future outbreaks, pandemics, and health emergencies.

The project will invest in improving the overall ecosystem for bio-medical waste management (both solid and liquid waste). It will include segregation, disinfection, and collection while safeguarding the environment and improving the quality of health service and patient safety.

The \$40 million loan from the International Bank for Reconstruction and Development (IBRD), has a maturity of 14.5 years, including a grace period of 5 years.

To know more, read **Meghalaya Health Systems Strengthening Project**

The Project will:

- Enhance management and governance capabilities of the state and its health facilities;
- Expand design and coverage of the state's health insurance program;
- Improve quality of health services through certification and better human resource systems;
- Enable efficient access to medicines and diagnostics.





New Project

SUPPORTING CHENNAI DELIVER BETTER SERVICES TO ITS PEOPLE

The World Bank Board of Executive Directors has approved a \$150 million program to support the Government of Tamil Nadu’s vision of making Chennai into a world-class city that is more green, livable, competitive, and resilient to climate change and other shocks.

The Chennai City Partnership: Sustainable Urban Services Program will help strengthen institutions, improve the financial health of service agencies, and drive significant improvements in the quality of four key urban services — **water supply and sewerage, mobility, health, and solid waste management.**

This program will support the Government of Tamil Nadu (GoTN) in its efforts to transform the city and its

services, while accelerating Chennai’s shift to a lower carbon and a more resilient growth trajectory. It will help GoTN, Greater Chennai Corporation (GCC), and key service agencies adopt new approaches to service delivery and bring a renewed focus on results for citizens.

The \$150 million loan from the International Bank for Reconstruction and Development (IBRD) is variable spread loan that has a final maturity of 16.5 years, including a grace period of 5.5 years.

To know more, read **Chennai City Partnership: Sustainable Urban Services Program**

The Project will:

- Increase household connections and improve the quality of water and sewerage services
- Expand green modes of urban mobility—buses, walking, and cycling—along with improvements in their quality and inter-connectivity
- Enhance disease surveillance and improve coverage and quality of primary health care services
- Enhance the operational and financial sustainability of the city’s solid waste management system
- Integrate planning and management of these services through empowered coordinating agencies



FROM THE ARCHIVES

The early 1950's - Helping Independent India develop its core infrastructure

BOKARO-KONAR ELECTRIC POWER PROJECT



The \$18.5 million Project provided critical foreign exchange to the Government of India to acquire equipment, supplies, and services for a) the construction of the Bokaro thermal plant and power transmission systems for the development of industries in the region, and b) the construction of a multi-purpose dam on the Konar river to provide flood control, and water for irrigation and for industrial and domestic use.

To know more, read here



Robert L. Garner, Vice President of the International Bank for Reconstruction and Development.

Mrs. Vijaya Lakshmi Pandit, Ambassador of India to the United States.

B.K. Nehru, Executive Director for India of the International Bank.

S.N. Mozumder, Chairman, Damodar Valley Corporation after signing of loan to India for Bokaro-Konar Project, April 18, 1950

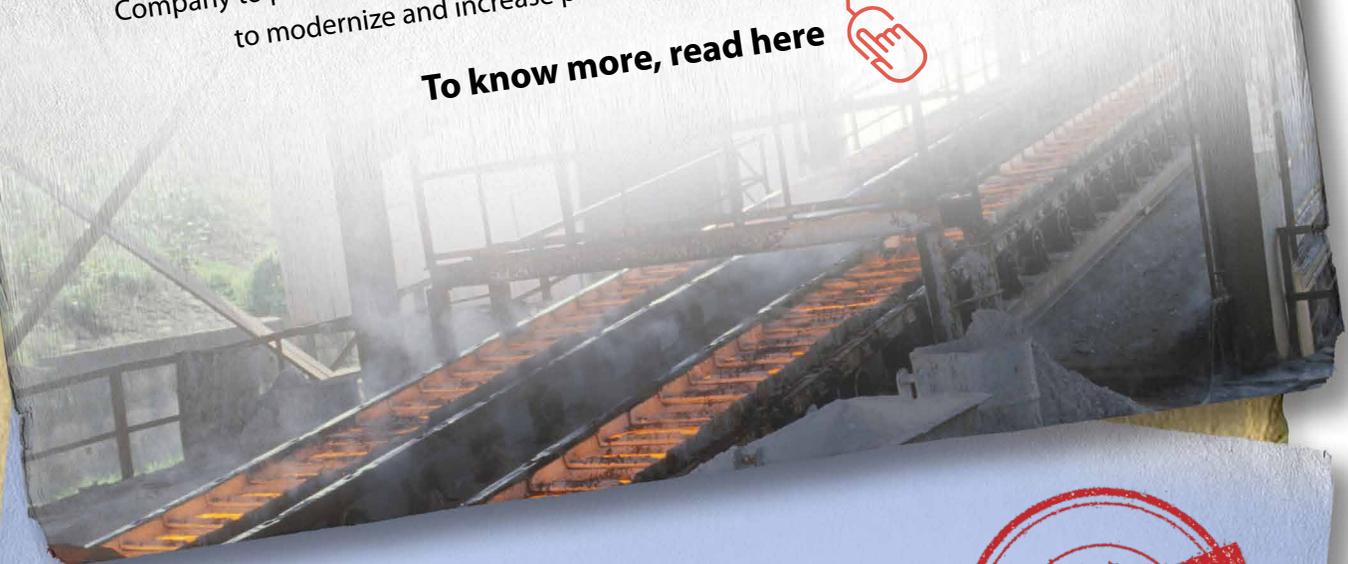




IRON AND STEEL PROJECT

The \$31.50 million Project provided foreign exchange to the Indian Iron and Steel Company to purchase coke ovens, blast furnaces, mining and steel making equipment to modernize and increase production at the Company's ore mines.

To know more, read here 



TROMBAY POWER PROJECT

A loan of \$16.20 million was approved to finance the foreign exchange required to purchase equipment for the thermal power plant set up at Trombay on the north-east coast of Mumbai. This would ensure additional supply of power to the city of Mumbai and surrounding areas which was the industrial hub for several textile, chemical and automobile industries, and for the upcoming port and oil refineries. The Agreement was signed with the Tata Hydro-Electric Power Supply Company Limited, The Andhra Valley Power Supply Company Limited and The Tata Power Company Limited.

To know more, read here 



FRAUDULENT ANGEL FUND SCHEME IN THE NAME OF THE WORLD BANK

The World Bank's attention has been drawn to a Website <https://www.angel-fund.in/#/> that is claiming a fraudulent connection to the World Bank to solicit funds.

This is to caution the public that the World Bank Group has no involvement with the individuals/groups who run this website, and that the content displayed there has been taken illegally from the World Bank's official website.

Please note, the World Bank is a multilateral development organization that provides finance for government entities and does not finance angel funds or investment schemes for individuals.

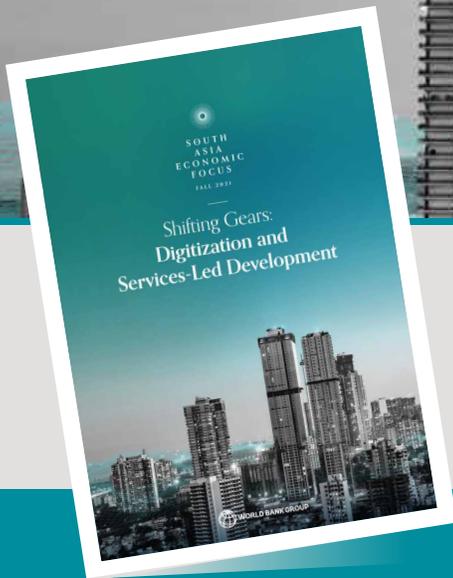
For further information contact:
indiainfo@worldbank.org

For further clarifications, please also visit <https://www.worldbank.org/en/about/legal/scams#3>



Publications

South Asia Economic Focus – Fall 2021



Digitization and Services-Led Development Can Help South Asia Build Back Better.

The latest South Asia Economic Focus *Shifting Gears: Digitization and Services-Led Development* projects the South Asia region to grow by 7.1 percent in 2021 and 2022. While the year-on-year growth remains strong in the region, albeit from a very low base in 2020, the recovery has been uneven across countries and sectors.

India's economy, South Asia's largest, is expected to grow by 8.3 percent in the fiscal year 2021-22, aided by an increase in public investment and incentives to boost manufacturing. In Bangladesh, continued recovery in exports and consumption will help growth rates pick up to 6.4 percent in fiscal year 2021-22. In Maldives, GDP is projected to grow by 22.3 percent in 2021, as tourism numbers recover.

"Countries in South Asia have a strong comparative advantage in exporting services, particularly business processes and tourism, whereas they have struggled to break into manufacturing export markets," said Hans Timmer, World Bank Chief Economist for the South Asia Region. "To realize the potential of the services-led development, the region needs to rethink regulations and establish new institutions to support innovation and competitiveness."

Hans Timmer, Chief Economist, South Asia Region, World Bank

Shifting gears towards services-led development

- New services economy has created an opportunity to move away from the traditional manufacturing-led growth model toward a services-led development model.
- Countries in South Asia have a strong comparative advantage in exporting services, particularly business processes and tourism
- Digital technologies make services more tradable and enable services to increase productivity of other sectors—including manufacturing. Digital platforms open new markets for firms.



Policy options

- Rethink regulations and establish new institutions.
- Lower entry barriers to create more national and international competition, while preventing the emergence of new monopoly powers.
- Enable increased mobility in labor markets, while encouraging upgrading of skills, both through education and on-the job training.
- Facilitate the absorption of the new services, both by firms and households.

India Publications



Urban Sanitation in Kerala and Tamil Nadu: Options for Improving Services: Synthesis Note

Water Global Practice Sustainable Development South Asia Region

This note presents a synthesis of the studies produced under the World Bank's analytical activity on an integrated approach to universal urban sanitation, was carried out in two States – Kerala and Tamil Nadu, over 2019-2020. Kerala and Tamil Nadu have both achieved nearly universal access to toilets, though as in much of India, issues of containment, construction quality, and compliance with standards remain. The note summarizes the in-depth study of emerging trends and requirements of the urban sanitation sector in the states of Kerala and Tamil Nadu. It presents a reform roadmap and investment plan for moving towards universal urban sanitation access in these states, this is potentially applicable to other states in India.

Can We Make Parenting Programs More Cost-Effective? (from Evidence to Policy)

World Bank

In the first years of life, all children need healthy food, a clean environment, and stimulation to thrive and reach their full developmental potential. However, poverty prevents millions of young children in low- and middle-income countries from receiving adequate nutrition and stimulation. As a result, many disadvantaged children's brain development lags behind that of their well-off peers, which can have lifelong consequences. Previous research



from low-income settings has found that encouraging parents to play and interact more with their children can improve children's brain development, with impacts that can last into adulthood. Delivering these parenting programs at scale and in a cost-effective manner, however, has been a challenge, in part because some of the most successful programs have been delivered through intensive and relatively costly home-based programs.

Can Results-Based Incentives Encourage Teachers to Attend School?

Vivek, Kumar, Bhattacharjee, Pradyumna, Mani, Subha; Kumar, Avinav

The Results in Education for All Children (REACH) Trust Fund supports and disseminates research on the impact of results-based financing on learning outcomes. A REACH-supported study explored the use of results based incentives for subdistrict education officials and teachers to improve teacher attendance at school. The incentives led to a 15 percentage point increase in the likelihood of a teacher being present, averaged across audit visits.



Policy Research Working Papers (India)

WPS9738

Trade, Internal Migration, and Human Capital: Who Gains from India's IT Boom?

By Devaki Ghose

How do trade shocks affect welfare and inequality when human capital is endogenous? The paper develops a quantitative spatial equilibrium model featuring two new channels: higher education choice and differential costs of migrating for college and work. The framework is used to quantify the aggregate and distributional effects of the information technology boom and perform counterfactuals. Without endogenous education, the estimated aggregate welfare gain from the export shock would have been about a third as large and regional inequality twice as large. Reducing barriers to mobility for education, such as reducing in-state quotas for students at higher education institutes, would substantially reduce inequality in the gains from the information technology boom across districts.

WPS9731

Safety First: Perceived Risk of Street Harassment and Educational Choices of Women

By Girija Borker

This paper examines the long-term consequences of unsafe public spaces for women. It combines student-level survey data, a mapping of potential travel routes to all the colleges in the choice set, and crowdsourced

mobile application safety data from Delhi. The findings show that women choose a college in the bottom half of the quality distribution over a college in the top quintile to feel safer while traveling, relative to men with comparable choice sets who choose a college in the top one-third of the distribution over a college in the top quintile. These findings have implications beyond women's human capital attainment, such as their participation in the labor force.

WPS9730

Agglomeration Economies in Developing Countries: A Meta-Analysis

By Arti Goswami Grover, Somik V. Lall and Jonathan David Timmis

Recent empirical work suggests that there are large agglomeration gains from working and living in developing country cities. These estimates find that doubling city size is associated with an increase in productivity by 19 percent in China, 12 percent in India, and 17 percent in Africa. These agglomeration benefits are considerably higher relative to developed country cities, which are in the range of 4 to 6 percent. However, many developing country cities are costly, crowded, and disconnected, and face slow structural transformation. The paper provides novel estimates of the elasticity of pollution, homicide, and congestion, using a large sample of developing and developed country cities. No evidence is found for productivity gains in light of the high and increasing costs of working in developing country cities.

Other Publications

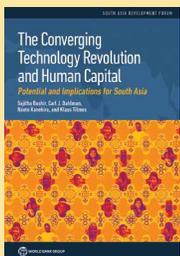


World Bank Annual Report: From Crisis to Green, Resilient, and Inclusive Recovery

This annual report, which covers the period from July 1, 2020, to June 30, 2021, has been prepared

by the Executive Directors of both the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA)—collectively known as the World Bank—in accordance with the respective bylaws of the two institutions. David Malpass, President of the World

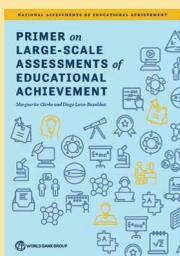
Bank Group and Chairman of the Board of Executive Directors, has submitted this report, together with the accompanying administrative budgets and audited financial statements, to the Board of Governors



The Converging Technology Revolution and Human Capital Potential and Implications for South Asia

By Sajitha Bashir, Carl J. Dahlman, Naoto Kanehira and Klaus Tilmes

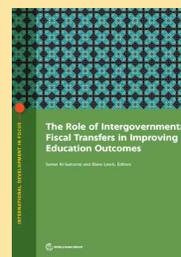
The Report looks at how the region could capitalize on these technologies to accelerate its development of human capital and promote adaptability and resilience to future shocks. The convergence of technological breakthroughs spanning biotechnology, nanotechnology, information technology, and cognitive science is driven by artificial intelligence, data flows, computing power, and connectivity.



Primer on Large-Scale Assessments of Educational Achievement

Marguerite Clarke and Diego Luna-Bazaldúa

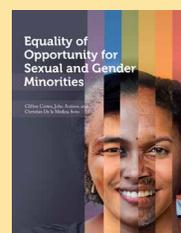
This primer was written in response to an increase in large-scale assessment activity around the world and to provide answers to some of the most critical questions posed by countries about the most effective approaches to the design, implementation, and use of these assessments.



The Role of Intergovernmental Fiscal Transfers in Improving Education Outcomes

Edited by Samer Al-Samarrai and Blane Lewis

The majority of the world's children live in countries where local governments are responsible for the provision of basic education services. Although subnational governments manage their own education systems, they often rely on transfers from the central government for funding. The main purpose of this study is to assess how these fiscal transfers affect public funding for education and how they ultimately affect student schooling and learning outcomes.



Equality of Opportunity for Sexual and Gender Minorities (EQOSOGI)

Clifton Cortez, John Arzinos, and Christian De la Medina Soto

Despite legal and social advances in the past two decades, sexual orientation and gender minorities (LGBTI) continue to face widespread discrimination and violence in many countries. The Equality of Opportunity for Sexual and Gender Minorities (EQOSOGI) report examines the laws and regulations that affect the lives of LGBTI people in 16 countries, offering numerous policy recommendations designed to prevent and eliminate discriminatory practices.

Policy Research Working Papers

WPS9784

Gender Discrimination in Hiring: Evidence from an Audit Experiment in Uzbekistan

By Sevilya Muradova and William Hutchins Seitz

WPS9783

Drivers of Utilization, Quality of Care, and RMNCH-N Services in Bangladesh: A Comparative Analysis of Demand and Supply-Side Determinants Using Machine Learning for Investment Decision-Making

By Saji Saraswathy Gopalan, Rianna L. Mohammed-Roberts and Hellen Chrystine Zanetti Matarazzo

WPS9782

Banking Research in the Time of COVID-19

By Allen N. Berger and Asli Demirguc-Kunt

WPS9781

Do Illicit Financial Flows Hurt Tax Revenues Evidence from the Developing World

By Jean-Louis Combes, Alexandru Minea and Pegdewende Nestor Sawadogo

WPS9780

Climate Modeling for Macroeconomic Policy: A Case Study for Pakistan

By Andrew Burns, Charl Jooste and Gregor Schwerhoff

WPS9779

Mind the Gap: Disparities in Assessments of Living Standards Using National Accounts and Household Surveys

By Espen Beer Prydz, Dean Mitchell Jolliffe and Umar Serajuddin

WPS9778

Cash Transfers and Formal Labor Markets: Evidence from Brazil

By François Gerard, Joana Naritomi and Joana C. G. Silva

WPS9777

Shared Decision-Making: Can Improved Counseling Increase Willingness to Pay for Modern Contraceptives

By Susan Athey, Katy Ann Bergstrom, Vitor Hadad and et.al.

WPS9776

Measuring Untapped Revenue Potential in Developing Countries: Cross-Country Frontier and Panel Data Analysis

By Zeljko Bogetic, Dominik Naeher and Raghavan Narayanan

WPS9775

Patterns of Labor Market Adjustment to Trade Shocks with Imperfect Capital Mobility

By Erhan Artuc, Irene Brambilla and Guido Porto

WPS9774

Floods and Their Impacts on Firms: Evidence from Tanzania

By Jun Rentschler, Ella Kim, Stephan Thies , Sophie De Vries, Robbe Alvina Erman

WPS9773

Changing Perceptions of Institutions and Standard of Living in Iraq

By Saniya Ansar, Bledi Celiku, Leora Klapper and Wael Mansour

WPS9772

Road Capacity, Domestic Trade and Regional Outcomes

By Kerem Cosar, Banu Demir, Devaki Ghose, Nathaniel Young

WPS9771

The Aftermath of Debt Surges

By Ayhan Kose, Franziska Lieselotte Ohnsorge, Carmen M. Reinhart, Kenneth Rogof

WPS9770

The Anatomy of Index Rebalancings: Evidence from Transaction Data

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The Hindustan Times House
(Press Block)
18-20, Kasturba Gandhi Marg
New Delhi - 110 001, India

Contact: Sunita Malhotra
Email: smalhotra@worldbank.org
Tel: +91-11-49247753

Media Inquiries

The World Bank
70, Lodi Estate
New Delhi - 110 003

Contact: Nandita Roy
Email: mediaindia@worldbank.org
Tel: +91-11-4147 9220

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