

OPINION

Relevant for: Indian Economy | Topic: Issues relating to Growth & Development - Demographic Economics & various Indexes

The announcement for the 2018 Nobel Prize in Economics to William Nordhaus and Paul Romer calls for a moment of celebration for the field of development economics.

What does Romer say on technology and growth? To put it in simple terms, endogenous growth theory, unlike previous growth models, assumes 'technology' as an endogenous or internal factor adding value to the growth capacity of a given nation through greater investments, made by profit-maximizing agents in the economy. As Romer argues in his Nobel-winning paper, "The distinguishing feature of the technology as an input is that it is neither a conventional good or a public good; it is a non-rival, partially excludable good."

The "non-rival" feature allows "technology" to act as a unique value-addition factor in growth diagnosis. It is in the interest of profit-maximizing agents (firms, households, and government) to constantly invest in technology and seek "non-excludable" gains from tech-based advancements over time (say, making investments in geo-spatial technologies like GIS and Google Maps will distribute gains to everyone across sectors in a non-excludable manner while drastically increasing production capacities).

More importantly, critical insights drawn from Romer's paper spell out a greater need for linking human capital development capacities (via complementary investments in education, health and skilling of workers across social groups) in proportion with the rate of technological investments required for ensuring consistently high levels of developmental growth.

The lessons for the Indian scenario are significant. The World Bank recently released its report on the Global Human Capital Index rankings, where India currently ranks 115th out of 157 nations (China being 46th, Indonesia 87th, Malaysia 55th). According to the index scores from the report, a child born in India is likely to be only 44% productive when (s)he grows up, if (s)he receives education and adequate healthcare.

India, in relation to other developing economies, does poorly in its ability to expand overall productivity with a rise in GDP per capita. The disproportional relationship between the two axes remains connected with India's dismal performance in aspects such as infant mortality (with 96% children born today having the probability to survive till they are 5).

Further, it is troubling to see the disconnect between our rate of technological growth and our inability to distribute the gains from it by adequately focusing on skilling (via knowledge, education) and health, critical for greater resilience and sustained productivity. Romer's work and his insights become crucial here to map investments in expanding technological growth and its adoption by the social fabric of the society through proportional investments in areas of human capital development. In fact, if we study it closely, the scenario for technological growth in India over the last three decades reflects a mixed effect on its growth scenario.

India's overall investments to promote tech-based advancements across sectors have picked up gradually only since the mid-1990s. Information and communication and information technology (ICT), manufacturing industry, transportation, defence, and space technologies are some of the important sectors which have attempted to incorporate modern technologies in enhancing sector-wise growth capacities. Most of such benefits (and investments) in the tech-based advancements are accrued by a few elitist sections of the society, occupationally involved in

these sectors.

At a corporate level, too, only selected firms with visible monopolistic advantages (because of high capital bases) seem to have benefitted more from global advancements in certain kinds of technologies (say in mechanization of food-processing, automation of automobile manufacturing etc.). This has led to a widening of the asymmetric distribution of tech-accrued benefits (seen in the distributional inequities of wages and employment patterns). This has further raised concerns for the negligible trickle-down effect of knowledge bases from technology developments. Such diverging trends must push Indian policy-makers to prioritize the expansion of technological growth that supports the human capital development process for long-term welfare.

In addition to the Global Human Capital Index, another useful indicator for monitoring India's performance is the Global Innovation Index (GII). The GI reflects the technological state of growth for around 180 economies, computing the progress made in technological advancements at a national level, ranging from intellectual property filing rates to mobile application creation, education spending, and scientific and technical publications. India currently ranks 57th (out of 180) in GI's latest ranking released in 2018 (China was 17th, Israel was 11th, UAE was 38th).

Taking heed from Romer's work and the lessons for the Indian scenario, it is vital to acknowledge that most technology-based innovations in any stage of development require two things to be ensured in continuum by a nation's economic policy environment: growth of innovators and finance.

Real-time data and increased frequency of credible measurement of investments made in education, health and areas of technological adoption require proper monitoring and evaluation. This calls for a more robust state capacity and bureaucracy to implement state-sponsored programmes and to assist the private sector to further crowd in more social investments for sustained (inclusive) growth.

Unless the state and other regulatory agencies are able to nurture an environment for ensuring the right balance of incentive structures for both, innovators and financiers, the interests of innovators will perpetually outbalance the needs of the society, creating poor productive capacities for the economy to grow.

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