**https://doi.org/10.24182/2073-9885-2021-14-3-153-162**



**Samrat Ray**

*Research Fellow,*
*samratray@rocketmail.com*

*Peter the Great Saint Petersburg Polytechnic University,*
*Saint Petersburg, Russian Federation*

**Dossou Yedehou Leandre**

*segnor2@yahoo.fr*

*Peter the Great Saint Petersburg Polytechnic University,*
*Saint Petersburg, Russian Federation*

# How Entrepreneurial University Model is changing the Indian COVID-19 Fight?

***Annotation:*** *It is indeed a great misnomer to analyze the dimensions of academic capitalism with the steady rise of entrepreneurial university in lines with Western educational policies. It is indeed a long treaded journey in emerging underdeveloped economies which has given the notion of a dream of the next superpower wherein entrepreneurial universities are a very recent concept post liberalization of economy and change in governmental practices and loosing hold over bureaucratic affairs which has led more stronger the innovation landscape of industry-education-government nexus in building the nation. Recent years have seen the great crisis of COVID pandemic which has changed the ideologies and theoretical models underlying economic welfare states and the velocity of money running through society. Amidst huge literature in entrepreneurial university studies, very little work has been done which answers the very pertinent question and research gap of how the triple helix model arrived in India and how the central government in India changed its beliefs globally by inheriting such model in its innovation practices to champion the cause of bringing new products, economic welfare, product development; which transformed India's idea of being an importer of healthcare facilities to an expert and exporter of medical facilities thus completely reversing the cycle of trade and global logistics in healthcare economic practices. This paper works on such exploratory case study concerning India's success story in employing triple helix model of innovation in national policy practices and world economy.*

***Keywords**: World Economy, Triple Helix Model, Entrepreneurial University, COVID-19, Indian Economy.*

**1. Introduction:** Knowledge management in its nascent form has been a miracle for quite a long time now. It has been a wonder for both advanced as well as emerging economies to dive into the various facets of academic maneuvers and educational management. There have been disputable measures pertaining to control over educational evolvement arising out of regional imbalances and cultural transformation. Whereas the east has seen a more conservative approach to education and academic enlightenment capitalism saw a faster growth in the Western economies. Trade and commerce was integral to academic capitalism from a long time with the opening of the borders and sea shores with travelers across Asia plunging into multifarious trade and dialectical shifts. It is imperative to point out that the very term of Academic capitalism is quite a newer one to poorer countries like India as well as Africa (1). Though there has been a rise of multipolar domain in global economic spheres such countries were caught in post colonial stress and traditions which were deeply influenced by the colonial rulers. As Britain transferred its educational practices to a more industry specific curricula and looked more liberal as universities like London School of Economics and Oxford which were the builders of Modern day university structures in India post independence which saw rise of colonial built university structures at state levels like Delhi (2), Kolkata and Mumbai; the flavors of British Raj still haunted the very corridors of public policies and governance with a missing out of nationalism in educational flora and fauna. Post independence (3), the then Prime minister of India, Nehru realized that liberal policies towards national growth is necessary for human development in India which saw the rise of autonomy in educational institutes with the birth of premier institutes like IIM, IIT, ISI which still enjoys comparative advantages and autonomy in relation to industry-academic built up and policy making. With the opening up of markets, inflow of foreign investments and favorable balance of payments saw change in national monetary policy which also was reflected in the national government's agenda of educational policy and subsequent privatization in India giving rise to the impetus of academic capitalism which can contribute effectively to national income and economic benefits. In India, such political discourses saw rise of socialist blended political economy which pushed forward the license raj and bureaucratic hurdles which put it at second to Western dominance in liberal education and economics of knowledge management. Such Western dominance

was obvious with USA championing the goal of industry led academic initiatives in land grant universities across its borders with the built up of innovation hubs and institutes of higher learning which contributed to technological progress across the national hinterland during the World War years. In Indian subcontinent early educational discourses too saw higher enlightenment believed to be much faster than even French and Scottish schools wherein the advent of modern day education platform was laid by the travelers from Far East and China; rise of university structures like Nalanda where it saw the utilization of practical knowledge too. There were indeed vast exchanges of scholarly dialects and schools of thoughts where trade and commerce got interlinked to educational progress and created sustainability with development of novel science and technology in scholarly pursuits. Thus was born the internationalization of educational purposes. Though substantial jolt was felt during the great depression of 1932 when FDR went forward with the Keynesian policies of governmental intervention, post Keynesian neoclassical discourses and national planning saw the birth of liberal thoughts and free markets dominating the education industry at large. Examples of such knowledge spillovers were born out of Silicon Valley where MIT led educational practices saw the rise of nexus between industry and academic pursuits with the growth of innovation pockets en-route 218 where BELL labs and the likes donned over the cooperative movements. In emerging senses too, India was not long behind as with the opening up of the market post 1991, the government decided to move towards a public-private partnership in skill development targeting grassroots levels and including social inclusion within its technology gambit. Whereas the MIT university industry championed over many facets in development of new technology with patenting options, Stanford's Technology Venture Program showcased the involvement of different structures in the rise of scientific pursuits to solve global discrepancies by producing solutions which can be implemented in real life situations through university led incubation mechanisms (4). The evolution of national intelligentsia is quite a distant one wherein the concept of the «Can Subaltern Speak» highlighted in the writings of Derrida and professor add initials Spivak has hit upon the concept of post colonial political economy which rocked the very foundation of national built up of India. Countries with high heterogeneity like India saw a steady rise of market economic structure with growth amidst destitution and national wellbeing saw the rise of Elites in educational dimension born out of colonial educational structures. Infact the term Knowledge Economy rose to prominence

with the seminal works of Austrian born economist Machlup relating to production as well as distribution of knowledge in USA. By the year of 1958, as the economist relates to that such knowledge economy amounted to 30% of GNP. He is subsequently credited with knowledge measurements with respect to distribution of research and developmental issues. Machlup propounded few theses relating to (5):

· Knowledge being part and parcel of national budget and income.
· Social welfare relating to economics of knowledge.
· Knowledge being relativity to communication technology.
· Rise of modern day brain workers.
· Knowledge being a unit of economic growth and sustainability.

In knowledge management, the philosophical dialects of Gilbert Ryle saw cognitive aspects in knowledge which put humans at a beneficial status over everyday animals with respect to cognition and cultural inputs (6). Thus in knowledge management rose two schools of thoughts as Acceleration school which propounds the utility and innovation cycle whereas retardation school which limits the scope of innovation cycle (Machlup).OECD Framework of entrepreneurial university model propounds it definition over seven charters like (7):

1. Leadership as well as Governance.
2. Organisation as well as People.
3. Entrepreneurial thought process in teaching activity.
4. Path openings to entrepreneurs.
5. University-Industry relation as basis for knowledge exchanges.
6. Internationalization.
7. Measuring impacts of entrepreneurial university structure.

The concept of educational delivery (8) has changed over few years with rise of economic engines and education being taken as catalysts for regional as well as social developments across various nations which are moving towards creating more and more entrepreneurial universities (Kirby 2001)(9). According to Etzkowitz (2004) (10), the academic revolution is twofold with one fold moving to research output as a result of teaching endeavors whereas the second revolution has economic pursuits added to academic pursuits (11). According to Etzkowitz, entrepreneurial university can be defined as an organization which reflects patenting and funding of its projects based activities linked to teaching. Whereas, Clark and Kirby reflects a shift in definition to entrepreneurial university as an innovation hotspot taking risks and jumping

into ideas. North propounds another vibrant theory of institutions as being game changers in a society. Such notion is well reflected in the Indian Case study analysis too. In 1995 Drucker stated that idea, mission, actions and productivity lay at the foundation of institutional innovation mechanism (12). Middlehurst and later McKay has propounded that bureaucracy, corporate practices evolved and university functioning changed over time (13) further Etzkowitz in 2004 stated and found that capitalism; autonomy is proportional to positive functioning of entrepreneurial university structure. Krueger and Brazeal. Later stated in 2001 that with increase in graduate involvements in entrepreneurship education, the more is the chance of the entrepreneurial university concept succeeding (14). Subsequently the Entrepreneurial Event Model of Shapero reflects on the environmental impacts on entrepreneurial decision impulses and thereof. Another important getaway from the conceptual so called helix formation is the Timmons model of entrepreneurship wherein opportunity plays a critical role in driving success (15). Indian scenario portrays a textbook opportunity through the pandemic situation creating a national emergency situation looking for innovation and creativity.

**2. Materials and Methods:** This research paper is formulated on exploratory case analysis and few interviews conducted in cooperation with local medical colleges and vaccination centers in Eastern Indian facility of Kolkata. Various Indian government agencies relating to economic restructuring which were evident to triple helix adaptation has been reviewed such as NITI Ayog, All India Medical Sciences, Health Ministry of Government of India which were the pillars of vaccine creation and deployments across the nation.

Case Study Analysis:

Serum Institute of India: One of the best biotechnological company specializing in vaccine deployments with the record number of vaccine delivered till date. It expanded its global ambit by acquiring Netherland based Bilthoven Biologicals thus improving on its vaccine production capacity (6). Particularly this institute has been selected amidst a range of research institutes which has successfully worked hand in hand with government agencies in India in its fight against COVID-19. Recently this institute has tied up with Merck to produce advanced monoclonal antibodies which is proving to be a global innovation footprint with wide accessibility in global vaccination drive. AstraZeneca, in nexus with Serum Institute propounded COVISHIELD vaccine has been granted permission to be implemented on 18 years and over by WHO led strategic expert group. This is in fact a success on part of Government of India

initiative to create sustainable resistance to the virus. The vaccine has in fact been readied for global shipments, first of its achievements in Made in India campaign of the government. Shipments were carried out by foreign ministry to Bangladesh as well as Canada under its umbrella program of «VaccineMaitri».

Key takeaways:

1. The proposed studied case reflects Triple Helix cooperation in growth and development with government playing a distinct role of vigilance.
2. The case reflects Timmons Model of Entrepreneurship with greater focus on resource allocation and opportunity building measures rather than mere business plan.
3. The institute rightly portrayed its technology transfer mechanism through knowledge spillover through tacit knowledge building apparatus (15).
4. Though there was chance of another Helix build up towards vaccine deployment and logistics, but nevertheless resilient actions were shown by strategic cooperation indulging in careful observance of international bodies.
5. N-helix build up was seen through the internationalization approach of development but neglected through nationalistic approaches [16].

Analysing the case of vaccine drive, Government of India called on startups as well as SMEs to fasten vaccine deployments thus creating a Triple Helix foundation to fight COVID-19. In its second stage it roped in medical facilities and research centers regionally in consultation with state led governments to conduct feasibility studies and clinical trials for several vaccines to be administered. Regional crisis points, morbidity rates and clusters of risk was formed and studied by NITI Ayog, a national level planning organization with aid from leading medical research institutes in New Delhi to chart out vaccination drive (10). This rightly displays how entrepreneurial university structure can effectively and economically create innovation funnels. Thus India jumped into World's largest vaccination drive even praised by World Health Organisation.

The above case study out rightly demonstrates the foundations of research put into practice through Triple Helix Model of innovation (17).

**3. Analysis:** Wherein stability of governmental policy is highly linked to national investments and stability in currency fluctuations and devaluations, human knowledge also receives comparative advantages if nurtured through

innovation channels. There is substantial literature which is quite modest in its dialogues wherein colonial influences have been proved in university structures even after independence in countries like India but it required considerable boldness on the part of government to change its outlook towards knowledge practices (18). The central government with its various policy agencies as reflected changed their strategy towards health infrastructure during emergency situation like COVID wherein researchers as well as private as well as public industry players battled towards a triple helix foundation to develop and implement newer technologies with changing times. Such steps not only were necessary but again proved the changing dimensions of «Innovator» led innovation of Schumpeterian thoughts to a Neo Schumpeterian innovation base. The Indian concept is quite unique and is doomed to be transplanted for future utility and application in other emerging economies fighting with crisis. The concept of entrepreneurial university developed quite late post 1990 but such a concept though quite old but not justified scientifically rose to prominence in emerging countries quite late. Recent developments related to vaccine developments saw India's prominence in applying Triple Helix for technological transfer (19), knowledge spillovers as well as patenting taking prominence with the rise of entrepreneurial scientist. This case study explored therein has rightfully portrayed the emergence of the innovation strategy which is groundbreaking in its conception building upon established scientific facts and theories. Though there still lies a belief of unethical intervention in Triple Helix model as new innovation funnels can disrupt age old ethical practices in academic pursuits with involvement of industry players but nevertheless the COVID crisis proved beneficial and proved the positive sides of the model for national economy to prosper.

**4. Deduction:** It is imperative to point out that the behavioral and cognitive aspects of knowledge is wide and is quite different in Western countries with respect to emerging countries like India and Russia. Dialectical aspects of knowledge quite perfectly rotates around Austrian Economic school led Hayek's philosophy where human action is prima face to development and growth. Though it took quite some time for underdeveloped countries to tread the roads to liberal thoughts by imbibing the notion of Triple Helix in its innovation chain (20); thus bringing forth the concept that «Necessity is the mother of all creations», India rapidly learnt from failures of red tapes and involved entrepreneurial university structure calling researchers and scientists to create knowledge spillovers for national growth and prosperity. In a time

when the whole country with a billion population was aghast with sufferings and deaths arising due to the deadly virus (21), India treaded the paths to rapid mobilization of its frontline healthcare by involving industry and its research universities to create a global case study which can be used as reference for future generations and policy makers while dealing with crisis (22). At a time when death was tolling high, India changed its strategy from being an importer of health devices to an exporter of facilities which was highly praised by global agencies like WHO too. This research work portrays a global platform where India is projected as a model study where crisis was handled effectively by national policy makers by involving entrepreneurial university concept and building on innovation channels which starts a future prospect for other emerging countries to apply in its public policy structure as and when required. This research work is one of its kinds wherein it showcases the utility of nexus among government-industry-academic which can be effectively applied to emerging countries too. Such branch out of research and development once again put forth the advancement and utility of academic capitalism and how knowledge economy can be a boon to crisis management and governmental approach creation globally (23). The research opens up newer channels of thought regarding how effective the Triple Helix model is in fighting crisis like COVID by generating revenue through knowledge as well as creating a welfare function out of innovation.

**5. Future Research Implications:** This particular research work addresses the long pending research gap in evolution of Triple Helix Model in emerging economies like India where great heterogeneity lies amidst mass poverty and inequality. As the World Bank in its SDG charter fights for forging gap in knowledge management through sustainable development, the future looks brighter with academicians and policy makers making literature ready to create a blueprint for cooperation and build up to the Helix model of innovation. Moreover as crisis hits back poorer countries deprived of resources can start off the ladder of innovation and create resilient plans at national economic levels.

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