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Review Article

START-UPS IN INDIA- A MACRO PERSPECTIVE

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Abstract: India is a technologically developing south Asian country. It is third in terms of its Purchasing Power Parity and 7th largest country by area. The increasing digitization of the Indian economy over the last decade or more has brought India on the world map of IT and ITeS. The increasing contribution of the software industry in the total service exports has mandated the government to come up with defined reforms in the technological field. The unemployment problem however has deprived the economy and the nation from the efficient use of its human capital. The entrepreneurial talents of the vast populated country has never been explored or tapped properly. This has also resulted into a huge brain drain in the past. The government of India took proactive measures for the techno savvy firms and industries. This was further supplemented by the, "Startup India, Stand up India" on 15th August 2015 to promote Bank financing for start-ups and offer incentives to boast entrepreneurship and job creation. All these measures were initiated towards creating an efficient, dynamic and innovative class of entrepreneurs. The paper has explored the international dynamisms of India to gear towards its ventures of Startups in India. It has also analysed India's preparedness in its startups programs, its failures etc. and the technological readiness in terms of select parameters such as internet connectivity, subscriptions and etc. This paper is aimed at analyzing about the growth and prospects of Startup systems in India.

Keywords: Startups, Technology, Connectivity, Entrepreneurship, Competitiveness

Introduction: The Indian economy has undergone drastic changes since independence. India's strategy for economic development under Jawaharlal Nehru, its first prime minister, placed faith in import substitution—the replacement of imported products with domestically produced ones. This protectionist stance was adopted with an aim to achieve national economic self-reliance and rapid

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development through domestic heavy industry and temporary economic isolation. Despite some gains, these policies did not come without costs. While India did manage to create indigenous technological capabilities, the country's overall economic output and total factor productivity growth took a beating, as Nehru's emphasis on import substitution led to entrenched interest groups and rigid policymaking processes that placed constraints on economic efficiency. It has changed itself from a sluggish protected economy to a more liberalized economy, especially since the 1991 economic reforms. The reforms laid a strong economic base for the innovative driven economy. The FDI showed an increasing trend. The country slowly and gradually started converting herself from an underdeveloped economy to an emerging economy. It started achieving several milestones in terms of the improvements in various economic parameters such as the ease of doing business, HDI, literacy rate, internet connectivity, infrastructure development and etc. These changes also to some extent improved the Balance of Payment Position of India. India emerged on the map of the international competitors along with China, United States, United Kingdom, Ireland etc. E-commerce, broadly defined as the buying and selling of goods and services, and the transmitting of funds or data over electronic platforms, has been growing rapidly. Global retail e-commerce sales, which stood at $1.9 trillion in 2016, are projected to reach nearly $4.1 trillion— 14.6 percent of total retail spending—by 2020. A recent study predicts that India's e-commerce revenues will grow from $30 billion in 2016 to $120 billion by 2020.This was followed by an important step towards forming of startups programs to boost entrepreneurship in India. This has given a boost to the entrepreneurs to grow in the respective field. India needs annually 10 million jobs. As per a global study, it was found that small organizations or start-ups are providing more jobs than the big names in the market. The latest report by industry body NASSCOM and Zinnov, analyses the current scenario and emerging trends across the various dimensions that define the Indian start-up ecosystem, and gauge India's position as a global start-up hub that is becoming attractive for investors, start-ups, & corporates. As per the statistics given in the report, the number of active investors in the ecosystem has grown from 220 in 2014 to 490 in 2015, depicting a 2.3X growth. Further, 8 out of every 10 top VC/PE Firms in India are foreign, and global investment in the Indian ecosystem is leading to an increased FDI. India serves as the fastest growing start-up-base worldwide and stands third in technology driven product start-ups just after US and UK respectively.

Review of Literature: Jain Surbhi (2016) examined the growth and prospects of Startup systems in India. The study stressed on building an entrepreneurial environment with proactive support from the government, big corporate and educational institutions which can provide a culture for startups in India. Mentor programmes, innovative essay competitions, workshops, seminars should be organized by the government and universities.

Sinu M (2017) examined the contribution of start-ups to economic growth by way of employment generation and its impact on GDP. The study stressed on the need for governmental supportive measures to promote startups not only in India but also across the globe, as well as create policies that are start-up friendly so that Indian start-ups get a major boost and they can further create better employment opportunities for the youth of the nation.

Dutta Akanksha (2016) analyzed the startup programs of India and the measures taken by the government in the direction of starting the startups. The study stressed that for any new idea to become successful venture it requires appropriate support and mentoring.

Kamaldeep Kaur (2017) examined the major difficulties faced by startups in India and discussed the various opportunities of startups in India by using a literature-based analysis. The

study observed that amidst the funding crisis for the startups, the government should play a proactive role in the promotion of startups.

Omid Sharifi & others (2015) examined the main difficulties faced by startups in India, and discussed the financing resources of startups in India by Using a literature-based analysis. The study found that most of the startup companies face the biggest challenge in terms of the availability of the credit in running the startups.

Shailja Badra & others (2016) evaluated the developments of startups in India in relation to the other advanced nations such as United States, China and etc. The study emphasized that making capital more accessible and cheaper, easier patent filing, giving research and development credits, and easier entry and exits will be necessary for the success of Startup India.

Most of the literature on the startups have emphasized on its contribution towards the economic growth and the GDP of the nations. Various obstacles at the national level have been analysed which have been presumed to inhibit the success/failures of startups. The concept of startups has come to stay, but the need of the hour seems to be a proper channel in terms of timely guidance and the proactive support from the government of India. The studies have not analysed the macro aspect of the startups in India vis-à-vis other countries.

Objective of the Study

- To have a macro understanding of the startups ventures of India
- To analyse India's preparedness in promoting startups as a tool of building entrepreneurship.

Research Methodology: This study is mainly based on the secondary data. These data are collected from various

Websites, journals, reports and newspaper articles. The study is descriptive & conceptual in nature.

Scope for Startups in India: In 2006, the combined share of India and China in global deal value was only 2 percent. Today, India and China account for close to one-fourth of global deal value. In barely a decade, India has become the world's third-largest startup ecosystem. A Nasscom report estimates that India may have 11,500 startups by 2020, up from 4,200 startups today. India's startup infrastructure is also growing rapidly, at 40 per cent every year. According to Niti Ayog and Tracxn, there are over 280 incubators, accelerators and co-working spaces in India. Still, India's startup ecosystem has a long way to go. In 2014, according to Nasscom, India had only 300 angels, whereas US had 3, 00,000 angels. In the same year, there were only 156 VCs in India, while there were over 1,300 VCs in the US. India has only 10 unicorn companies, though nearly one-sixth of the world population lives in India – the US has 98 unicorns. India even lags behind in many parameters as compared to china. However the year 2018 holds many expectations for the growth of startups in India. Its scope is briefly stated as follows:

a. Healthtech

According to an IBEF report, the overall Indian healthcare market is estimated at $100 Bn. It is expected to touch $280 Bn by 2020, growing at a CAGR of 22.9%. As per Inc42 Data Labs, healthtech startups in India cumulatively raised about $338 Mn across 107 deals till November 2017.According to the latest edition of the NASSCOM-Zinnov report, healthtech is currently one of the most promising sectors in the Indian startup ecosystem along with fintech and ecommerce/aggregators. Witnessing a 28% YoY growth in 2017, the number of healthtech startups grew to an estimated total base of 320 startups. Almost 31% of healthtech funding went towards artificial intelligence, IoT, and analytics. However, 2018 is likely see smart wearable's being used increasingly for sleep, heart and cholesterol tracking and so on. More and more startups will likely turn to genetics and

gene therapy to develop effective treatment solutions.

b. Logistics

Poised to touch $307 Bn by 2020, the Indian logistics sector has always been crucial to the country's infrastructure and economic development. In recent years, an army of tech-enabled startups has emerged in the country, thereby bringing innovation and disruption into the mainstream. Players like Flipkart, Snapdeal, and Amazon etc. in terms of their in-house logistics services have plugged the gaps in the fragmented and unorganised logistics industry. The technological intervention introduced by these startups has, in turn, paved the way for dramatic improvements in productivity, transparency, end-to-end visibility, warehouse and yard management, fleet management, fuel cost management, customer relations and accessibility, real-time tracking and accountability. Equipped with advanced technologies like IoT, Big Data, artificial intelligence and machine learning, the logistics sector jumped 19 places in the Global Logistics Performance Index from 54 in 2014 to 35 in 2016 (World Bank, 2016). Though the year 2017 witnessed a discernible growth in funding at later stages, but compared to 2016, the sector saw a 52% drop in deals and funding at Seed and early stages, which could mean that investors are keener on driving the Indian logistics sector to a stage of maturity. In 2018, the emphasis will be on integrating new and advanced technologies to fill the existing gaps in the supply chain, especially in tier II and tier III regions of the country.

Fintech: Digital technology provides a low-cost way for people in developing countries to send money to each other, buy and sell goods, borrow and save as long as the financial-regulation environment is supportive (Bill Gates, co-founder and former CEO of Microsoft). In India, the need for technological disruption in the banking sector is all the more acute, given that over 19% of the country's population is still unbanked. The government's enthusiastic promotion of cashless technologies – digital wallets, Internet banking, the mobile-driven point of sale (POS) and others have restructured the financial sector, thereby breaking the monopoly of traditional institutions like banks. Further, the demonetization drive of the government also gave a boost to the financial startups in the country. At present more than 500 financial startups operate in India with the aim of having financial inclusion in the country. Further a number of related startups has also emerged in different sub-sectors of fintech, such as in loan and insurance, mobile-based Point of Sale (POS) providers, alternative lending, among others. According to Inc42 Data Labs, the Indian fintech sector reported 102 funding deals this year till November, worth $2.59 Bn. Further the payment banks have also emerged. It also saw an India-based startup Indi coin, going for an Initial Coin Offering (ICO). However, it should be noted that, in India, there isn't much clarity on this, since the government doesn't seem to be in favor virtual currency.

Travel Tech: The travel and tourism industry of India is currently ranked 7th globally in terms of its contribution to the GDP. The domestic travel accounted for a staggering 88% of the total revenue generated by the tourism sector in 2016.According to a Google India-BCG report, the country's travel market (both offline and online) is expected to become a $48 Bn industry within the next three years. This has greatly encouraged travel tech startups in India. As per an IBEF report, the online travel space will likely account for 40% to 50% of total transactions by 2020.Despite this enormous potential, the Indian online hotel booking sector has a penetration of only around 19%, according to a report by Deutsche Bank AG. Most customers in Tier II and Tier III cities around the country still prefer to book hotels and accommodations through offline means in the travel space. According to Inc42 Data Labs, the online travel sector saw a total funding of $790 Mn through 30 deals up to November 2017. Further, one of the biggest consolidations in the

Indian online travel industry took place in October 2016, when MakeMyTrip merged with Ibibio, the valuation of which stood at $1.8 Bn. (Report by Morgan Stanley)

EdTech: Lack of quality education is one of the biggest shortcomings that the Indian government is still struggling to overcome. Indian edtech startups are working to enhance access to affordable quality education across primary, secondary and higher levels. However, the dynamics of the edtech sector are very different as compared to other sectors like ecommerce. Although there is an enormous market to cater, edtech startups in India are currently held back due to inadequacies in infrastructure and awareness. But in 2017, the country's education market underwent substantial growth, with a lot of startups expanding into tier II and tier III cities in order to create a social impact. Instead of focusing on the academic curriculum, a number of startups are now working to provide personality development and career counseling services. However, online education is expected to grow 8x in the next five years (report by Google, KPMG). This is likely to have a significant impact on the edtech market that has a potential to touch $1.96 Bn by 2021 from where it stands now i.e. $247 Mn. Further, as per Inc42 Data labs, the sector saw a total infusion of $165.5 Mn through 48 deals till Nov As per a report by Google and KPMG, India currently has 234 Mn Indian language users online, compared to 175 Mn English users. In 2018, edtech startups will focus on e-learning to semi-urban and rural areas across the country. By leveraging vernacular languages, these startups are looking to make education more accessible to the masses. Education is of paramount importance in a developing nation like India. While the government's slogan of Digital India is slowly taking shape, with fintech and big data segment (among others) benefiting from the move and investors' sentiments going in the positive direction for edtech, the future looks bright for the sector.

EnterpriseTech: Enterprise tech, as a sector, is moving forward in India with businesses getting more specialised help from SaaS and ERP management startups. With technological advancements in India, numerous SMEs are now leveraging SaaS and related technologies to optimize their overall performance. In 2017, the two giants Zoho and Fresh works contributed with over 4,000 total employees and combined revenue of over $350 Mn. As per Inc42 Data labs, Indian enterprise sector received a cumulative funding of $525 Mn in 129 deals till November 2017.The Indian SaaS/enterprise software market currently accounting for 9% of all software sales is expected to reach $1 Bn by 2020.

Consumer Services: A consumer service, as in hyper local food and grocery delivery, has been the hottest ticket in the Indian startup ecosystem since 2015. Though it saw a slum in 2016, it recovered in 2017. As per a Goldman Sachs report, the Indian online grocery market is estimated to reach $40 Mn (INR 270 Cr) by FY19 growing at a CAGR of 62% from 2016 to 2022. Morgan Stanley expects the online food and grocery segment to become the fastest-growing segment, expanding at a compounded annual growth rate of 141% by 2020 and contributing $15 Bn, or 12.5%, of overall online retail sales. This has made many players to enter the market, which in turn has saturated the market thereby may possibly pave the way for corporate consolidation in 2018.

Deep Tech: Artificial intelligence and Big Data were the significant sectors that emerged in the Indian startup ecosystem in 2017. Globally, revenues from the big data and analytics industry are expected to soar from $130.1 Bn in 2016 to $203 Bn by 2020 growing at a CAGR of 11.7%, as per a report by International Data Corporation (IDC). According to a study carried out by Analytics India Magazine and Analytix Labs titled 'Analytics India Industry Study 2017', the sector is currently generating $2.03 Bn in yearly revenues in India alone. Growing at a compound annual growth rate of 23.8%, the

market for big data and analytics is slated to almost double by 2020. On the other hand, globally, the AI sector is poised to grow to $16.06 Bn by 2022.In 2018, deeptech startups leveraging AI and Big Data are expected to develop 3D modeling solutions for better monitoring of warehouses and retail floors. There will also be the increased cross-sector application of AI in healthtech and fintech. Furthermore, deeptech will find use in defense and agritech for building efficient computer vision and mapping solutions.

Macro Perspective of Startups: India has been late entrant in the system of startups. Unlike other countries such as Singapore, United States, Germany, China etc., it has however picked up very fast in the race of the ecosystem of startups initially. Though as per many reports and writings, India has been hailed as an emerging leader in the ecosystem of startups, it has been lagging behind in the overall parameters, which are believed to influence the investments of venture capitalists in the startups. Initially, since 2015, the funding showed a rise, but in 2016, there was a decline in the funding of the startups accompanied by many failures. In 2017, however, the situation has improved marginally. There was a record $13.7 billion being invested into the Indian startup ecosystem across 820 deals in 2017. However, 2016 and 2015 saw a larger number of deals, at 1,034 and 913 respectively. Thus there has been dynamisms in the global set ups of startups of India as compared to other countries. There has been a shift in the investments in startups from India to other countries on account of many factors such as political environment, infrastructure, cost of living index, innovations etc.

A brief analysis is made of the various parameters influencing the ecosystem of startups at the macro level. The select parameters have been taken from the Network Readiness Index, also referred to as Technology Readiness, measures the propensity for countries to exploit the opportunities offered by information and communications technology (ICT). The Quality of Life Index, Purchasing power Index and the Cost of Living Index has also been analysedto know India's relative position with the countries as shown in Table 1

Table 1 India's Position in the Indexes (2018)

Countries	QLI	PPI	C LI
Germany	190.04	125.01	74.35
Australia	188.7	122.98	84.3
US	180.56	127.62	72.95
Spain	174.92	90.67	61.75
Canada	173.9	118.92	72.48
UK	171.89	108.54	75.45
France	166.22	101.21	83.86
India	122.09	79.27	26.88
Indonesia	112.89	37.49	39.74
Brazil	100.13	41.55	51.33
Netherland	191.25	109.48	82.69
Singapore	150.45	95.89	91.4
Malaysia	116.05	72.98	44.72
Russia	103.32	51.11	43.89
China	99.43	72.28	44.56

QLI-Quality of Life Index, PPI – Purchasing Parity Index, CLI-Cost of Living Index

Source: Numbeo.com

Table (1) shows that India has been lagging behind in terms of her quality of life Index as well as purchasing parity Index. But compared to china its position is much better. However in terms of cost of living index, India has a better index at 26.88 as compared to 44.56 (China) and 91.40(Singapore). It should be noted that apart from this indexes, there are certain other parameters which also plays an important role in determining the success of the ecosystem of startups. Table (2) explains India's relative positioning in terms of her environment (political & Business), infrastructure & digital content, ICT usage and the economic impact. These factors do equally play a significant role in the promotion of the startups. Talent expressed in terms of the skills also does play an important role in attracting the venture capitalists towards the funding of the startups in the initial and the later stages. Singapore is the

classic example where talents have played an important role in her ecosystem of startups.

Table 2 Parameters influencing the Ecosystem of startups (2017)

Countries	P &Re	B & Ie	In. & Dc	Aff	Skills	Iu	Bu	Gu	Eco I
Singapore	5.9	6	6.6	5.3	6.5	6.4	5.4	6.3	5.9
UK	5.7	5.5	6.3	5.7	5.8	6.6	5.2	5.4	5.3
Switzerland	5.6	5.4	6.8	5.4	6.4	6.6	6.1	4.5	6.1
Australia	5.4	5.1	7	5.6	6	6.3	4.8	5	4.7
Canada	5.4	5.5	7	5.6	6.1	5.7	4.9	5.1	5.2
Germany	5.4	5	6.6	5.6	6.1	6.2	5.8	4.8	5.4
US	5.2	5.5	7	6.4	5.8	6.2	5.9	5.4	5.8
Malaysia	5.1	5.2	4.2	4.7	5.4	5.1	4.7	5.5	4.1
Spain	4	4.8	5.4	5.9	5.3	5.6	3.9	4.7	4
China	3.9	3.8	3.3	5.5	5.4	3.9	3.9	4.6	3.8
Indonesia	3.8	4.4	2.9	5.9	5.1	3.3	4.1	3.9	3.1
India	3.7	3.7	2.6	6.6	4.1	2.1	3.6	4.1	3.1
Russia	3.6	4.5	4.7	6.6	5.4	5.3	3.6	4.4	3.7
Brazil	3.4	3.4	4.5	6.2	4.5	4.8	3.7	3.6	3.1
France		4.8	6.3	5.2	5.9	6	5	5.3	4.9

P&Re-Political & Regulatory Environment, B & Ie- Business & Innovation Environment,
In & Dc- Infrastructure & Digital content, Aff-Affordability, Iu – Individual Usage, Bu – Business
Usage, Gu – Government Usage & Eco I – Economic Impact
Source: World economic Forum, Network Readiness Index, 2017.

Table (2) clearly shows that though India's performance has been satisfactory in terms of her political & regulatory environment and excellent in terms of the affordability, but its performance has not been satisfactory in terms of Business & environment infrastructure, skills (talents) & individual usage. Infact India's position in the index has come down for the fourth consecutive year in a row, from 89th in 2015, 83rd in 2014 and 68th in 2013. Its overall position has been 91st out of 139 countries. Table (3) indicates India's relative positioning overall in terms of her ranks and the index Values

Table 3 India's Rankings at Glance

Parameters	Index	Rank/139
Environment sub-Index	3.7	91
Political & Regulatory environment	3.7	99
Business & Innovation environment	3.7	78
Readiness sub-Index	4.4	88
Infrastructure & digital content	2.6	114
Affordability	6.6	8
Skills	4.1	101
Usage Sub-Index	3.3	103
Individual Usage	2.1	120
Business Usage	4.1	75
Government Usage	4.1	59
Economic impact	3.1	80

Source: World Economic Forum

Further, as per the Global Competitiveness report of 2017-18, India has shown marginal improvements in infrastructure (66th, up two), higher education and training (75th, up six), and

technological readiness (107th, up three), reflecting recent public investments in these areas. Performance also improves in ICT indicators, particularly Internet bandwidth per user, mobile phone and broadband subscriptions, and Internet access in schools. The quality of institutions has increased further, especially in terms of efficiency of public spending (20th), but the private sector still considers corruption to be the most problematic factor for doing business in India. But there is a need for greater penetration in the domestic market and the increase the pace of reforms in the ecosystem of startups.

Conclusions: India has been still struggling with its literacy levels as 1/3rd of its population is not enrolled in secondary education. Only 15 out of 100 households have access to the Internet and mobile broadband remains a privilege of the few, with only 5.5 subscriptions for every 100 people. This is in spite of the fact that affordability has long been one of the strengths of the Indian ICT ecosystem. The economic parameters have given a strong signal for the entrepreneurs to create innovative propositions and not me-too products. There is a need for more liberalized tax regime as many companies have shifted overseas (US/Singapore) to avoid the angel tax net. The lack of funding has also impeded the growth for companies, and angel investors have become wary.

However, the Government of India's Fund of Fund startups is committed to several venture funds. This should bring more money into the startup ecosystem and encourage entrepreneurs to get started. A more pro-active approach will be the need of the hour if India has to gain supremacy in the ecosystem of startups in the years to come.

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