



2023-2024

Beyond Margins



Department of Economics
Sophia College (Empowered Autonomous), Mumbai

Issue 3

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Beyond Margins
Sophia College (Empowered Autonomous),
Mumbai
Annual Magazine: Issue 3

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Editor's Note

Dear Readers,

With great pleasure, I introduce the third edition of *Beyond Margins Magazine*, an annual publication and the first-ever print edition. As the Editor-in-Chief, my team and I have worked hard to compile a selection of enlightening and stimulating research papers and articles. We demonstrate our rigorous screening process and double-blind review process.

In the world of academia, every student should aim to develop the ability to write research papers. It enables students to look beyond the textbooks and delve deeply into topics. Additionally, it fosters critical thinking abilities. This publication is tangible proof of Sophia College's commitment to the research-oriented culture that the department has continuously fostered among its students. I am very glad to have had the opportunity to work on the current edition which covers a plethora of areas and interests from behavioural economics to a case study on planned cities and it was truly a delight to put it together.

The magazine covers an insightful inspection of Japanification and its comparative analysis with India and China written by Gargee Kalyankar and Navya Khulbe, where they provide an intriguing study of Japanese deflation. Agriculture has played a crucial role in India's economy despite several challenges. Bhavya Singh and Arisha Mohsin present an incisive examination of the role of private-sector startups in modern agricultural setups. The magazine also features an array of articles from spending patterns of gamers, and materialistic consumerism in cinema to analysing the real invisible hand in the market and several more. Furthermore, considering the limited amount of information and the growing significance of the Creator Economy, the editorial team has put together an article on the Creator Economy.

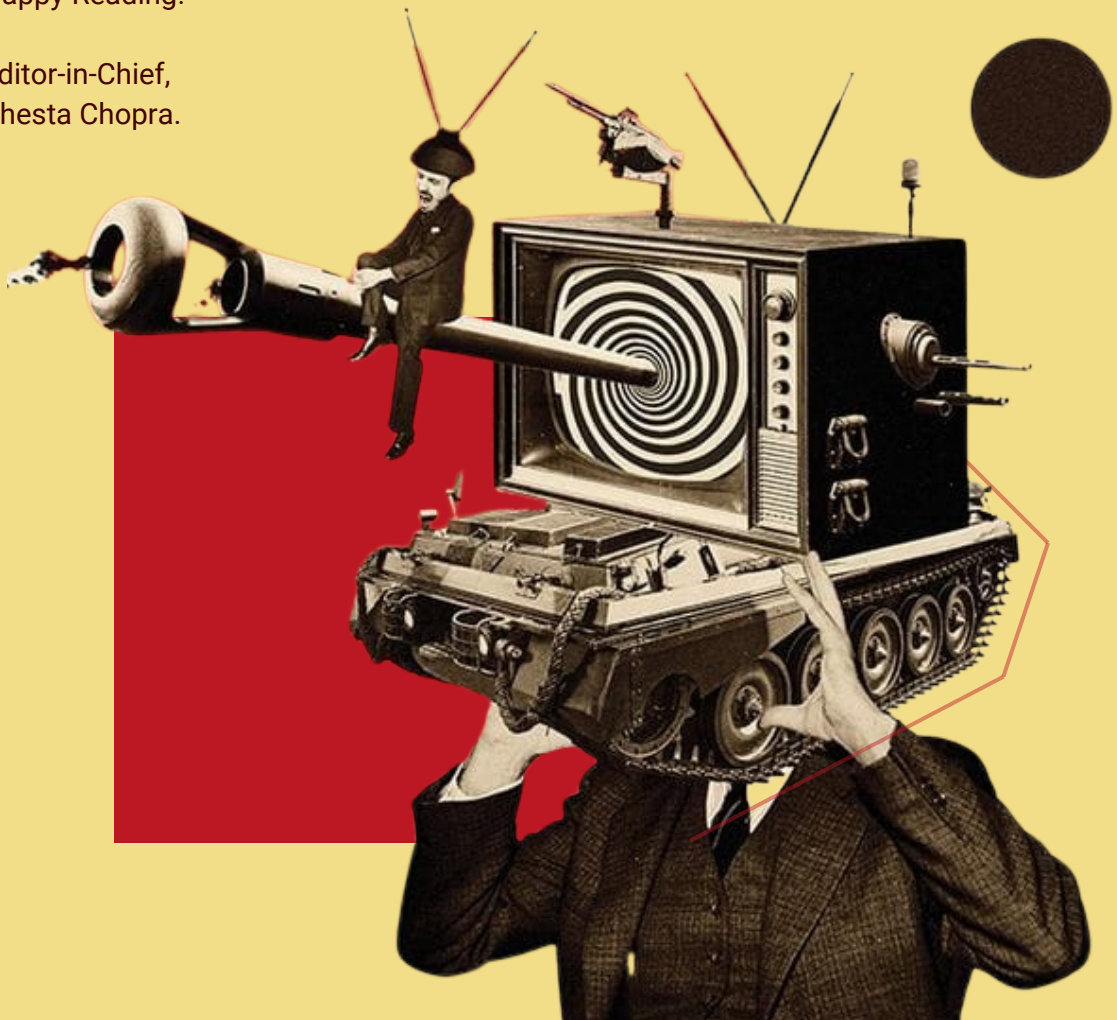
The success behind the release of this edition is owed to numerous individuals, and I extend my heartfelt gratitude to each of them for giving me a chance to learn and explore. I am thankful to our reviewers who provided deep and insightful feedback for each paper, making it a better version of itself.

I would also like to thank our faculty members, Dr Sangeeta Dubey, Dr Sunita Jadhav and Ms Nisha Yadav for constantly encouraging and supporting the editorial board.

Our first offline publication this year came with its own set of difficulties, but I am especially thankful to Gargee Kalyankar, Head of PR and Operations, and Team PR for bringing the sponsors, FIKAA and Neo Narratives. I have so much gratitude and admiration for our Head of Design, Sanvi Barjatya and Team Design who made *Beyond Margins* stand out with their creativity in design. Lastly, I am indebted to Team Editorial for their constant support this year. In the upcoming issues, I hope Team Beyond Margins will consist of a talented group of people whose efforts will continue to elevate this magazine and provide more undergraduates with opportunities to present their research.

I hope readers find the magazine interesting, informative and engaging and enjoy reading it!
Happy Reading!

Editor-in-Chief,
Chesta Chopra.



FACULTY NOTE

Dear Readers,

The study of economics goes beyond the walls of a classroom as it touches several aspects of our lives. It was the interest of students to explore the depths of economic studies that led to the development of the student-led economics magazine *Beyond Margins*. This magazine is completely a student initiative. Every aspect of the magazine – its design, content, publicity and marketing, collection of research articles, social media presence – is entirely handled and managed by the students of the economics department. These dedicated and sincere students work relentlessly throughout the year, handling the magazine independently. Their sheer enthusiasm and effort resulted in the launch of a year-end publication consisting of research articles contributed by students from all over the country. These articles are reviewed by the faculty of the Department of Economics and are published after close quality scrutiny. The process of publication is handled carefully by the students who form the editorial board of the magazine.

It gives me immense pleasure to announce that this year, we are launching the print version of *Beyond Margins*. This successful launch was driven by the students' heartfelt efforts and determination.

I would like to congratulate and express my appreciation to every student part of *Beyond Margins*. The Department of Economics is extremely proud of all the students who conceived this magazine and the students who carry forward the dream despite their hectic academic schedules. Dear students, the Department of Economics is very proud of you all!

My best wishes for the future of the magazine. I hope the good work continues.

Best Regards,
Dr. Sangeeta Dubey
HOD, Department of Economics



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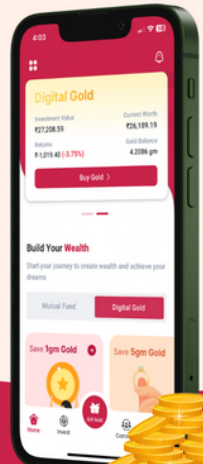
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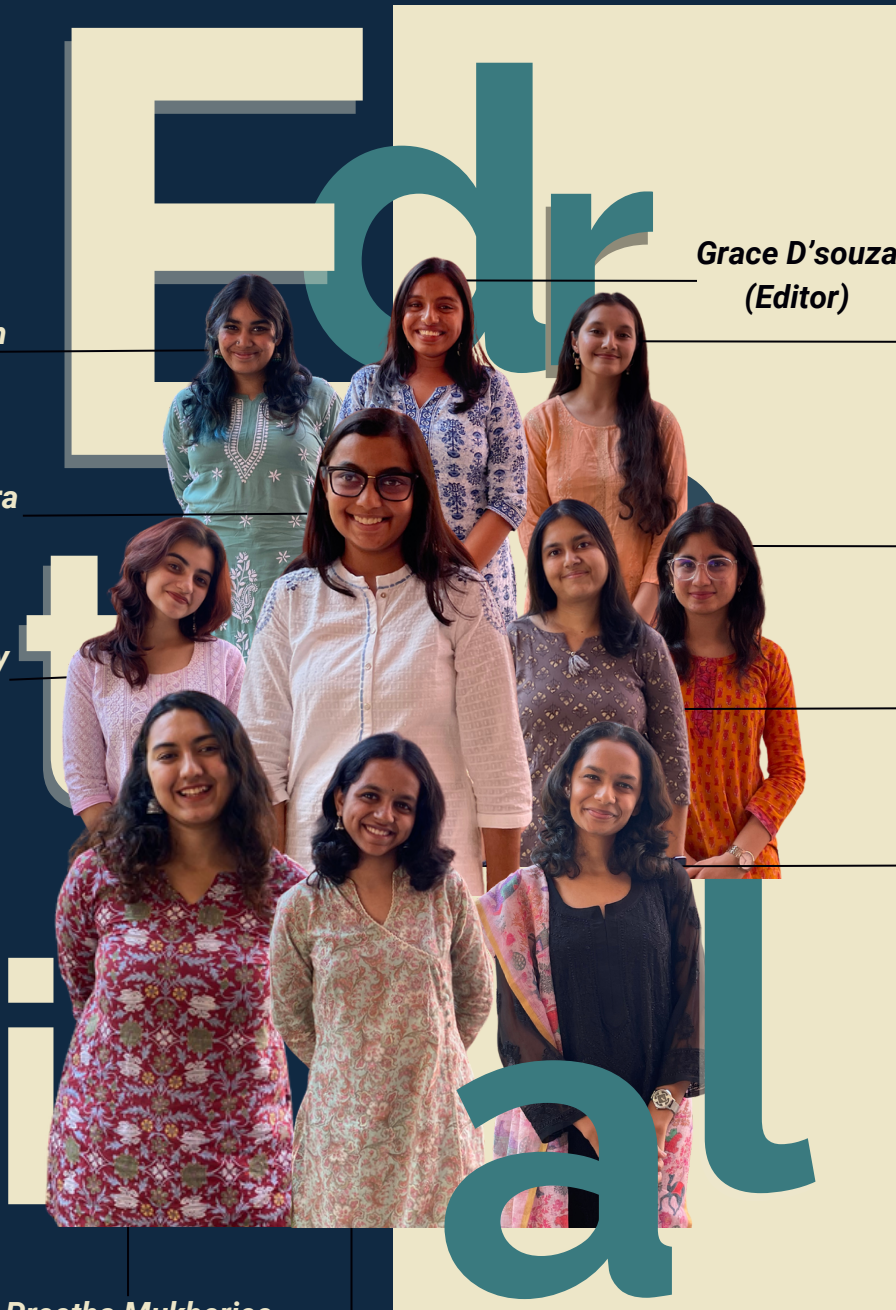


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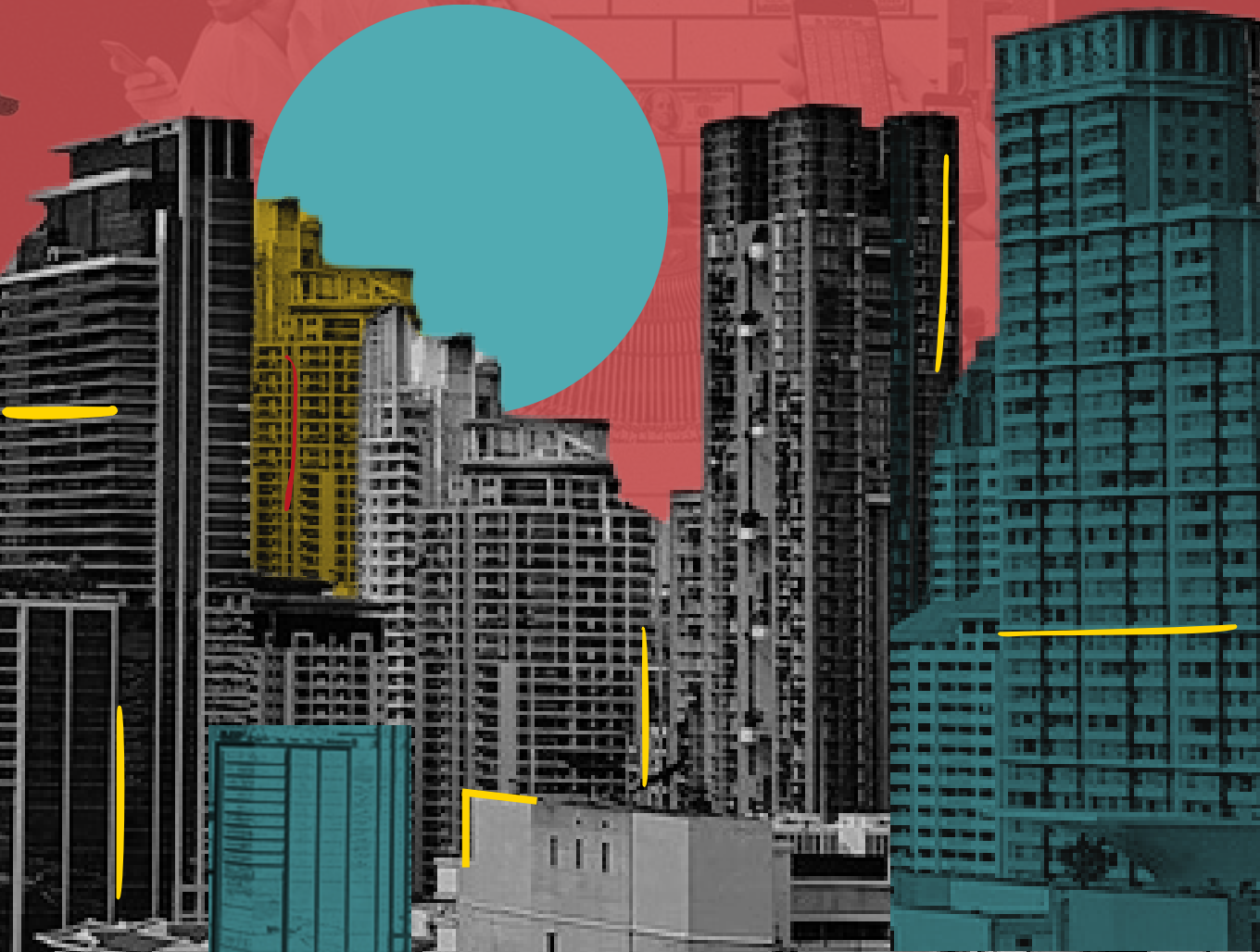
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Research Papers





Japanification: A Comparative Dive into Economic Trends with China and India

-Gargee Kalyankar & Navya Khulbe

This paper aims to explore the intriguing case study of Japanese deflation. The Japanese economy has been experiencing disinflation since the early 1990s with a burst of the economic bubble. The study attempts to examine the unusual phenomenon of 'Japanification'. It discusses how the world's third-largest economy's GDP growth averaged only 1.76% from 1981 to 2021. While the USA and China have shown extraordinary growth as well as subsequent inflationary pressures in the same decades, Japan has been unable to dodge its slumped economic model. Thus, this paper focuses on the causes that led to this situation and the remedies that this non-conventional structure could opt for. Furthermore, it aims to analyse factors and draw comparisons within the context of the Chinese and the Indian economy.

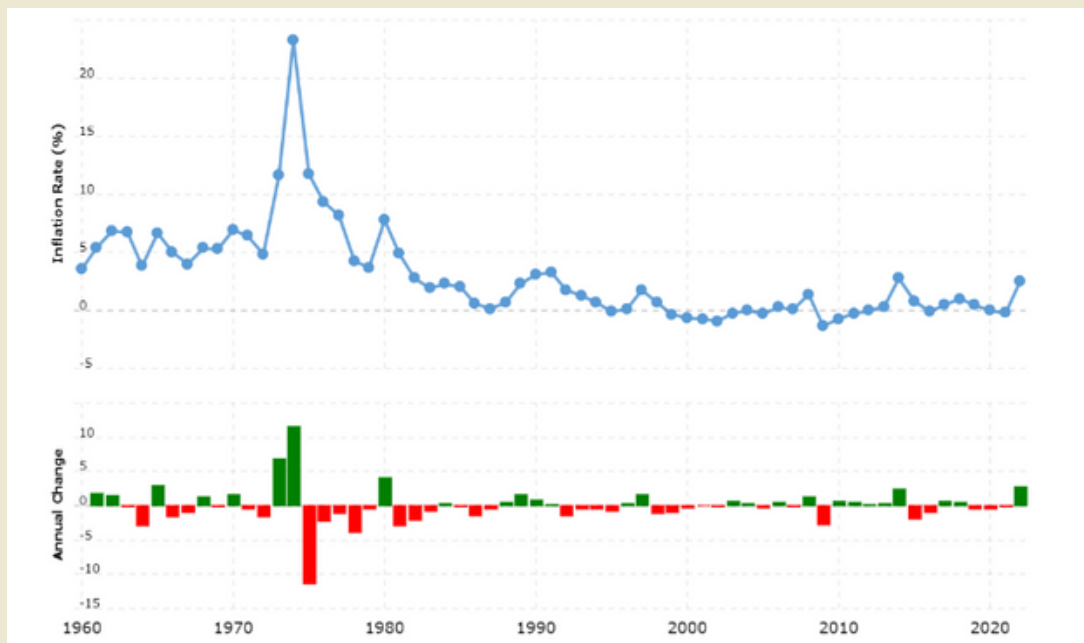


Abstract
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Introduction

With persistent bottlenecks in the supply chain and the constant energy and food crisis during the pandemic-ridden years, inflation has turned out to become a global phenomenon. According to the World Bank, it has affected all the economies of the world, be it developed, emerging market economies or developing countries. The global inflation rate was 4.7% in 2021 which rose to 8.71% in 2022. Japan stands out as a curious outlier to this trend. The country had an inflation rate of 0.8% in December 2021 with a negative rate for most of 2021 and 4% in December 2022. The following graph clearly illustrates the near-zero inflation rates faced by Japan for most of the years after the 1990s.

Between the 1960s and 1980s, Japan's economy was the envy of the world due to its high level of economic growth. In the early 1990s, Japan's economic bubble burst because of wanton market speculation and led to a long-running economic crisis. As a result of this, the decade later came to be widely known as the 'Lost Decade' due to the immensely poor economic performance in the 1990s. With the prevalence of high growth rates, record-low interest rates became persistent and the real estate valuations increased. As the Bank of Japan realised that the bubble had become unsustainable, it raised the interest rates. However, the countermeasure led to a massive stock market crash and caused a debt crisis resulting in consolidation and



Source: World Bank. (n.d.). Japan Inflation Rate 1960-2024. [Graph]. World Bank.

government bailouts. With speculative assets experiencing a significant downturn, it became increasingly difficult for the borrowers backed by these factors to make the payments on their debts. The country experienced an economic growth halt, the stock markets fluttered around all-time lows and the property market didn't recover to reach the pre-boom levels. Therefore, the Japanese followed austerity measures which negatively affected aggregate demand. This, in turn, prompted the consumers to hoard money, eventually triggering a deflationary spiral in the economy.

Research question and methodology

1. To understand and explore the reason behind the Japanese deflation.
2. Is China heading towards a 'Japanification' of its own?
3. Analyse India's position in the same context and examine if it is moving towards similar experiences. How can it avert such conditions in the future?

The COVID-19 pandemic and the dynamic geo-political situation worldwide caused an increase in the overall prices of electricity, food and gas which posed the challenges of rising inflation for several economies. The supply chain bottlenecks, disruptions in supply and demand, unprecedented surge in

money circulation and increase in spending capacity after the lockdown combined with the government's attempts for economic recovery point towards the persisting inflationary pressures throughout the world.

Still, while the rest of the G7 countries (Canada, France, Italy, United Kingdom, United States, and Germany) are facing visible inflation, Japan defies all norms. How has the country with the highest life expectancy among the G7, and strikingly low crime rates, not been able to get out of its bewildering stagnation? To fathom this unique phenomenon of Japanification, we, therefore, evaluated the countermeasures taken by the government to win this reverse battle with inflation.

The factors examined are concurrent with the critical issues faced by some of the significant economies in today's world. An analysis of the causes and solutions of Japan's long-lasting recession along with the examination of the persisting slow growth is also crucial for countries such as the People's Republic of China (PRC). China, the world's second-largest economy is currently at a critical stage where its population is shrinking for the first time since the Great Leap Forward (GLF). The GLF was a campaign initiated in 1958 in China to undertake large-scale industrialisation in urban and rural areas. While it encouraged

urban people to set up industries in their backyard, it brought a commune system in the rural areas leading to collective farming. The falling birth rate along with extended life expectancy has transformed the Chinese population into an ageing population posing a challenge to both its economic growth as well as demands for increased social security. The current demographic transition of China is very similar to what Japan experienced decades back. Is China heading towards 'Japanification' of its own?

Further, the Indian Economic Survey of 2018-19 states that India's demographic dividend will peak around 2041, when the working population of 20-59 years, is expected to constitute a share of 59%. This leaves a narrow margin for the country to harness its potential economic growth. Moreover, looking at the recent estimates of India surpassing China to become the world's most populous country, what does it mean for its economic trajectory? We aim to recognise how India can learn from the two economies and avoid heading into stagnation in the future.

To support the concept of Japanification in both countries, we looked into the following data - the growth of the Chinese real estate market, and its working-age population, the

growth and percentage of the elderly population in the Indian subcontinent, the country's political dependence on the concept of freebies and the dependence of regional economies on Central transfers in both the nations.

The papers were taken from different platforms such as JSTOR, ResearchGate, and the official records of the State. This paper is a combination of qualitative and quantitative data and is based on the information collected through secondary sources. A qualitative analysis method was undertaken to produce a coherent understanding of the topic.

Literature review

In the early 1990s, the Japanese economy suffered through real estate and stock market bubble bursts causing sluggish growth in the economy. The Japanese economy faced structural changes instead of a temporary economic downturn (Yoshino & Taghizadeh-Hesary, 2015). The one structural change that Nobel Laureate Paul Krugman argued is the rationale behind Japan's recession was the country facing a liquidity trap as the monetary policy strategy became ineffective in bringing down interest rates. However, the writers also examine several other reasons for the long-term stagnation in their paper.

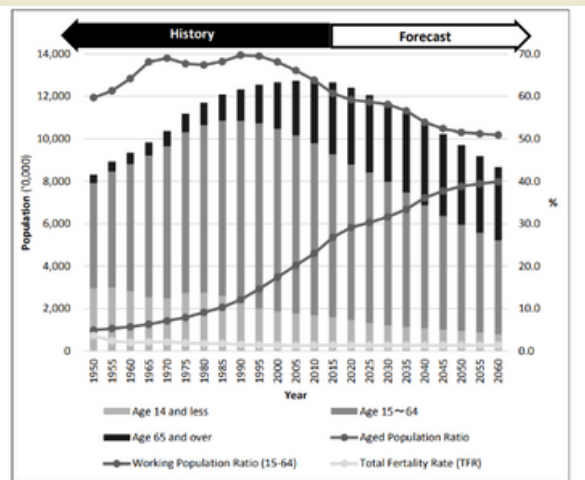
To begin with, the banking behaviour

was one of the factors which led to the stagnation. In the 1980s, the banks issued loans based on collateral without paying any attention to either the quality of the collateral or the capacity of the borrowers to generate sufficient income to service the debt. As the land prices took a hit in 1991, these banks got piled up with bad loan assets causing banking failures. Furthermore, due to the Basel Capital requirements, the banks were obligated to hold 8% of the capital irrespective of their economic conditions. Consequently, the banks reduced their loans to avoid a shortage of capital leading to the credit crunch in the country. Small enterprises suffered more in attempting to raise money as compared to large enterprises.

The diminished effectiveness of fiscal policy was also an emerging factor. The then Prime Minister Miyazawa Kiichi implemented a fiscal policy to boost Japan's growth through public investment. However, the policy did not succeed because of the decline in the multiplier for investment as major infrastructural development had already taken place. Moreover, the ineffective distribution of investment with its concentration in rural areas yielded low results and only increased the budget deficits in the economy (Yoshino & Taghizadeh-Hesary,

2015).

Another important factor was the ageing population of the country. Having the highest life expectancy in the world, along with a low retirement age, Japan faced a huge problem of diminishing the working population. Additionally, the economy's wage rate system is based on seniority (length of service) and not productivity, which makes it difficult for elderly people to be hired by companies, even if they are interested in working. As a result of this, the government has to incur high social welfare costs to support the ageing population. The following graph reveals the demographic problems in the country (Hattori & Maeda, 2000).



Source: Hesary, F.T. (2015). *Causes and Remedies for Japan's Long-Lasting Recession: Lessons for the People's Republic of China*. [Scientific figure]. ResearchGate.

According to Akram (2014), Japan's low female labour force participation is also a serious concern. Steinberg and

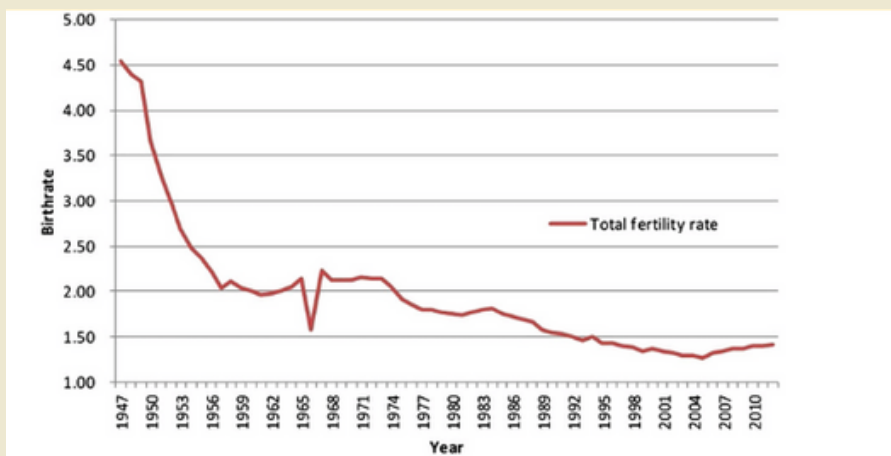
Nakane (2012) suggested that there are two main causes for the low participation rate: women are entering the workforce less frequently, and leaving their careers after giving birth has become a common practice. Japan's potential growth rate can rise even further with a rise in female labour participation, provided that both aggregate demand and labour demand increase. However, if the percentage of female workers participating in the labour force increased without sufficient growth in aggregate demand then the unemployment rate would rise.

Apart from an ageing population, Japan's sluggish growth rate is also attributed to a low population growth rate. Its population has been declining since 2006, coupled with a low fertility rate. At 1.4 births per

woman, Japan's fertility rate is much lower than the replacement replacement rate of 2.1 (Akram, 2014). These unfavourable demographics and poor economic growth have thus resulted in a decline in the employment-to-population ratio and sluggish job growth.

In the financial year of 2015, approximately 16% of the total government spending was allocated towards transfers to local governments, making it the second-largest expense after social security. The local governments made minimal contributions towards strengthening their economy and completely depended on the central transfers. (Yoshino & Taghizadeh-Hesary, 2015).

Yoshino and Taghizadeh-Hesary provide some recommendations to revitalise the economy and prevent



Source: Based on data from the *Demographic Statistics Data Book*, National Institute of Population and Social Security Research (2014).

Source- Seike, A. (2014). *Trends in the Fertility Rate in Japan, 1947-2012*. [Figure]. Researchgate.

long-term recessions. The first and foremost step is to introduce reforms that are inclusive of the elderly population in the economy's human capital and the wage rate system needs to be based on productivity rather than seniority. Secondly, inducing greater female participation in the labour force along with improving childcare services can also result in the overall growth of the economy. This will also increase their representation in large enterprises as due to poor childcare services, women face challenges in taking up jobs with less flexibility. Furthermore, in 2015, Small and Medium-sized Enterprises (SMEs) accounted for 99% of businesses in Japan and employed nearly 70% of the working population. Thus, SMEs are typically the backbone of the Japanese economy and should be provided a stable financial support and credit guarantees. Other suggested actions include raising the government research and development budget for SMEs to ensure the creation of new technologies, creating demand and sales channels for SMEs in domestic as well as foreign markets and increasing literacy of SMEs for insurance, taxation and entrepreneurial education. Finally, an incentive mechanism needs to be in place to reduce central transfers to local governments and encourage them to raise funds from the private sector. This should also be

accompanied by a proper structure for the distribution of taxes among various levels of government.

To overcome its problem of persistent deflation and slow growth of the economy, Japan adopted Abenomics in 2013, which refers to reviving the Japanese economy. It consisted of three arrows - fiscal consolidation, aggressive monetary easing by the Bank of Japan, and structural reforms to make the Japanese economy more competitive. Fiscal consolidation included buying short to long-term government bonds, along with a price stability target of 2% set by the Bank of Japan. Monetary easing included an expansion of the money supply and setting negative interest rates. The structural reforms aimed at a growth strategy with expansive public investment and revision of the Bank of Japan Act among other reforms.

Although many think that Abenomics was fairly effective in revitalising the economy by creating inflationary expectations in the market and nurturing a sense of stability, some consider the policies a failure. The importance of this research is to carefully examine and understand the various economic factors that led to the persistent recession of the Japanese economy and ultimately understand the measures that Japan took to overcome these issues.

Analysis and findings

When we examine the factors that supposedly caused all the destruction in the Japanese economy, it is striking that the people of China appear to be experiencing similar issues. One of the crucial factors that resulted in Japan's slow growth was the population imbalance which pushed the country into recession. Population ageing had multiple implications for Japan's economy as it led to labour shortages and increased pressure on the social security system. The elderly should continue working and taking part in community activities, according to former Prime Minister of Japan, Shinzo Abe, who predicted that the government will extend the retirement age to 71 or higher (Sanderson, 2018). Given that Japan's government currently pays for 20% of social security payments, rising pension expenditures and healthcare expenses will have a direct impact on financial management.

Further analysing China and its similarities with the Japanese events, China, being the second largest economy in the world, has been witnessing a rise in its elderly population primarily as a result of the government's strict one-child policy implemented during the 1980s. Over the past few years, the government has attempted to improve the birth

rate in the country by discarding the one-child policy and motivating the citizens to have more children. Since 2021, local governments have provided longer maternity leave, tax deductions and housing subsidies, but have failed to improve the birth rate. China's working-age population (persons between 16-59 years of age) has declined from 62.5% in 2021 to 62% in 2022 (Wu, 2023). China is committing the same mistakes as Japan and facing similar consequences. Researchers believe that the current trend of low birth rates will result in a manufacturing recession and economic slowdown in the country.

In 2022, China experienced one of its worst annual economic performances in the last 50 years, with the economy growing just 3% for the year. China's economy struggled with a real estate and stock market bubble, rising debt and heightened default risk, all of which were spectres of Japan's economy. In 2022, According to Reuters, the prices of new homes in September declined at the fastest rate since August 2015, falling by 1.5% on a Y-o-Y basis (Gao & Woo, 2022). The real estate market crashed because of the government limiting the debt to developers, because of this several projects were left incomplete by the developers. Thus, the confidence in the real estate sector has massively crashed.

Fiscal decentralisation has been a

fundamental factor in China's transition to a market economy, although it suffers from the high dependence of local governments on central government payments. At present the local governments are faced with the problem of unreasonable and inadequate fiscal division from the centre. The government has undertaken measures to ease these fiscal strains and laid out plans to divide fiscal revenues and spending obligations among local governments. This is in line with the Japanese local government's reliance on the central government transfers rather than making efforts themselves to revitalise and strengthen regional economies.

After looking at the above two economies, we now analyse India's position comparatively. According to Mint, India is headed towards a situation where the 60+ population is steadily increasing across the country. As per the 2011 census, the proportion of elderly people in the overall population is low (8.6%), but their overall number is very high (104 million). The projections state that this might double by 2036 to 225 million and then reach 425 million by 2061, which would be a fourfold increase in 50 years. Thus, ageing is occurring at a very quick pace in the Indian subcontinent. While countries like France and Sweden took around

110 and 80 years respectively, to double their share of the older population, India on the other hand is expected to do so in a matter of 20 years. The increase of our 60+ population in 50 years, i.e. from 2011 to 2061, is expected to be more than 320 million. In percentage terms, this amounts to India's elderly population increasing from 8.6% as per the 2011 census to 12.5% by 2030, almost 20% by 2050, and a little more than 25% by 2061. Every fourth person in India is expected to be above 60 years of age in 2061 (Srinivasan & Singh, 2022).

Most importantly, India employs a substantial proportion of its workforce in the informal sector, which means inadequate social protection for older people. Thus, older persons will continue to work or be forced to work because of poor economic conditions. As a matter of fact, in 2021, almost 10% of the total workers in MGNREGA were 61 years or older. Thus, to provide an adequate standard of living for the elderly and prevent any economic harm in the years that follow, this issue demands significant and prompt attention at the political and legislative levels (Srinivasan & Singh, 2022).

The next factor stands with respect to transfers made by the central government to the state government. The Union government transferred a total of INR 8.83 lakh crore to state governments in FY22, exceeding the

revised estimate by INR 1.38 lakh crore, or 18.6%. This unprecedented transfer of greater funds was done to exhibit support from the Centre through the provision of financial assistance under GST norms. Heavy dependence on Centre transfers by the local governments can prove to be detrimental to the economy. Especially in a country with several levels of governance, each level must work towards generating its sources of revenue.

Another issue which is highly specific to the Indian economy is the controversial topic of the provision of freebies. Indian political environment has made the concept of freebies a very controversial one. Most political parties compete with each other by making extravagant promises of freebies, such as free laptops and cell phones, to win over people to their cause. This is quite prominent during the pre-election period. Although freebies stimulate a certain level of economic growth and tend to provide necessities of life to the beneficiaries, they can cause macroeconomic instability. They cause a long-term economic impact as such promises are difficult to withdraw considering the political backlash by the citizens. Thus, they will be typically funded by debt in times of slow growth, straining the future financial condition of the country. Therefore, structural

changes are required to fulfil the welfare agenda and responsibility of the government rather than high dependency on freebies.

Conclusion

In this paper, the explanations behind Japan's long-term economic recession after the burst of the bubble during the 1990s have been examined with the view of providing lessons for nations that are supposed to confront similar issues in future, like the People's Republic of China. The analysis of the paper proposes that the Japanese economy was confronted with structural issues as opposed to temporary downturns. Having looked into the similarities between China and Japan, we also need to acknowledge the differences between the two countries. Japan was already an advanced economy with high productivity of labour and well-established institutions before World War II itself. Although the war destroyed capital stock and the post-war decades were dedicated to rebuilding capital, it was much simpler than developing an economic base from scratch.

On the other hand, China, though growing rapidly, is still considered a developing nation with plenty of room for productivity growth. Even though China, similar to Japan, is currently confronting an ageing population issue, the nature of the same is quite

different. In China, it is a man-made phenomenon, because it adopted the one-child policy. The stage of each country's demographic transition is similarly vastly different. More critically, though, labour productivity is still increasing quickly in China, although the country's labour force will shrink due to demographics. Its development of human capital is accelerating quickly and catching up to industrialised nations. Moreover, an appreciation-triggered crisis and its aftermath as occurred in Japan seems unlikely to take place in China. Thus, although both countries share several challenges, they are different in terms of economic fundamentals, stages of development, and macroeconomic policies. Therefore, as long as the risks are worked upon and the remedies implemented, it is unlikely for China to enter into a lost decade.

Today, as India takes China's place as the world's most populous country there are some stark differences

between the two countries. While China's demographic dividend is declining, India continues to grow and is yet to reach its peak. About half of the present population of India is under the age of 30, whereas only about 35% of the Chinese are in the same age group. These demographic transitions have advantages concerning the labour force and economic development in India.

This necessitates suitable policy decisions to ensure that a large working population is used to its best abilities and does not end up as a liability. Indian politicians need to recognise the implications of offering freebies to the citizens. Although they harness the welfare potential, these decisions need to be taken seriously and not based on political considerations. India today has immense growth potential and has a chance to become the world's fastest-growing economy. Thus, it is up to India's policymakers to sustain and strengthen its potential.

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Agricultural Startups: Prospects in Maharashtra

- *Bhavya Singh & Arisha Mohsin*

Since India gained independence the agricultural sector has significantly contributed to India's development and economic growth. Over the years, significant strides have been made by the sector, such as the adoption of high-yield seed varieties, modern fertilisation practices and enhanced water management systems. However, despite these advancements, the sector continues to grapple with several challenges such as weather vulnerabilities, environmental constraints, fragmented land holdings, inadequate infrastructure and technological disparities. This paper delves into all such problems affecting the agricultural sector of Maharashtra. Amidst these challenges, a burgeoning wave of 'agritech' startups has emerged, using technology to transform farming techniques. The paper conducts case studies on selective startups and evaluates whether these startups supplement governmental efforts or highlight areas where governmental intervention fails. The study concludes with an analysis of whether the government needs to fill the void left by startups and if there are areas requiring immediate intervention.

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Introduction

The agricultural sector is the most important sector of India. Around 55% of the Indian population depends on the agricultural sector for their livelihood (India Brand Equity Foundation, n.d.). The agricultural sector plays an important role in providing food security in the country. It ensures enough production of food and maintains the prices of directly consumable food products or those used as raw materials for other products. Most of the products in the Fast-moving consumer goods (FMCG) markets consume raw materials produced by the agricultural sector, so the cost of these raw materials directly affects the final prices of the products. If the costs of agricultural inputs rise, the margins of the FMCG sector are reduced significantly (Money Control, 2022). Therefore, regulating the price of agricultural products has a dual intention. The first is to promote food security by avoiding high prices on staple food products in the country, and the second is to ensure an affordable price of raw materials produced by the agricultural sector used by most of the FMCG product markets in the country. To ensure food security, the agricultural sector has been heavily regulated by the government. Over the years, the sector has witnessed steady growth, which especially boomed in the 1960s because of the advent of the Green Revolution.

Yet, the the agricultural sector in India has many problems and concerns, including farmers' distress. Despite these challenges, Maharashtra, a leading agricultural state, holds immense potential for growth and transformation. Recognising both the challenges and the potential, this paper examines the prospects of agricultural startups in Maharashtra.

According to the Economic Survey of Maharashtra 2021-22, the average share of agricultural and allied activities in Maharashtra is 11.9%. The agricultural sector in Maharashtra faces problems such as erratic rains, soil erosion and degradation, lack of profitability, high cost of production, market uncertainties, etc. Due to the significant importance of the sector, the government takes active initiatives to keep the agricultural sector afloat. The government of Maharashtra announced a budget of INR 5,47,540 crore which included aid for farmers, employment and development in the sector. While the government of Maharashtra has launched numerous initiatives to foster agricultural growth, this paper focuses on the potential of the private sector to further enhance agricultural output in the state. Beyond government initiatives, a wave of innovative startups is actively reshaping the agricultural landscape.

There are multiple advantages related to the involvement of the private sector in agriculture. Traditionally, the

agricultural sector is perceived as non-profitable. This is due to the fragmented land holdings which reduce the profitability of the agricultural area. However, the emergence of agricultural startups has proved that the sector is profitable and revenue-generating.

This understanding can be pivotal in developing approaches to lessen farmers' reliance on government support. Government expenditures on subsidies and concessions prop up farming practices, potentially creating dependency. Otherwise, farming does not generate enough revenue for sustenance, especially for small farmers. Most farmers take up other livelihoods or ways of earning money because of the lack of profitability. This is also one of the major reasons for migration to urban areas. Since around 86.2% of small and marginal farmers in India have land holdings of less than 2 acres, this reduces their economies of scale and profitability in production (Mint, 2018). Such fragmented and small land holdings are unable to generate large profits as food crops are profitable only when produced in very large quantities. This usually happens when a farmer has huge land holdings that can increase economies of scale, reduce the cost of production and increase net profit. Smaller land holdings lead to structural issues like low realisations of inputs due to structural

irregularities, lack of access to capital which leads to higher investment costs, and lack of knowledge of extension services and technological know-how.

Furthermore, technological inputs and automation are hard to come by when a farmer owns a small piece of land. They are easy to install if the farmer owns a large piece of land since he can cover the cost of technological inputs and automation and still increase revenue. If a farmer aims to generate higher profits from small pieces of land, automation and technologies like nutrient management, biotechnology, and weather forecasting are required. Lack of profitability exists not only in the production of traditional agricultural food crops but also in the markets of other crops, like sugarcane and pulses. Markets for fruits and vegetables may still be problematic for farmers because of the lower shelf life of fruits and vegetables, lack of cold storage facilities, and fewer logistical amenities.

Needless to say, along with the government, the private sector has been taking note of these issues and working towards them. This is a very interesting prospect in the country because agriculture can be transformed as a sector only with the collaborative efforts of the government and the private sector. If the government continues to handle all aspects of agricultural production and distribution, the sector will

not be able to reduce its dependence on governmental support.

Methodology/Research

Objective

This paper aims to explore the growing agritech startups in Maharashtra which are solving various problems of agriculture. It also explores whether the private sector alone can fulfil the necessary requirements of the sector and whether there is a need for collaborative efforts between the government and the private sector. This study is based on a comprehensive analysis of the agricultural landscape in Maharashtra, integrating data from diverse sources such as government reports, academic publications, and industry documents. A key focus is studying the growth trajectories and success factors of agritech startups in the region. We use the case study method to examine the prominence of startups and their prospects. Furthermore, a comparative analysis is undertaken to assess the potential of agritech startups in mitigating government spending through the implementation of innovative solutions. The data and insights of the financial positions of the startups provide valuable information and understanding about the private investments in the agritech sector. This paper also explores the areas of overlap, that is, if the startups are

offering solutions already provided by the government or if they are working on problems of agriculture not met by the government. It aims to understand the areas where the startups are making an impact along with the government and the prospect of collaborative efforts between them. This multifaceted approach facilitates a holistic understanding of the interplay between government initiatives, agritech startups, and the sustainable development of agriculture in Maharashtra.

Literature Review

The agricultural sector of Maharashtra, just like most of India, is almost entirely dependent on rainfall. Considering the heavy dependence of farmers on rainwater, the sector is also affected by natural calamities, including hailstorms, drought, and floods. The government has failed to provide proper irrigation facilities to farmers over the years. Even when the farmers have a source of flowing water and a proper irrigation system, untimely and excessive rains can destroy the crops. No technology in the state can completely protect the crops from the weather conditions. Therefore, climate change poses a major threat to crop yield. This can also be attributed to the lack of greenhouse technology in the agricultural sector of Maharashtra due to the lack of technical know-how, unawareness of technology and differences in agro-climatic conditions

and lack of infrastructure (Goandar Sachin Sopan, 2011).

The National Institute of Abiotic Stress Management published a comprehensive report on the technologies and policies needed to reduce the impact of abiotic stresses on the farmlands of the state. The report highlighted the different problems related to abiotic stresses in the different districts of Maharashtra. Due to climate change, rainfall has become increasingly unpredictable and the temperatures have been rising. So, while the Konkan division of the State frequently meets with problems of flooding, the dry regions of Maharashtra like Marathwada and Western Vidarbha face severe droughts. Therefore, the Konkan division is filled with biodiversity and receives very heavy rainfall which is beneficial for the farmers, while the Marathwada region which acquires a substantial part of the Deccan Plateau receives scanty rainfall. Maharashtra alone occupies 24% of the total drought area of the country, which causes severe agricultural losses. Drought, salinity and temperature stresses are critical since they can potentially threaten the production and productivity of major commercial crops/fruit/livestock of the state (National Institute of Abiotic Stress Management Annual Report, 2022). Unseasonal rains, inadequate rainfall,

hail storms and more create uncertainty and can result in crop failure or may effectively decrease the quality of crops causing a price crash. When a farmer faces crop failure, they do not have enough crops to feed themselves, let alone markets. Such unprecedented situations cause market fluctuations which cause price crashes and losses to the farmers.

According to the Maharashtra Agribusiness Project Network report, most of the horticultural businesses are flooded with traditional players who lack effective value chains. Additionally, there is limited knowledge and application of post-harvest processes which leads to lower quality and shorter shelf life of horticultural crops. Power outages are another one of the biggest challenges for the agricultural sector in the state. The fields are therefore irrigated according to the schedule of electricity supply. Sometimes, the farmers have to irrigate the land at night without any lights on the field (Outlook, 2021). Despite some pockets of deficient rainfall (only 6 talukas), Maharashtra's agricultural sector is projected for a robust 10.2% growth this year (Economic Survey 2022-23). This positive outlook likely stems from the largely good monsoon season across the state. However, the sector still remains vulnerable to a variety of problems, including the high cost of labour, market uncertainties, debt, and low returns on agriculture.

To tackle these issues and problems, a new wave of 'agritech' startups has emerged in the sector. These startups have surfaced with the primary intent of addressing and resolving the prevalent issues and challenges faced in the sector. The National Academy of Agricultural Sciences' 2022 report outlines that 60% of the agricultural startups are concentrated solely in Tier I & II cities in a few states. States such as Karnataka and Maharashtra have accounted for half of the total agritech startups in the past five years with Bengaluru, Mumbai and Delhi NCR as established startup ecosystem hubs (National Academy of Agricultural Sciences, 2022).

As observed, Maharashtra is at the forefront of this transformation. With the proactive measures taken by the Maharashtra government to foster an environment conducive to innovation

and entrepreneurship in the agricultural domain, the state has observed a vibrant ecosystem of agri startups. For instance, in 2018, the Maharashtra government unveiled the Maharashtra State Innovative Startup Policy, a comprehensive framework designed to transform the state's agricultural landscape by nurturing an innovation-driven entrepreneurial ecosystem. The policy offers a variety of benefits to aspiring agricultural startups, including tax and GST holidays, compensation and reimbursements for stamp duty and registration fees, and financial assistance for patent filing (Maharashtra State Innovative Startup Policy, 2018).

An important agritech startup in the state is **AgroStar**, a Pune-based startup founded in 2013. AgroStar's primary service is its user-friendly mobile app, serving as a one-stop solution for farmers. Through the app, farmers can

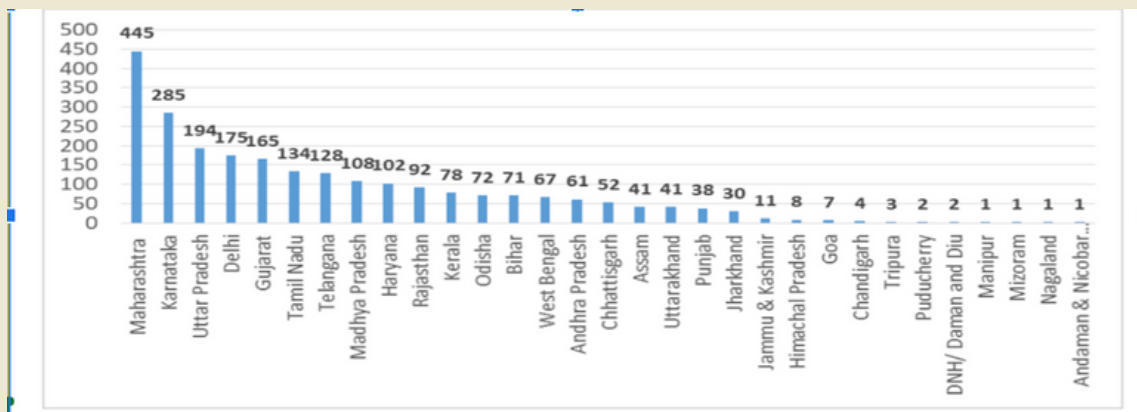


Figure 1: State-wise number of DPIIT-recognised agri-startups in India (as of November 2021)

procure quality agricultural inputs such as seeds, fertilisers, and pesticides directly. The platform offers advice on crop management, pest control, and best agricultural practices based on location and crop type. Moreover, AgroStar integrates data-driven insights, utilising AI and analytics to provide weather forecasts, market trends, and farming recommendations. The startup presently works in the states of Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, and Uttar Pradesh and has connected with more than 7.5 Mn farmers on its digital platform.

Another prominent startup is **GramHeet**, a social enterprise that offers a holistic package of services to farmers with a mission to make agriculture a profitable sector. The enterprise predominantly works with smallholder farmers in the Yavatmal district of Maharashtra. Central to GramHeet's remarkable success is its all-encompassing approach, meticulously addressing the multifaceted challenges that hinder smallholder farmers. The enterprise has strategically established a network of decentralised storage facilities within villages, a crucial step to combat post-harvest losses and amplify farmers' bargaining power. These storage facilities within the GramHeet Mandi offer farmers affordable options to store their produce, ensuring minimal losses

and providing a convenient marketplace. Understanding the weight of debt-burdening farmers, GramHeet has forged partnerships with financial institutions, facilitating access to loans and financial services. This financial empowerment enables farmers to invest in superior agricultural inputs, adopt sustainable practices, and scale their operations. Moreover, it extends instant credit against stored produce at the GramHeet Mandi (VTC), offering timely assistance during cash crunches and capitalising on seasonal price fluctuations. The impact of GramHeet's interventions is striking. Farmers working with GramHeet have witnessed a remarkable 40% increase in their incomes (GramHeet).

Another significant startup in this sector also includes Pune-based agritech company **Ecozen Solutions**. Ecozen develops climate-efficient, deep-tech solutions like motor controls, the Internet of Things (IoT, a network for interconnected devices facilitating communication and data transfers between themselves and the cloud), and energy storage. Over the years, the company has also extended its presence in the irrigation industry (Ecotron) and cold chain segment (Ecofrost). With these services, the company has improved the income of over 1 lakh farmers and has enabled the generation of over 1 billion kWh of clean energy (Tripathi, 2022).

KhetiGaadi is another important

agricultural startup based out of Pune. Founded in 2016 as a marketplace that helped farmers buy, sell, and rent tractors, KhetiGaadi has today evolved into an e-commerce platform of sorts for farmers. It sells farming equipment, seeds, nourishing fertilisers, and a miscellany of other farming-related products, as well as offers fintech services in tractor loans, crop insurance, etc., helping farmers access an array of services on a single platform (Saxena, 2022). The platform also provides farmers with access to expert advice and information on crop cultivation, pest control, and other agricultural practices. In 2022, KhetiGaadi launched **KhetiGuru** which acts as a free agronomy advisory platform for farmers.

Apart from the above-mentioned startups originating from Maharashtra, two of the largest agritech companies in India are Fasal and DeHaat. **DeHaat**, a Bihar-based startup, stands out as one of the most valued agritech companies in India, demonstrating its impact all over the nation. This innovative startup operates a robust digital platform designed to deliver a comprehensive array of agricultural services directly to farmers, spanning from agricultural inputs like seeds, fertilisers, and pesticides to advisory support, market connections, and financial services. With the help of technology, DeHaat links farmers

with a network of suppliers, seasoned experts, and potential buyers. This strategic integration aims not only to boost agricultural productivity but also to elevate the income levels and overall prosperity of rural farmers across India.

DeHaat's revenue soared 55% to ₹1997 crores in FY23, driven by agri-product sales. Serving 20 lakh+ farmers across 11 states, it connects them with 2,000+ agri-businesses, streamlining access to services and products, and fostering efficient transactions within the ecosystem.

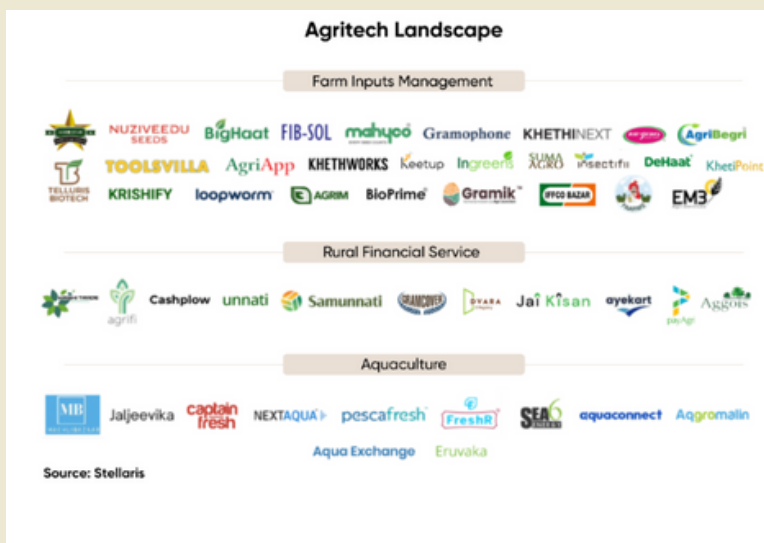
Another startup significant to the sector is **Fasal**, an AI-powered precision farming platform that helps farmers increase their yield as well as the quality of the yield. The platform uses IoT devices to collect real-time data on farm conditions, and then with the help of AI, further analysis is performed on this data to provide farmers with actionable recommendations. With an aim to prevent losses stemming from the speculative nature of agricultural practices, Fasal was established.

The startup has successfully built an IoT-led device with remote sensors that can be placed at farms to record crop, soil, and weather conditions. The device collects real-time data, which is then processed using AI and ML. This information is further utilised to generate farm-specific, crop-specific, and crop-stage-specific intelligence,

delivered to farmers in vernacular languages through the Fasal app. Farmers can use these insights and predictions to plan their irrigation management, pest and disease management, fertiliser, fungicide and pesticide application or make any other adjustments needed to create optimal growth conditions for crops (Mitter, 2021). The algorithms can predict seasonal pathogens in crops almost a week in advance, thus allowing farmers to take timely preventive measures. As Mitter reports, the startup claims to have saved three billion liters of freshwater to date. Farmers using the Fasal app have also witnessed a significant spike in their profits and ‘huge water savings’ even in the driest regions of Maharashtra.

Similar to many precision agriculture startups in India, Fasal has

experienced substantial growth over the past couple of years within the expansive agritech sector. Its trajectory has been remarkable, transitioning from overseeing fewer than 50 farms in 2018 to managing 500 farms and 5,000 acres of land by 2019. They have also reported a 50% savings in irrigation water, up to a 60% reduction in pesticide cost and an increase in yield by 40% (Chaitanya). Presently, it is about to conclude FY21 with a significant projection, extending its reach to 1,000 farms and overseeing 20,000 acres of land. Fasal operates with farmers across multiple states including Maharashtra, Madhya Pradesh, Chhattisgarh, Karnataka, Andhra Pradesh, and Telangana. Eyeing a target of 100,000 acres of land coverage and crop management in 2021, the startup aims to achieve an annual revenue run rate of USD 1 million.



Agritech Landscape

The aforementioned companies mostly deal with agricultural automation and input management. Whereas, there are other startups

present that deal with rural financial services, farm-to-consumer brands, market linkages, etc.



Results and Discussion

A research and understanding of these startups establish that the private sector can work towards solving the agricultural issues while also sustaining revenue for themselves as well as the farmers. Looking closely, the agritech innovations can help farmers in some key areas, including identification of authentic raw materials, weather uncertainties and market uncertainties. We observe that most of the startups in Maharashtra are working on innovations related to enhancing farmers' knowledge of weather conditions which were previously completely unpredictable for them. They also provide fertilisers, pesticides, etc., to the farmers directly through their app which makes the farmers' jobs convenient. Usually, when farmers obtain fertilisers or pesticides directly from local vendors, they often encounter deception in the form of adulteration and low quality of the products. Also, farmers usually have limited knowledge about the quantity and the type of fertiliser to be used. As we have already seen, most startups like DeHaat and AgroStar are solving these problems. Small farmers find it difficult to meet large expenses such as investing in a tractor might not accrue the same amount of benefits as it does to a big farmer. Therefore, the innovative solution of renting tractors prove to be largely effective

for the farmers.

Another service provided is that of storage and distribution. Providing cold storage facilities and warehousing facilities to the farmers is extremely crucial to the government in boosting the sector, there is a severe shortage of these facilities. However, we see startups like GramHeet providing such services among many others. Furthermore, ITC's e-Choupal programme is perhaps one of the most successful programmes which has not only helped farmers improve profitability but has also educated the farmers and motivated them to innovate and produce better yields. Apart from the startup ecosystem, contract farming is another practice which showcases how the private sector can revolutionise the agricultural sector. Contract farming is an agricultural agreement carried out between the buyer and the farmer. Companies like ITC, Nestle, and Pepsi Foods are some of the largest players in contract farming. In the APMC Act of 2003, the government highlighted the importance of contract farming and mentioned certain laws that would protect the farmers' security and rights when they decide to sign a contract with these big companies. In 2020, Prime Minister Narendra Modi himself assured the farmers that under every circumstance, they would remain the legal owners of their land and no private firm would be able to grab their land as per the new farm laws, 2020.

These contracts clubbed along with government schemes like the PM-KISAN scheme and Pradhan Mantri Fasal Bima Yojana help farmers deal with the problem of market uncertainties and enable them to hedge their produce against market fluctuations and deal with the issue of credit for farm inputs.

In their interaction with the PM, several farmers shared their success stories and also highlighted the benefits of recently enacted agri-laws. They also shared their good experience of working with private players under contract farming agreements. Taking advantage of Pradhan Mantri Fasal Bima Yojana (PMFBY), Maharashtra-based farmer Ganesh Rajan Bhosle from Latur district said he paid a premium of Rs 2,580 and took crop insurance in 2019. He received a claim of Rs 54,314 for damage to his soybean crop due to excess rains last year. Another farmer from Odisha (Naupada district) Naveen Thakur said he has received Rs 10,000 under the PM-KISAN scheme and also got the benefit of a crop loan at a lower interest of 4 per cent rate through a Kisan Credit Card (The Economic Times, 2020).

However, it is important to highlight that even though the private sector has a role to play, either in the form of innovative startups or contract farming, there are still some

traditional agricultural issues that the government has to take care of to boost the sector. These issues include the provision of irrigational facilities and educating the farmers to improve the overall productivity of the land. Offering these two facilities has little to no profitability for the startups, and there is still no clear way in which the private sector can provide these two facilities to the farmers. Apart from these, transportation and warehousing facilities are also essential. **Ninjacart** is an example of a leading company in India based in Bengaluru providing an extensive service of transporting the crops from the farmers to the marketplace directly while offering a fair price to the farmers and fresh agricultural products in the markets. However, it is important for the government to improve existing storage and warehousing facilities for agricultural crops and enable widespread availability of cold storage for fruits, vegetables, fish, etc.

Apart from irrigation, the fragmented land holdings of small farmers also pose an obstacle for them. Small farmers will find it difficult and unworthy to invest in technological inputs as it increases their costs but may not raise their income by the same proportion. Therefore they continue their traditional practices of farming which generates very little profit for them. Investing in innovation and technological advancements is not feasible for farmers with small land

holdings, making land consolidation important as it poses a major obstacle to the technological development of farming.

Another important area that requires government attention is the protection of farmers against the losses incurred due to natural calamities. According to the Economic Survey of Maharashtra, from November 2021 to May 2022 about 2.71 lakh ha area was affected in the state due to unseasonal rain, hailstorms & windstorms and compensation of INR 130.88 crore was sanctioned for about 1.33 lakh ha of affected area. For crop and other losses in the affected areas due to heavy rainfall/flood/continuous rains & snail attacks during June to October 2022, the assistance of INR 7,133.19 crore has been sanctioned from August 2022 to February 2023. These figures indicate that the agricultural sector of Maharashtra needs support and protection from natural calamities and climatic conditions.

Limitations and Scope

The broad sector of agriculture and allied activities consists of different industries like dairy, poultry farming, fisheries, horticulture, aquaculture, etc. However, the scope of this paper is limited to the use of automation in farming which plays a significant role in the cultivation of staple food crops in Maharashtra such as rice, wheat

and sugarcane. Different agricultural products have various kinds of supply chains, harvesting systems and markets, therefore, there are unique problems which are associated with each industry within the agricultural sector. However, this paper encompasses the entire agriculture sector as a whole and thus it fails to focus on specific problems related to individual industries.

All kinds of startups mentioned in this paper deal with agriculture, automation and input products, whereas, there are other startups also working in the sector which deal in the supply chain, market linkages, financial services, etc. There is minimal elaboration on all startups associated with the sector in this paper. Along with that the data available on the discussed startups is limited, therefore complete case studies of the startups are out of the scope of this paper. The paper has generalised the entire agriculture sector in the context of Maharashtra without focusing on district-specific or industry-specific studies.

Conclusion

A study conducted by Ernst & Young (2020) suggests that the Indian agritech market is expected to reach a potential of USD 24 billion by 2025, of which only one has been captured so far. As of 10th April 2023, there are around 374 DPIIT-recognised startups in the agriculture industry spread across 490 districts, providing

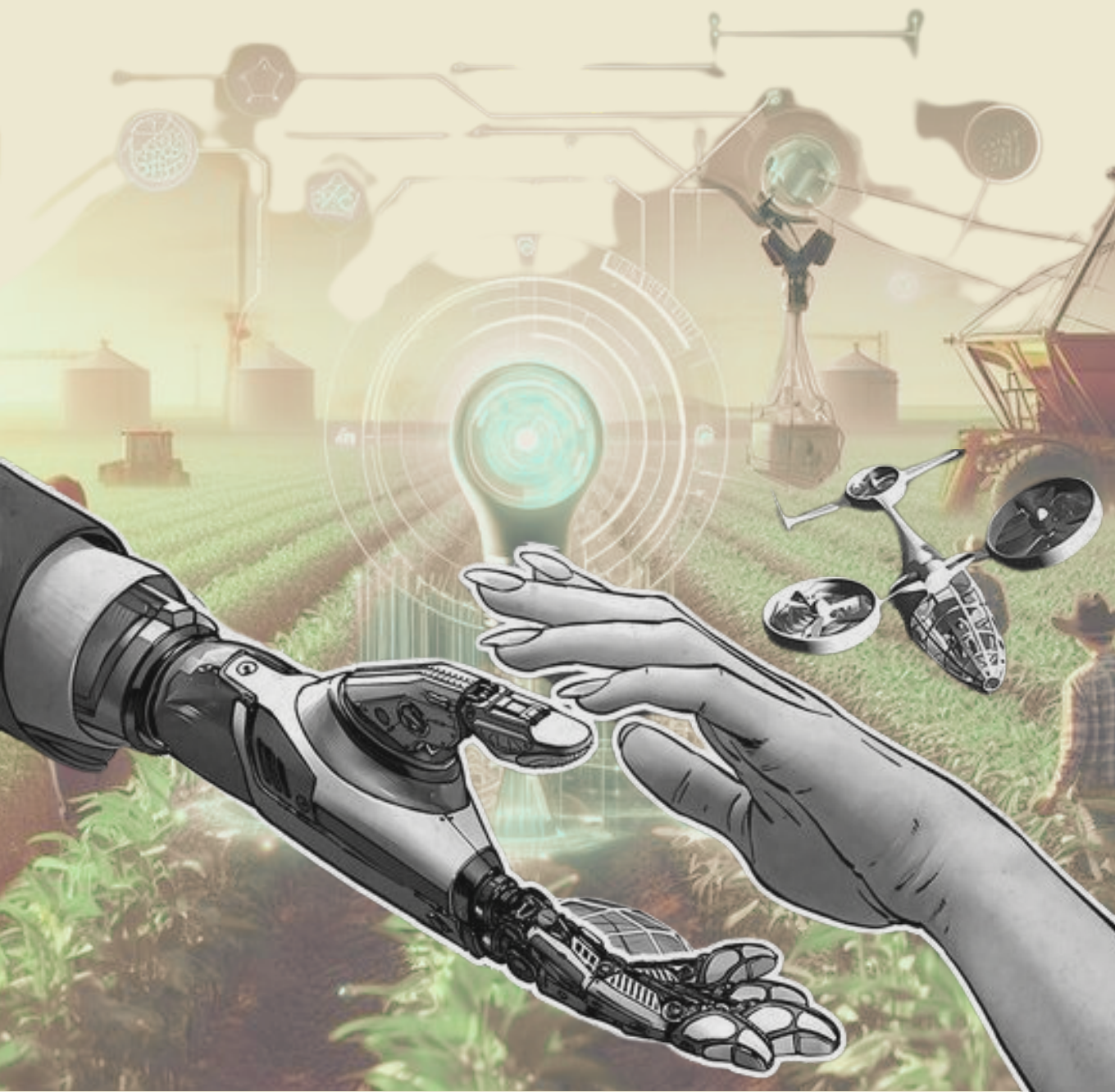
employment to around 38,000 people. Additionally, there are about 2207 DPIIT-recognised startups in the agritech industry spread across 360 districts, providing employment to more than 18,000 people. In this sector, Maharashtra boasts the highest number of recognised startups, totalling 459.

The above data suggests that Maharashtra has significantly privatised the sector which has made agriculture profitable and revenue-generating. The government of Maharashtra has taken various initiatives on the same lines, considering the dire situation of farmers in Maharashtra the government has announced various additional schemes like Namo Shetkari Mahasamman Nidhi (farmers get INR 12,000 per month), Pradhan Mantri Crop Insurance scheme 2016 (providing financial support and insurance coverage to the farmers), Mahatma Jyotirao Phule Shetkari Karj Mukti Yojana (debt cancellation programme), etc. The Finance Minister of India allocated INR 600 million for digital agriculture. However, the government needs to realise the potential of the private sector and reduce the increasing dependence of the farmers on government aid. This means that even after growth in the agritech sector, small farmers are perpetually disadvantaged. The government of Maharashtra must

focus on the core problems of agriculture like irrigation, fragmented land, rising cost of labour, electricity, etc. These issues pose fundamental problems which directly affect innovation and advancement of the sector which makes it extremely difficult to make agriculture a profit-making venture. While providing aid is important for the farmers, dealing with these issues is paramount for the sustainability of the sector.

Furthermore, the agritech sector needs to receive a fillip by the government as it solves the underlying problems of the overall agriculture sector. The rapid privatisation of other inputs and services used in the agricultural sector can revolutionise agriculture in the state. Maharashtra hosts the highest number of agritech startups and investments, it is therefore incumbent upon the government to recognise them and provide the necessary incentives required to operate in the areas where they are needed the most. The government of Maharashtra has not launched a state-specific scheme which focuses on its robust agritech landscape. Even though the startups are getting investments and flexibility, there is a need for the government to collaborate with these companies to reduce duplication of services. It will enable the government to focus on the fundamental problems of agriculture and collaborate with the private sector for advancement. The Agriculture accelerator fund launched recently

provides funding of INR 5 lakhs at the pre-seeding/ideation stage and a fund of INR 25 lakhs as seed capital to all agritech startups. However, the government of Maharashtra can work collectively with agritech companies to promote agricultural growth and advancement in the state.



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Articles



01 Bingo for a Better Planet

Shahana Akhtar, Aaliya Bukhary & Chahat Mehrotra

In the context of India's current socio-political landscape, water conservation is an issue of utmost importance. Using nudge theory to encourage water conservation in rural schools across India can be an effective way of tackling this problem.

The way choices are presented to us can influence the decisions we make. When options are framed and designed in a way that affects decision-making, it is the working of choice architecture. This concept was coined by Thaler & Sunstein in their 2008 book *Nudge: Improving decisions about health, wealth, and happiness*. In the book, they popularised the concept of nudge. A nudge is any low-cost, subtle intervention that pushes decision-makers towards making better personal and social choices.

In the face of certain behavioural barriers, a nudge can help break patterns of bad decision-making by changing the framework in which decisions are made instead of using invasive methods like bans. This concept is best explained by the



following example: fruits placed at eye level in shops nudge people into making healthier purchases and thus making good decisions about their health. This makes fruits more likely to be chosen over healthier options such as chocolates, as the preferred choice (here, the fruits) is made easily available and thus more attractive (Nudges: The Design of Your Choice, 2018). In this manner, the way of presenting choices is moulded to anticipate the best outcome for the individual as well as society at large.

Nudges can be used not only to promote personally beneficial behaviours but also to cultivate a more economically aware social consciousness that often results in economic and social development. Research done comparing attitudes towards nudge-based interventions in developed (Australia, USA, France) and developing (India, Mexico, Turkey) countries found that developing countries were more amenable to government interventions, perhaps due to cultural attitudes that value respecting institutions more than Western countries (Branson et al., 2012). In developing countries, the non-economic incentives employed by nudges can offer a cost-effective alternative to resource-intensive mandates or technological infrastructure often employed by the government. Nudges catalyse structural change through altering consumer behaviour, without

Nudges catalyse structural change through altering consumer behaviour, without sacrificing the freedom of choice integral to the foundation of democratic countries across the world.

sacrificing the freedom of choice integral to the foundation of democratic countries across the world.

Nudge Theory in Action

Nudge theory has been extensively used in policies. In India specifically, the use of nudges has been extremely effective, with its implementation in initiatives such as the Swachh Bharat



Mission, causing household access to toilets to increase to nearly 100% in all states (Economic Survey 2019-20, 2020). The SBM intended to reform open defecation behaviour through a dual-pronged nudging strategy. On one front, mass media played a pivotal role, employing nudge interventions such as the Darwaza Band TV and radio campaign led by Amitabh Bachchan. Simultaneously, the *swachhagraha* grassroots approach was implemented and made use of 580,000 ground-level motivators (*swachhagrahis*) who engaged in interpersonal communication and utilised techniques such as disgust and negative framing to bring about the desired behavioural changes (Iyer).



The COVID-19 pandemic has profoundly shaped the modern world, and for India, immunising its vast population of 1.42 billion people posed a significant challenge. The government made use of a nudge tool of text-based reminders, identified through Randomised Controlled Trials, which played a crucial role, with the initial reminder proving more effective by providing participants with a sense of control over their vaccination dose (Dai et al., 2021). These reminders were complemented by behaviour-informed messaging and information-provision interventions to motivate and dispel vaccine reluctance.

The Need for Water Conservation

Water scarcity is a phenomenon currently aggravated by rapid economic growth and depleting environmental resources.

WATER CONSERVATION BINGO

	washed vegetables in a bowl	told my parents 3 benefits of conserving water	used a refillable water bottle
used a broom instead of a hose to clean the area outside the house	re-used kitchen water to water plants	took a 5 minute bath everyday for a week	told my teacher 3 ways of conserving water
gave my laundry bi-weekly	told my friends 3 ways to conserve water	maintained a diary of my water consumption for 2 weeks	put up posters in my class talking about the risks of water wastage
checked for leakage(s) and informed an adult	turned off the tap while brushing	participated in the river cleanup school activity	

every drop counts! 

According to the Water Resources Sector Report, India's national industrial water usage is projected to triple by 2025, even as water supply continues to be one of the main constraints in industrial, agricultural, and domestic fields. In rural India, the situation is dire. Over 600 million people, many in rural areas, grapple with acute water stress (Composite Water Resources Management: Performance of States, 2018). According to Terrin, this has been exacerbated by the fact that almost 1/5th of rural habitations in India do not have access to the minimum entitled quantity of water i.e. ~40 l.p.d.

Individual water conservation is integral to the cause, as it can reduce personal costs, protect wildlife, and minimise the need for expensive government-funded water treatment projects.

Compounded by a focus on washing hands and other hygienic practices post-Covid-19, water usage in India has increased dramatically in the past

two years (Bera et. al 2022). Government programs such as the Atal Bhujal Yojana have attempted to combat this, with the most recent Jal Shakti Abhiyan program intending to save and conserve rainwater through its five focused interventions: Rainwater harvesting, Water conservation, Geo-tagging, making an inventory of all water bodies, and preparation of scientific plans for water conservation.

However, most programs focus on systemic interventions while neglecting personal behavioural alteration and cultivating social attitudes towards water conservation, something our nudge intends to address. Individual water conservation is integral to the cause, as it can reduce personal costs, protect wildlife, and minimise the need for expensive government-funded water treatment projects.

Behavioural Barriers

The behavioural barriers kept in mind while formulating the nudge are derived from a 2022 CSBC report on User-led Water Behaviours under the Jal Jeevan Mission in Gujarat. Some significant behaviours include a poor judgement of water quantity used and lack of salience of water wastage both in general and specifically through leakages, which can manifest through perceptions of a flowing tap seen as a

leakage, while a dripping tap is not. Other notable barriers centre around lack of education and visualisation, with a high rate of inability in individuals to link conserving water to actualising real change in the future, as well as a lack of individual and community solidarity and knowledge when it comes to water-conserving practices. Our nudge intends to address all of these to a certain extent but focuses specifically on self-efficacy and lack of salience.

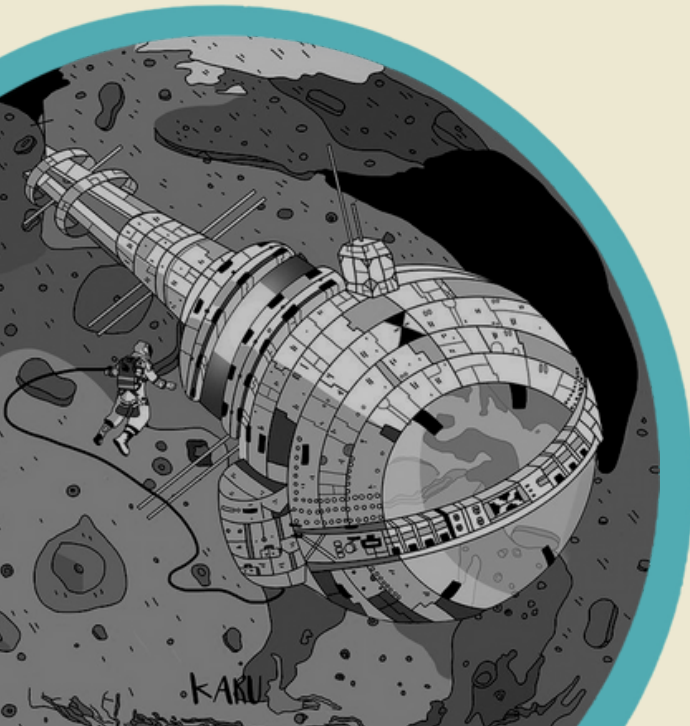
Our Nudge

Our strategy begins with a water presentation about water conservation delivered to children in Grades 5, 6 and 7 in Schools A and B in Districts 1 and 2. To enhance the effectiveness of our approach, we divide the participants into two groups: a control

The experimental group receives a water conservation bingo card, turning the learning process into a competitive and fun activity. The bingo card, carefully tailored to the children's abilities and daily lives, features 14 simple activities spread over two weeks. These activities serve as a hands-on approach to promote conservation and habit formation among the students.

group (School A) and an experimental group (School B).

The experimental group receives a water conservation bingo card, turning the learning process into a competitive and fun activity. The bingo card, carefully tailored to the children's abilities and daily lives, features 14 simple activities spread over two weeks. These activities serve as a hands-on approach to promote conservation and habit formation among the students. To assess the effectiveness of our nudge, we.




introduce a voluntary water cleanup activity.

Our assessment involves two rounds. The first round assesses water consumption before the presentation of the water conservation presentation, and the second round occurs after the completion of the two-week bingo card activity. This structured evaluation allows us to measure the impact of our nudge on the students' water-saving behaviours. In addition to this, we plan to conduct a quiz related to the children's water consumption/conservation habits after 21 days of the bingo's completion. Since this is the standard time it takes for one to change habits, the quiz would help assess whether the habits formed, if any, have been retained in the long term.

To motivate participation, children completing the bingo earn a special honorary title and a badge. This recognition fosters a sense of responsibility and encourages them to advocate water conservation not only among their peers but also within their families. By creating this positive reinforcement, we aim to ensure that the instilled habits persist beyond the initial two weeks.

Implementing this nudge would require careful consideration of regional aspects. Adapting to diverse languages and dialects is crucial for effective communication with children. Moreover, we must be mindful of region-specific challenges; for instance, in dry areas, rainwater conservation efforts may face limitations, while in wet regions, the abundance of water might reduce the incentive for conservation.



Not only could they influence their friends, family and community, but also potentially impact the habit formation of the next generation. Thus, they could function as active change-makers.

Rationale

It is beneficial to direct interventions towards children for various reasons. Children in our target age group have malleable habits, unlike adults. If these children were to form habits that aid water conservation, they could have a generational impact. Not only could they influence their friends, family and community, but also potentially impact the habit formation of the next generation. Thus, they could function as active change-makers.

Moreover, the bingo has been designed keeping in mind the specific behavioural barriers preventing water conservation in rural areas. Since people lack judgement of the quantity of water they use, asking children to keep a diary where they log their water consumption levels could help them be more mindful of their consumption levels. In the same way, activities related to benefit and risk assessment, such as telling their

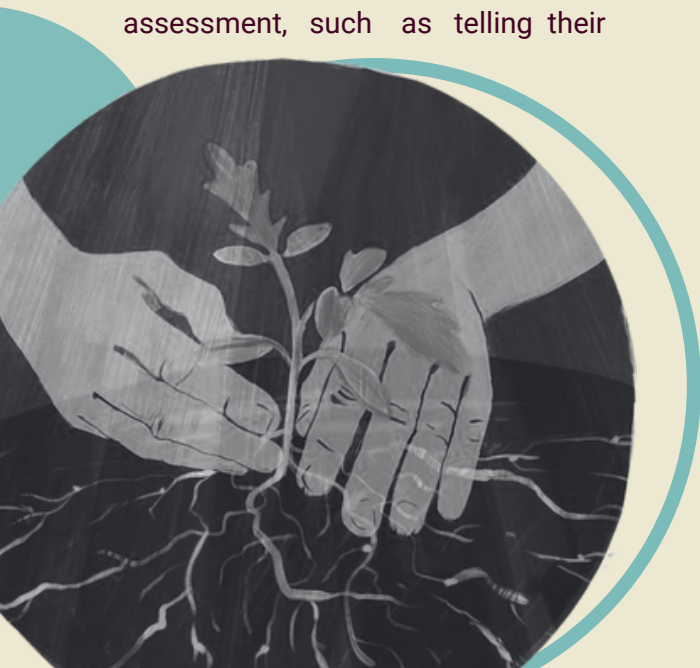
parents three benefits of saving water, are aimed at improving self-efficacy while also helping them gain knowledge about actions that could prevent water wastage.

Several activities aim to visualise water as a public good to improve responsibility for community water wastage. This is important as studies conducted in Japan, Cape Town and India suggest that “a nudge that visualized water as a public good was effective in saving water” (Otaki et al., 2022) and “the most effective nudges were those that ... appealed to households to act in the public interest (public good)” (Brick et al., 2023). In line with this, we have included activities that engage the classroom and peers outside school.

Limitations

Though our nudge addresses children enrolled in schools, a possible limitation is the enrollment and attendance rate in rural areas. While enrollment rates have ostensibly increased in recent years, attendance in rural India remains a problem, which could potentially impact the number of households the nudge reaches, and thus the overall impact on water conservation.

Furthermore, due to the self-regulated nature of the program, there is a lack of reliability in the data; there is no way of confirming if the children performed the tasks they ticked off in the bingo. This limitation



has been combatted to a certain extent with the inclusion of the supervised beach-clean-up program and the diary task, which would serve as concrete evidence of behavioural changes towards promoting water conservation.

The nudge itself is a two-week program, which may not result in long-term practices. However, we intend to remedy this by conducting the second half of our assessment (the timed test), 21 days after the bingo program ends. This would ensure a more substantial behavioural change, by

giving the participants enough time to see if the behaviours have translated into a habit.

Recognising the active role of rural school children as change-makers and considering their developmental stage for habit formation, our focus is on implementing an innovative and engaging nudge. It offers a cost-effective alternative to existing water conservation programs, while effectively altering generational attitudes and behaviours towards environmental conservation.



02 The Entertainment Sector: A Source of Global Economic Expansion

Anushka Bharadwaj & Mansi Jha

Entertainment transcends mere leisure, shaping economies and bridging cultures. This article discovers the economic prowess of films, music, and streaming, their impact on global dynamics, and how they exemplify a new era of cultural diplomacy.

Entertainment is a major source of leisure in today's fast-paced world. While at a micro-level, it refreshes, strengthens, and enhances the productivity of an individual, at a macro level, it acts as one of the catalysts for global economic integration and triggers a significant expansion in economic opportunities. The entertainment industry in India has experienced substantial growth since the 2000s, driven by favourable demographics, rising affluence, and technological advancements. This expansion has not only resulted in increased revenues but has also created significant monetisation opportunities. Films and music, attract a global audience, and generate heightened demand for goods, services, and labour, fostering economic growth. This ripple effect extends to various sectors such as tourism, hospitality, food, transportation, and healthcare



creating a web of benefiting economic services.

The entertainment industry, which comprises film, television, music, theatres, etc., majorly facilitates GDP growth through ticket sales, TRPs (Television Rating Points), and streaming services. According to the latest EY report, India's Media and Entertainment Industry is projected to reach INR 2.34 trillion and is expected to grow at a CAGR of 10% to hit INR 2.83 trillion by 2025. This growth is attributed to favourable demographics, increased literacy and income levels, along with government support, technological advancements, and improved accessibility for viewership anytime, anywhere.

Additionally, the advent of Over-The-Top (OTT) platforms has transformed the entertainment landscape, providing better media accessibility. Netflix boasts over 208 million subscribers globally, allowing viewers to watch content at their convenience through the on-demand nature of its services. Even when the global economy experienced a period of stagnation during the Covid-19 pandemic, the internet traffic was estimated to be highest in 2020-21 of which the major proportion was occupied by online streaming services like Netflix and Amazon Prime. Personalised recommendations tailored to

This growth is attributed to favourable demographics, increased literacy and income levels, along with government support, technological advancements, and improved accessibility for viewership anytime, anywhere.

individual preferences have become the norm, marking a departure from traditional cable and satellite TV to these streaming platforms.

Several Indian films have been shot abroad and vice versa. For example, films like 'Chak de India', and 'Salaam Namaste' were shot in Victoria, Australia.





Consequently, there was an increase in Indian tourists in Victoria, Australia by 18% (Balli, 2023). Similarly, the American films, 'Mission Impossible: Ghost Protocol', 'The Dark Knight Rises', and Oscar-winning film, 'Slumdog Millionaire' have been shot in Indian cities like Mumbai, Chennai, Jodhpur and Bangalore which has made them a popular destination for film tourism from other countries. Also, Korean dramas and Korean Pop Culture have gained immense popularity in countries like Bahrain, UAE, Qatar, India, China, Philippines, etc. As a result, 160,000 students worldwide have started learning Korean and enrolling in Korean universities.

According to research conducted by the Hyundai Research Institute, the K-pop industry contributed 1.7% of South Korea's GDP in 2018, up from 0.3% in 2009. The entertainment

industry acts like a locomotive, which not only pulls one economy but multiple economies into an expansion. During the Cannes International Film Festival (2002), Former External Affairs Minister, Sushma Swaraj, who was back then the Information and Broadcasting Minister, described the entertainment sector as India's goldmine and thus emphasised India's prioritisation towards film exports (Joshi, 2002). Following the same pathway, over the past few decades, the trade of entertainment content across the world has developed into a sizable economic force and has promoted cultural diffusion, mainly including film tourism.

Following a similar trend the music industry was traditionally dominated by numerous record labels, controlling both music production and consumption but later due to the advent of several music streaming platforms like Spotify, Prime Music, Apple Music, etc., it witnessed a substantial boost.

Following a similar trend the music industry was traditionally dominated by numerous record labels, controlling both music production and consumption but later due to the advent of several music streaming platforms like Spotify, Prime Music, Apple Music, etc., it witnessed a

substantial boost. A major shift occurred post 2010, with Spotify witnessing a remarkable surge in users from 15 to 100 million worldwide. These platforms operate on a contemporary business model offering two main modalities: a free account with monthly costs waived, accompanied by ads and certain restrictions (freemium model), or a premium model where users pay a monthly fee for unrestricted access. The latter has significantly contributed to a substantial increase in industry profits. This transformation is evident in revenue trends, with streaming revenues hitting a record high of 17.5 billion U.S. dollars worldwide in 2022 signifying that streaming platforms are fundamentally altering the dynamics of the music industry.

Ensuring improved royalties is a key factor in providing creators with a stable income, fostering motivation, and revitalising India's musical creativity. India stands out as one of the few countries where musical creations gain global appreciation and monetisation. To further expand this, the music publishing industry should invest in identifying talent, developing training and infrastructure, and establishing a secure framework for gig workers, both during and after their active periods, thus contributing significantly to the growth of the sector.

Furthermore, film screenings, award shows, live concerts, film festivals, etc., serve as the foundation for economic activities such as hospitality, tourism, transportation, catering, and many more through the multiplier effect. For instance, organising an award show requires sponsors, event managers, and organisers. The funds invested by the organisers translate into the income of technicians, crew members, stage performers, hosts, etc., who would be hired for the aesthetics of the show.

Moreover, organising the show in a different city or state would boost the tourism sector and would correspondingly generate the demand for transportation and accommodation. As exemplified by the recent Taylor Swift blockbuster The Eras Tour which was not only breaking records as a



Following David Ricardo's Theory of Comparative Advantage, the trade of entertainment content provides opportunities for countries to specialise in the production of entertainment content of their comparative advantage.

potential highest-grossing tour but has also reshaped the tourism industry. Hotels in tour cities experienced unprecedented demand, breaking records even at higher accommodation rates. The impact is remarkable, with fans collectively spending a staggering USD 5 billion across the United States, surpassing the entire GDP of some small countries. The tour's influence extends beyond music, becoming a significant economic driver for cities visited.

Factors such as digitalisation, globalisation, shifts in consumer preferences, and rapid advancement in technology have played a key role in making the entertainment sector a source of global economic expansion. Media companies are witnessing a significant shift in consumer behaviour. Preferences increasingly lean towards personalised, on-demand content. Consumers now expect media that

caters to their tastes and preferences moving away from traditional, scheduled programmes. Consumers increasingly like to access content across multiple devices and platforms, leading to a more integrated media experience.

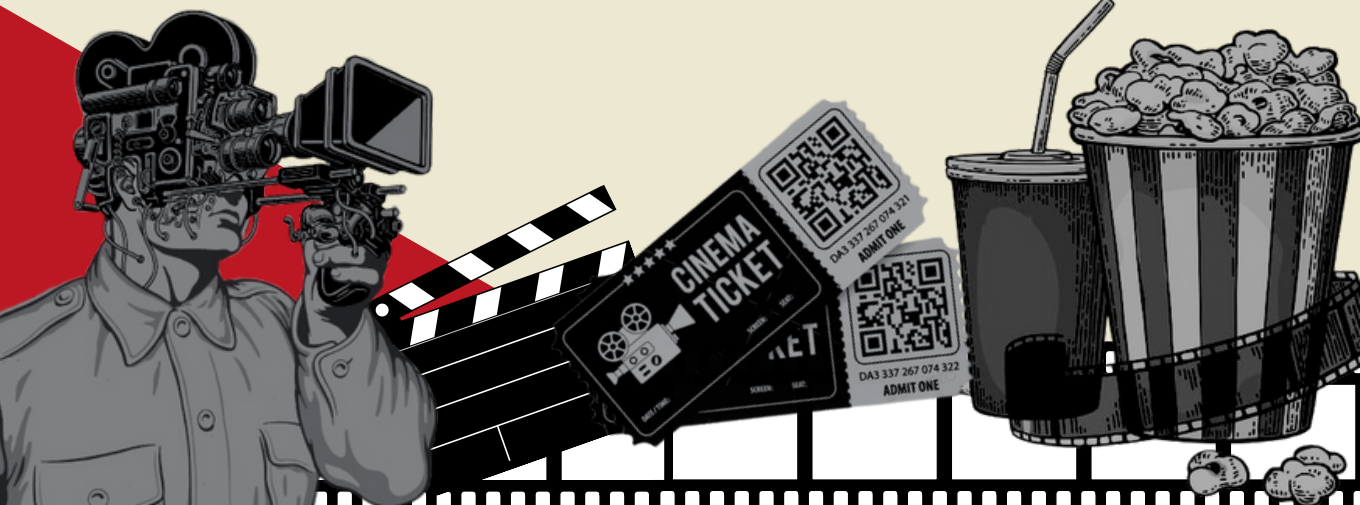
Following David Ricardo's Theory of Comparative Advantage, the trade of entertainment content provides opportunities for countries to specialise in the production of entertainment content of their comparative advantage. This provides the viewers with a greater variety of content thus enhancing their utility levels. For instance, Spotify has taken music streaming to a new level with the 'Jam' feature, offering a more enjoyable and collaborative social listening experience. Starting a Jam session is



now simple – just tap phones, scan a QR code, or share a link to join in the musical fun together.

However, the entertainment sector may sometimes produce unforeseen economic challenges. For example, as per the reports of BBC, Beyoncé's concert, which took place on 10th and 11th May, 2023 was blamed by the Swedish government for fuelling inflation. The announcement of Beyoncé's concert triggered excess demand for accommodation and transportation services, concert tickets (which outstripped supply by approximately 800%) due to which, inflation was recorded at 9.7% in Sweden during Beyoncé's concert. Despite this, the entertainment sector acts as a steering wheel for many economic sectors as well as a safeguard against economic recession. A diverse range of entertainment content from different corners of the globe spreads their unique culture and ideas but at the same time, builds bridges between the countries and economies by holding everyone together through

the universal theme or values carried by them. To foster this further, governments can proactively stimulate growth and employment by earmarking a substantial proportion of their annual budget for the entertainment industry. Tax holidays or subsidies can also be provided to contents, events, or projects that hold a social, cultural, or economic value. Infrastructural development which includes the development of film cities, theatres, auditoriums, and concert halls can be initiated. The government can provide affordable credit to the regional entertainment industries to boost the regional economies. These initiatives can instil dynamism and vibrance in entertainment industries that will take the global economy to the state of Pareto efficiency. The growth of the media and entertainment industry also signifies stability and peace, attracting global tourists and businesses, and fostering international trade relations. Developing countries strategically leverage these events to attract investments, mitigate risks, and project a positive international image.



05 Planned Cities and Prospects for Mumbai

*Mansi Jha &
Bhavya Singh*

Planned cities constitute the most ambitious projects of the government for the economic, industrial, and sustainable development of particular cities. This phenomenon of urban planning is indispensable for a city like Mumbai, which consists of the largest industrial and economic ecosystem but lacks comprehensive planning.

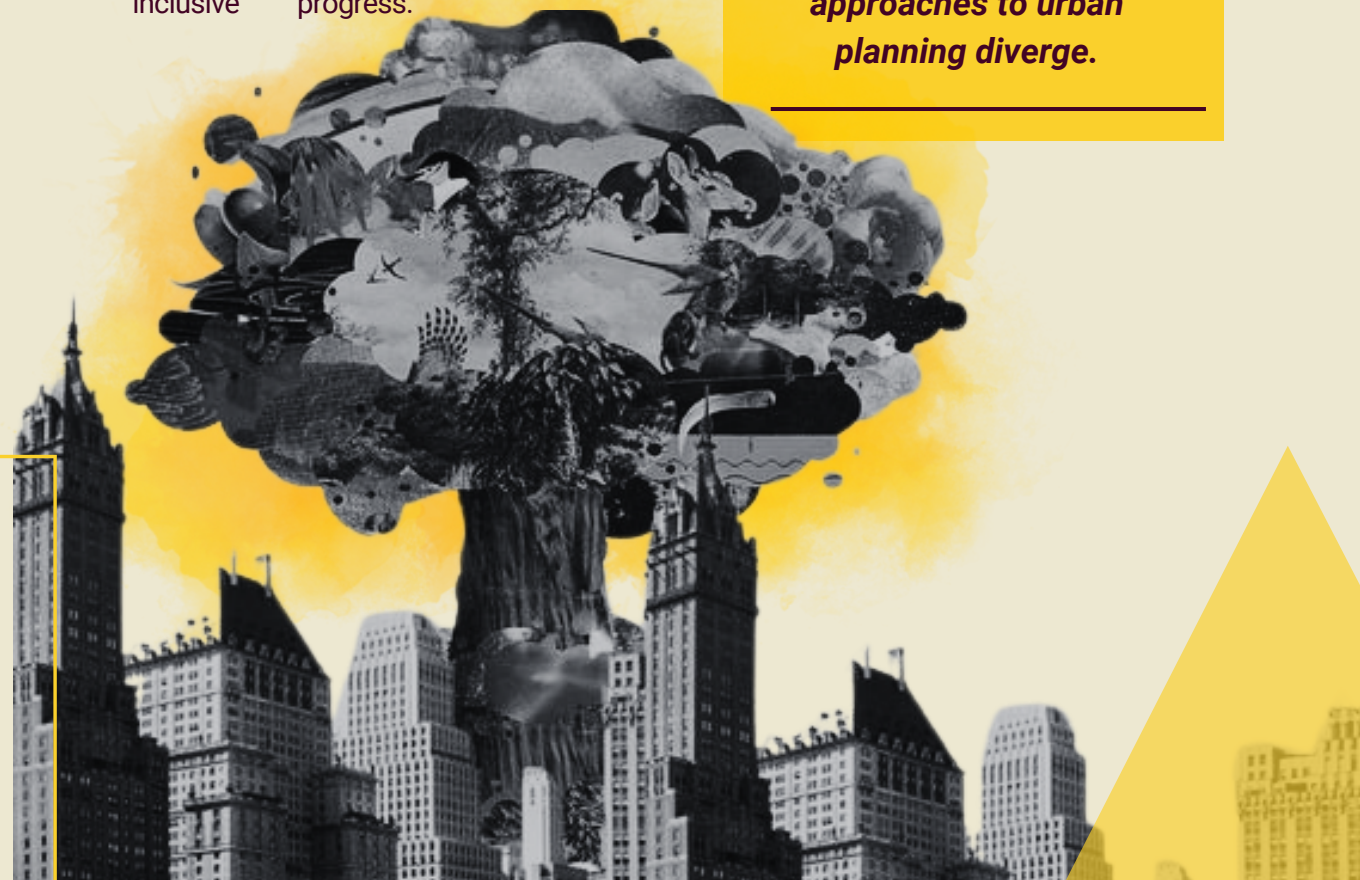
Urban planning is the spearhead of development as it creates a systematic and sustainable environment which fosters economic growth and progress. It is especially required in a city like Mumbai, which consists of 1.01 crore of migrated population (Indian Express, 2024). People migrate to Mumbai for better education, job opportunities, lifestyle and in search of daily wage jobs. Due to a very large population, the city is overburdened with multiple construction projects, consisting of transport, private offices, and residential areas. This has led to multiple problems in the city including air and water pollution, poor disaster and waste management, lack of proper living facilities, and a very high cost of living. Urban planning in Mumbai is crucial to disperse the population, industries, and offices and regulate the city for better disaster management and sustainability.



The planned cities of India have been forging a way for sustainable development and equitable distribution of resources. There are currently 12 planned cities in India, including Chandigarh, Gandhinagar, Navi Mumbai, Chennai, Naya Raipur, Ahmedabad, Bhubaneshwar, Kochi, Gurugram, GIFT City, Jaipur, and Jamshedpur. Each of these have been built to fulfil a unique aim according to their geography and demographics. Through the re-evaluation of planning legislation, emphasis has been consistently placed not only on land use but also on prioritising physical and social infrastructure, environmental considerations, housing initiatives, and effective governance. This comprehensive approach ensures that any city can forge a path towards inclusive progress.

In this article, we plan to explore the urban development challenges faced by Mumbai city and how they can be addressed by drawing inspiration from another planned city in India. Upon examining the structures of all planned cities, we discover that while Mumbai and Ahmedabad share common urbanisation challenges and their approaches to urban planning diverge.

Upon examining the structures of all planned cities, we discover that while Mumbai and Ahmedabad share common urbanisation challenges and their approaches to urban planning diverge.



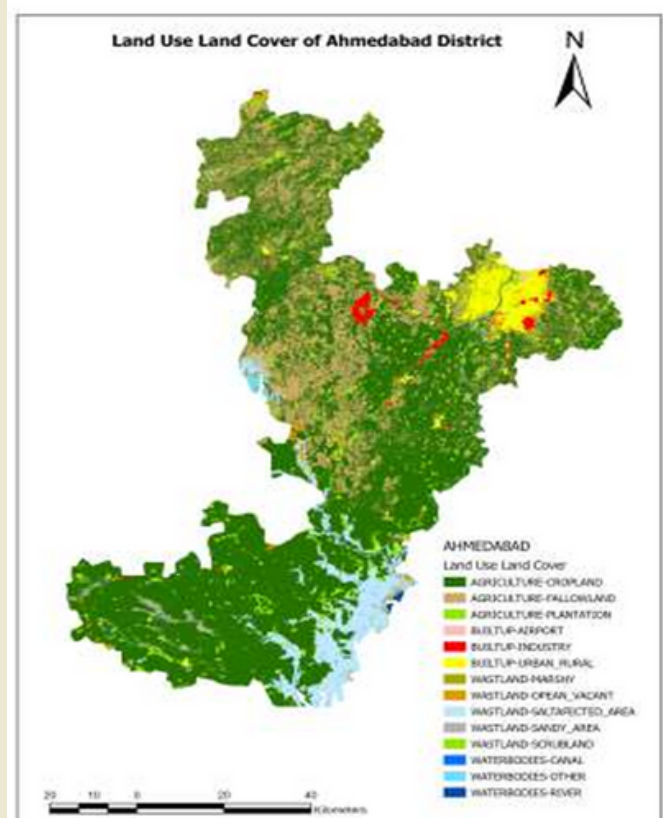
A Case Study of Ahmedabad

Presently, Ahmedabad is the commercial capital of Gujarat, as well as a major industrial and financial city contributing about 14% of the total investments in all stock exchanges in India and 60% of the total productivity of the state (Bhatt, n.d.). Previously marked by dusty roads and congested localities, the city underwent remarkable changes with the implementation of various schemes. The Industries and Mines Department of Gujarat actively promotes Special Economic Zones and Industrial Parks, providing a fillip to the industrial base and therefore contributing to overall economic development. Additionally, Gujarat features 76 industrial clusters at 90 locations, marking a shift from an agricultural landscape to an industrial landscape. This has simultaneously paved the way for industrialisation in Ahmedabad as well, influencing population growth and altering the urban landscape.

Over the years, Ahmedabad has undergone significant urban growth, as evidenced by Land Use Land Change (LULC) maps developed using the Maximum Likelihood classifier, which identifies four principal classes: Built-up, Vegetation, Water body, and 'Others.' LULC is a geographical concept involving the analysis and mapping of changes in land utilisation over a specific period. The Built-up class

includes areas covered by structures and urban development.

The Vegetation class comprises natural or planted green spaces like parks and forests. Water bodies represent features such as rivers and lakes. The remaining land use falls into the 'Others' category, providing a comprehensive understanding of the city's evolving landscape. Between 1990–2019, the total Built-up area expanded by 130%, from 132 sq. km in 1990 to 305 sq. km in 2019. Rapid population growth is the chief contributor towards urban growth as the city added 3.9 Sq. km of additional Built-up area to accommodate every 100,000 new residents (Chaturvedi et al., 2022).



The organisations responsible for urban planning and development in the district are the Ahmedabad Municipal Corporation (AMC) and the Ahmedabad Urban Development Authority (AUDA). Established in July 1950 under the Bombay Provincial Municipal Corporation Act, AMC, initially divided into 43 wards and 5 zones, underwent expansion in the 1980s. This AMC area, covering 6 zones and 64 wards, reflects the city's evolving landscape. Likewise, the Ahmedabad Urban Development Authority was established in 1978 under the Gujarat Town Planning and Urban Development Act. AUDA sustains its mandate for sustainable planning and development beyond AMC's boundaries, actively contributing to the city's growth and well-being.

Ahmedabad has adopted a structured approach called the Town Planning Scheme (TPS), which deals with the process of acquiring urban land for public services and promotes a more equitable distribution.

Ahmedabad has adopted a structured approach called the Town Planning Scheme (TPS), which deals with the process of acquiring urban land for public services and promotes a more equitable distribution. This approach has allowed the city to secure land for various public utilities such as low-income housing, open spaces, roads,





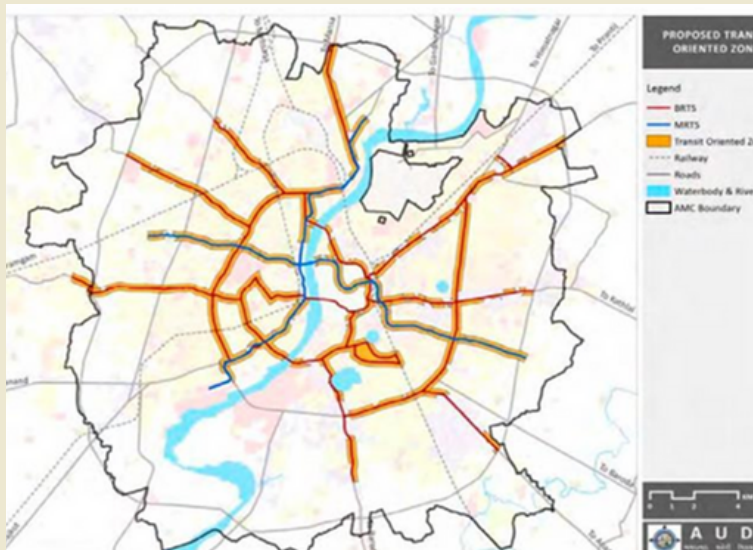
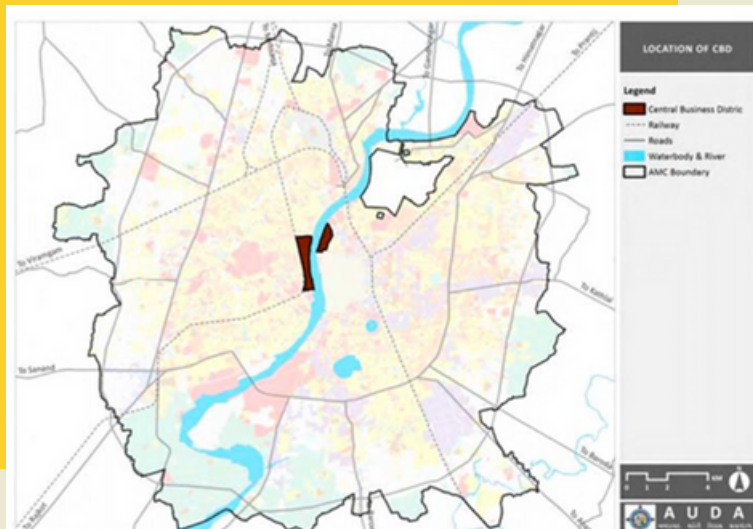
and social amenities. This has facilitated transformative changes in the city, including the construction of numerous evenly distributed social housing units and the development of a well-planned road network that connects the city through India's largest Bus Rapid Transit system. Despite challenges such as time delays and financial constraints, the TPS has played a pivotal role in achieving a more equitable distribution of urban land in Ahmedabad.

Furthermore, Ahmedabad was among the first 20 cities selected for the Smart Cities Mission. This program was initiated by the Ministry of Housing and Urban Affairs as an urban renewal and reconstruction initiative on June 25, 2015. It seeks to improve over 100 cities by

adopting strategies like mixed land use, open space preservation, diverse transport, and smart solutions for better infrastructure. As per the government estimates, Ahmedabad has achieved 66.81% of its Smart City Plan. This can be exemplified by the Sabarmati Riverfront, an urban planning marvel, situated along the banks of the Sabarmati River spanning 10 kilometres on both sides. It serves as a noteworthy initiative in fostering a well-designed environment within Ahmedabad. This project addresses practical aspects of urban living by integrating sustainable features, contributing to the overall ecological balance of the city.

Adding to the list of plans brought forth in the city, the 2011 Ahmedabad Urban Development Authority Development (AUDA) Plan aimed to create a positive environment. It sought to reduce environmental pollution by incorporating green spaces, open areas, and public activity spaces with recreational areas. The goal was to establish a well-rounded developed area accommodating residential, industrial, commercial, and recreational needs with active public participation. Building on the principles of this plan, the 2021-31 AUDA master plan continues the legacy of forward-thinking urban development.

This successive plan showcases a robust structure, incorporating active citizen consultation by involving the



residents of the city as active participants in the development plans. Land pooling for development was also another technique for reducing the overall developmental cost. It involves landowners collectively giving their land parcels to the government for infrastructure development after completion of which, the land returns to owners. Likewise, GIS (Geographic Information System) technology for Central Business Districts and Transit Oriented Zones was employed as a medium to store and analyse data on population densities giving the planners a better idea about the demographics of the city. The integrated and tech-driven approach demonstrates Ahmedabad's dedication to well-balanced urban development, aligning with its growth objectives and fostering sustainability over the next decade.



Comparative analysis: Mumbai and Ahmedabad

Mumbai, as a bustling megacity and the financial hub of India, faces a myriad of challenges that demand careful consideration. Currently, the Municipal Corporation of Greater Mumbai (MCGM) is the apex body responsible for the governance of this expansive metropolis. With a per capita income three times higher than the national average, Mumbai significantly contributes to the overall tax revenues of the country (Statista, 2022).

However, for the past two decades

Mumbai's geographic vulnerability looms large. Situated at a mere 10-15 metres above sea level, the majority of the regions in the city are prone to flooding. For instance, the 2005 floods showcased the city's susceptibility to coastal climate hazards, coastal erosion, landslides, and flash floods due to climate change. In addition to environmental risks, the concentration of around 900 industries engaged in the manufacturing, processing, or storage of hazardous goods posed a serious threat to the lives of people. Many of these industries are situated near residential and commercial areas, heightening the risk of fires and explosions.

The city's allure as the financial capital attracts a massive workforce, intensifying pressure on basic infrastructure, civic amenities, and housing. The growing population, thereby, creates pressure on the transport network as a significant proportion of people commute between the north and south regions of the city during peak hours. This has exacerbated the congestion on the road network.

Furthermore, a staggering 56% of the population of Mumbai resides in slums. The expanding trade and commerce, along with a high migration rate, has also made residential property acquisition nearly impossible for low-income households due to the soaring land

and material costs. Consequently, the proliferation of slum dwellers exacerbates problems related to congestion, traffic, unhygienic living conditions, and challenges in solid waste disposal.

In essence, Mumbai's multifaceted challenges demand a comprehensive approach. This includes addressing environmental vulnerabilities, industrial hazards, transport congestion, and the swelling slum population.

Mumbai can learn from Ahmedabad's successful urban development strategies to address its challenges. Inspired by Ahmedabad's Smart City Initiative, Mumbai can also develop a similar roadmap, prioritising projects that enhance mixed land use, walkability, and sustainable development. Along with this, environmental resilience is also essential for Mumbai as the city is largely vulnerable to frequent flooding and coastal hazards. Ahmedabad's Sabarmati Riverfront project can be a good example of utilising natural resources for developmental purposes. It is essential to frame strategies that conceptualise the idea of open spaces, extending beyond traditional gardens and recreational areas. These plans should encompass the extensive and diverse natural resources found in the city, such as rivers, creeks, lakes, ponds, depleted

quarries, mangroves, wetlands, beaches, and waterfronts.

In essence, Mumbai's multifaceted challenges demand a comprehensive approach. This includes addressing environmental vulnerabilities, industrial hazards, transport congestion, and the swelling slum population.

The objective should be to establish inclusive and accessible spaces that are open to the general public. Despite having 16 kilometres of beaches, Mumbai is facing a decline in public open spaces and opportunities to appreciate the Arabian Sea. This reduction is attributed to unchecked coastal construction and the resulting ecological harm. To overcome some of these challenges, there is a promising initiative underway at Dadar-Prabhadevi involving a beach conservation and nourishment program. The positive outcomes observed in this modest-scale project suggest that similar efforts can be implemented at other beaches across the city.

In terms of industrial planning, Mumbai can strategically zone industrial areas away from densely



populated regions. Following Ahmedabad's success with Special Economic Zones and Industrial Parks, Mumbai can foster economic growth while enforcing safety regulations for industries dealing with hazardous goods. Additionally, addressing Mumbai's housing crisis requires well-crafted innovative solutions. Looking at Ahmedabad's Town Planning Scheme, affordable housing projects and slum rehabilitation programs can significantly improve living conditions. Efficient land use through land pooling and zoning can be applied in Mumbai for a more equitable distribution of urban land.

Mumbai could adopt a similar approach to Ahmedabad's Land Use Land Change (LULC) strategy, developing a comprehensive land use

plan accommodating rapid population growth while preserving natural resources. Strengthening existing urban planning authorities or establishing new ones, akin to Ahmedabad's Municipal Corporation (AMC) and Urban Development Authority (AUDA), can be a great initiative. These organisations would oversee sustainable planning and development initiatives across the city by focusing on specific sectors without intervening in the functioning of others. This plan, inspired by Ahmedabad's successful urban planning, can aim to foster sustainable development in Mumbai.

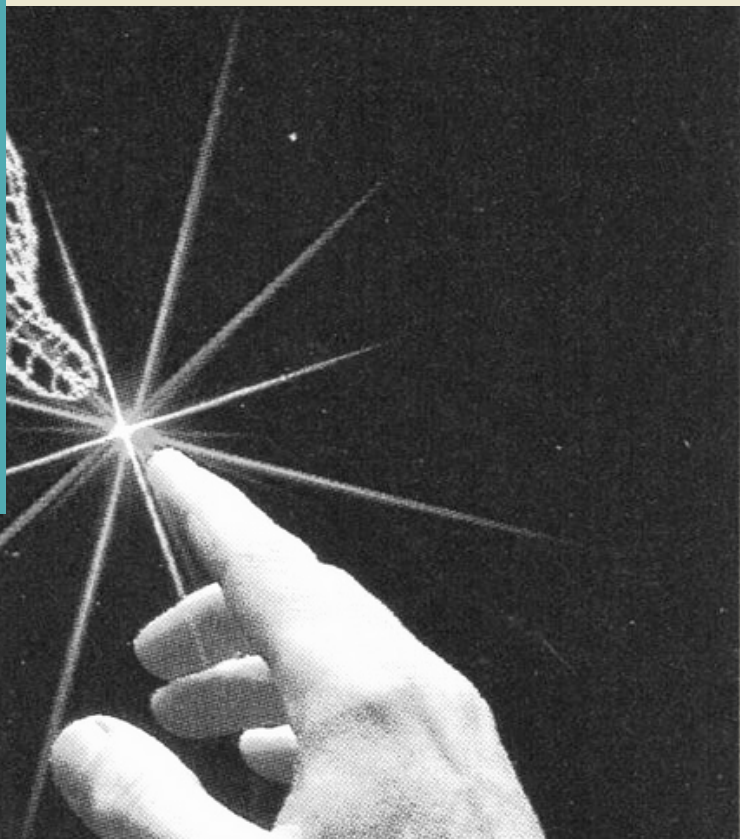
04 Is There an Invisible Hand That Controls Us?

Shristi Ojha

*Adam Smith's **The Wealth Of Nations** was published in 1776; James Watt introduced the steam engine in the same year, kickstarting the Industrial Revolution. At the tercentenary of Adam Smith, civilization may be at a crossroads yet again due to an Artificial Intelligence revolution, which might be just as disruptive as the Industrial Revolution. We can see that AI is transforming our lives, but is it today's steam engine?*

The invisible hand (intervention of God) first appeared in famous Scottish economist Adam Smith's works *The Wealth Of Nations* and *The Theory Of Moral Sentiments*. It is a concept that focuses on how simply a market can operate without any government intervention if the people contribute to a healthy economy by acting with their interests in mind.

The invisible hand's economy interacts directly or indirectly with top-to-down planning authorities. It creates an idea that specialises in production, leading to a web of mutual interdependencies of self-interested individuals to produce what is socially necessary and



The theory of the invisible hand not only bases capitalism but also aligns with the idea of laissez-faire economics.

beneficial to all. The theory of the invisible hand not only bases capitalism but also aligns with the idea of laissez-faire economics. The key ideas this theory brings to light are, that voluntary trades produce unintentional and widespread benefits in a free market and mutual benefits compared to a planned, regulated economy.

Smith's ideas went beyond an individual's imagination when he wrote them as he idealised advancing well-being and prosperity at a time of significant change. The Industrial Revolution was ushering in new technologies that would revolutionise the nature of work, create winners and losers, and potentially transform society.

Today, we might find ourselves at the same inflexion point. New technologies such as generative artificial intelligence are emerging

and redefining an individual's work and can extraordinarily transform lives. The current financial situation has unpredictable and uncertain behaviour that keeps changing. There is no fixed pattern for a profitable outcome, hence the financial revolution has left behind the theories which it once had its foundation laid upon.

This leads us to question if the 'invisible hand' is even relevant in this modern era. Could artificial intelligence be the invisible hand that guides this modern era's free market? After all, Adam Smith never stated the nature of the hand that was guiding the free market.

If we follow this line of thought, artificial intelligence can overcome human flaws while also learning from them. The future that Adam Smith never saw and the one we live in can drastically change if AI guides us in finance like in many other fields. We could witness the possibility of finance becoming utilitarian instead of filling the pockets of a privileged few.



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Artificial Intelligence (AI) in finance helps drive insights for data analytics, performance measurement, predictions and forecasting, real-time calculations, customer servicing, intelligent data retrieval, and more. It enables financial services organisations to better understand markets and customers, analyse and learn from digital journeys, and engage in a way that mimics human intelligence and interactions at scale. Somewhere in the future, we might be able to acknowledge what would be called 'Financial Intelligence' or AI 2.0. The world of finance is a potential laboratory for exploring the effects of AI because information processing is the central function of financial markets.

Unsurprisingly, the financial institutions of all types invest heavily in technology and data well ahead of other industries

in order to compete most effectively. Of course, the experience of finance may not fully illuminate the scope of newer large language models that have impressed the world in the last six months. However, the changing competitive dynamics within finance over the last decade provide clues about what will happen across many industries when AI becomes cheaper and more widely available. Regardless of how these newer versions of artificial intelligence play out, finance will always be the canary in the coal mine for the rest of the economy due to its immense potential in wealth and risk management, financial security, financial consulting, and blockchain. Financial intelligence could fulfil the fundamental goal of finance: efficient capital allocation.

In the distant future, AI 3.0, an enhanced combination of AI and finance, may come into existence. It would entail less human intervention thereby creating a world where AI takes over the human market and provides better output for the financial world with less input.



Financial intelligence could fulfil the fundamental goal of finance: efficient capital allocation.

Hence, we must not underestimate the power of AI to mimic human thinking and its adapted way of learning. A recent publication in *Nature Machine Intelligence* explored this part of the AI revolution. Researchers have created a new artificial system that not only simulates but also behaves like a human brain. This evolving reality of neural networks, a realm in which AI meets human cognition, stands at the forefront of AI and humanity.

The rate of technology improvement is uncertain, but it is a matter of 'when,' not 'if'. The parallels between Adam Smith's time, marked by the theory of the invisible hand, and our current era, seeking to revolutionise ideas about AI and its capacity to mimic the human brain, (particularly in finance) are evident. Thus, we find ourselves in a struggle over the power dynamics of AI. The human species ought to find out which path it is headed towards: another revolution to enhance the human race or end up on a destructive path. Either one would not be possible without risk management.

The financial services industry in the future will look very different than it does today. The winners will be the firms that can manage the difficult transition to an advanced AI-driven customer experience and a more focused and nimble workforce.

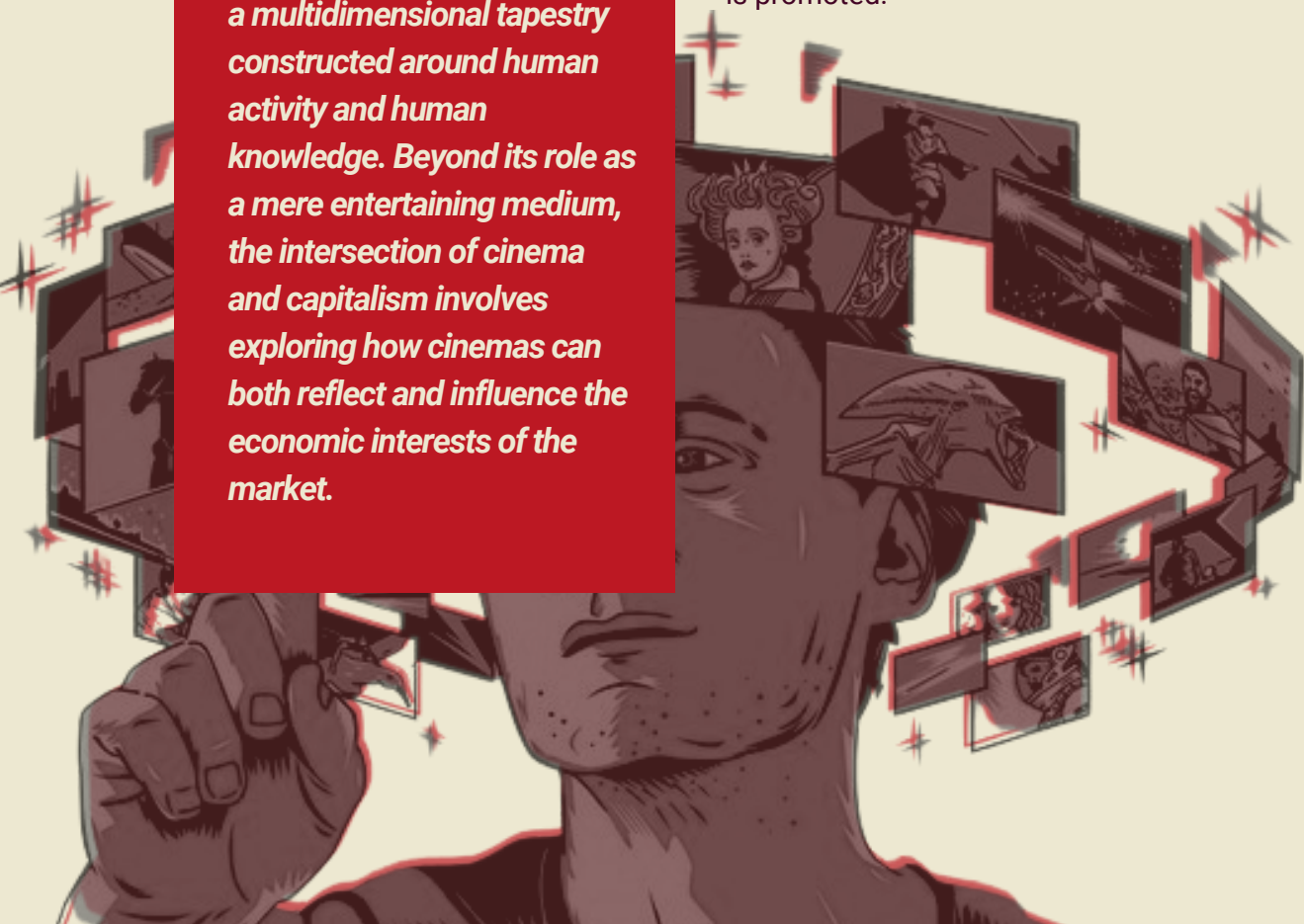


05 Capitalist Dreams on Screen: Materialist Consumerism in Cinema

Urmila Udhalikar & Bhavya Singh

Cinema, as an industrial art, is a multidimensional tapestry constructed around human activity and human knowledge. Beyond its role as a mere entertaining medium, the intersection of cinema and capitalism involves exploring how cinemas can both reflect and influence the economic interests of the market.

Cinema and Capitalism: the combination of these two terms may seem unusual, but it is an intricate interaction between economics and creative expression. A modern phenomenon that the working class is closely associated with is cinema. The audience plays a passive role in cinemas that follow the dominant aesthetic norms and formulae of the capitalist cinema industry. They are seen as mere consumers who must be satisfied by a commodity. People are continuously exposed to the newest fashion, technology, and 'must-have' items. Purchasing items that guarantee to improve their lives, satisfy them, and make them happy is promoted.



At the heart of this intricate behaviour, cinema becomes an indicator of collective consciousness, offering insights into the issues and ideals of a specific era. Social power is prominent in the age of capitalism, and mass culture is a powerful medium for the transmission of this power. Mass culture is essential to the production and manipulation of human desires because it fosters an environment in which buying is not only a transaction but also a way to express one's identity and sense of belonging. It is fascinating that how we perceive the world is based on the information we learn which is transmitted through the media. Information is transmitted through 'fictional' media, and the cinema industry is one of the primary providers of this type of media. The fictional medium of cinema presents 'materialist consumerism' as a way of life, assuming that obtaining material wealth through consumption gives lives meaning.

In recent years, the impact of capitalism and consumerism on cinema has sparked increased attention and concern.

The fictional medium of cinema presents 'materialist consumerism' as a way of life, assuming that obtaining material wealth through consumption gives lives meaning.

Audiences are exposed to a wide range of stories that frequently celebrate lavish lifestyles, material prosperity, and the pursuit of luxury as they flock to theatres or stream cinemas on the internet. The convoluted link between cinema, capitalism, and consumerism will be further examined in this article, as we analyse how the representation of rich and consumerist lives in cinemas affects both broader societal standards and personal goals. By evaluating notable examples and investigating the integration of commercial interests inside cinematic storylines, the fundamental processes that sustain capitalism and consumerist ideology can be studied the lens of cinema.

It is evident that the interests of the market have a near-total influence on modern cinema and cinematic representations. More significantly, these interests do not direct individuals toward a process of meaningful thought. They only seek to increase the visibility of the products in the market for the interest of capitalists. As an



industrial practice, cinema is shaped by the economic and ideological interests of the market. All modern cinemas are made only as commodities of the spectacle. The economic system of capitalism, of which the consumer is an essential component, is extremely prominent in society. The unsatisfied need is the foundation of capitalism, and popular cinema portrays it with the unsatisfied desire to fit in, as shown in Mary Harron's *American Psycho* (2000) and David Fincher's *Fight Club* (1999).

These cinemas offer captivating narratives that explore the psychological intricacies of unsatisfied desires. The darkly pessimistic comedy *American Psycho* explores the demise of humanity's soul and the materialism of the 1980s, with an emphasis on Armani suits, cocaine, and business cards. Patrick Bateman plays a wealthy Wall Street investment banker who follows strict workout regimens, eats a well-balanced diet, and leads a healthy lifestyle. He applies close to hundreds of layers of makeup items every morning, in an attempt to create the ideal image of himself. The cinema depicts Bateman as a slave to his desires, motivated by an insatiable urge to consume. Bateman's existence revolves around the never-ending purchase of material objects, whether it's the latest technology, the most



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exclusive reservations, or the most costly business cards. For him, brands come to represent identity and social status, supporting the idea that a person's value is inextricably linked to their material belongings.

The narrator of *Fight Club* believes that he is unique due to consumerism, leading him to purchase furnishings that he believes best capture who he is. Director David Fincher said- “We are designed to be hunters and we are in a society of shopping. There’s nothing to kill anymore, nothing to fight, nothing to overcome and nothing to explore ... In that societal emasculatation this



everyman is created". *Fight Club* honestly illustrates how consumerism turns what was once a want into a necessity and how people spend money on items they don't actually need or can't afford because they have to work long hours at unfulfilling jobs to make the money for survival in the first place.

One reason why people spend money they don't have is that it's not immediately obvious that images may spark someone's interest and, if satisfied, advance the prevailing ideology. When consumer products have greater social relevance, consumer capitalism may take advantage of this position by incorporating them into larger

cultural narratives, associating them with social movements, and employing marketing techniques that appeal to social ideals. This is how consumerism's ideological influence becomes more nuanced over time. The concept of social relevance itself is what drives materialist consumption. Buying an item now involves more than just its functionality; it also involves the social standing associated with possessing it. The lifestyle and prestige that the item will bring you are frequently portrayed as the primary benefit of the product rather than its actual use.

The global distribution of popular cinemas and the broad availability of streaming services have made it easier for capitalist ideas woven into stories in cinemas to be exported. Global cultural narratives are shaped by the cinemas' glorification of consumerist lifestyles and the relentless chase of wealth, which in turn mould audiences' values and goals in a variety of cultural contexts. It is essential to critically analyse the manner in which these cinemas influence cultural norms and public

Global cultural narratives are shaped by the cinemas' glorification of consumerist lifestyles and the relentless chase of wealth, which in turn mould audiences' values and goals in a variety of cultural contexts

awareness beyond national boundaries. In addition, analysing the ways in which alternative cinema industries throughout the globe react to and challenge capitalist ideals may shed light on the intricate dynamics of global cultural narratives influenced by cinema.

The worldwide cultural narratives shaped by capitalist cinema have significant repercussions for international trade and market dynamics. International markets find Western products and lifestyles more desirable due to the presentation of Western consumerism as the epitome of success and fulfillment in cinemas. As nations strive to conform to the aspirational norms promoted by capitalist cinema, this not only affects consumer habits but also trade policy and market tactics. By encouraging openness to international commerce and collaboration, these norms can influence trade policy and help people have a constructive view of globalisation. Economic success

stories are frequently shown in cinemas within a capitalist context. Businesses make use of these prospects to present their goods in a way that increases brand recognition and shapes customer preferences. To capitalise on the popularity of specific themes or items depicted in cinemas, businesses may modify their marketing strategies to fit these trends.

Apart from capitalism, popular cinema is also the largest target of soft marketing, wherein product placements and brand advertising have led to the creation of a fad or a status symbol. Since cinemas and shows are so popular and influential, they set trends that people follow for years. Rachel's iconic hairstyle from the show *Friends* and Suzuki bikes from the movie *Dhoom* are classic examples. Apart from setting influential trends, popular

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cinemas and shows are also responsible for creating a brand of their own by selling merchandise products or creating services affiliated with the brand.

For example, Disney first started making cinemas, now there are 12 Disney theme parks in the world. For the year 2023, Disney Parks recorded a revenue of USD 32.5 billion (Blog Mickey, 2023). Merchandise products also account for a big chunk of revenue for a popular movie series of cinematic universes, for example, *Star Wars* and *Marvel Cinematic Universe*. *MCU* merchandise has earned Disney an estimated sum of USD 41 billion by 2020, which is more than the gross sales of every single Marvel movie combined (Starburst). Apart from merchandising, product placements and soft marketing have

also been used popularly as a part of advertising. Whether it is the placement of 'Audi' in *Iron Man* or Bournvita in *Koi Mil Gaya* the technique of soft marketing builds an awareness of the brand and also makes it look more desirable.

Looking at cinema through this lens proves that cinema doesn't just mirror reality, but also shapes the real desires and dreams that viewers inhabit. The psychological impact of cinema is not sudden and it takes time and money to invest before it can be marketed. Through soft marketing, the products that are placed in cinemas are not directly being sold but also become objects of desire. This provides a huge advertising platform and at the same time, shapes the reality of most of the consumerism in the market.



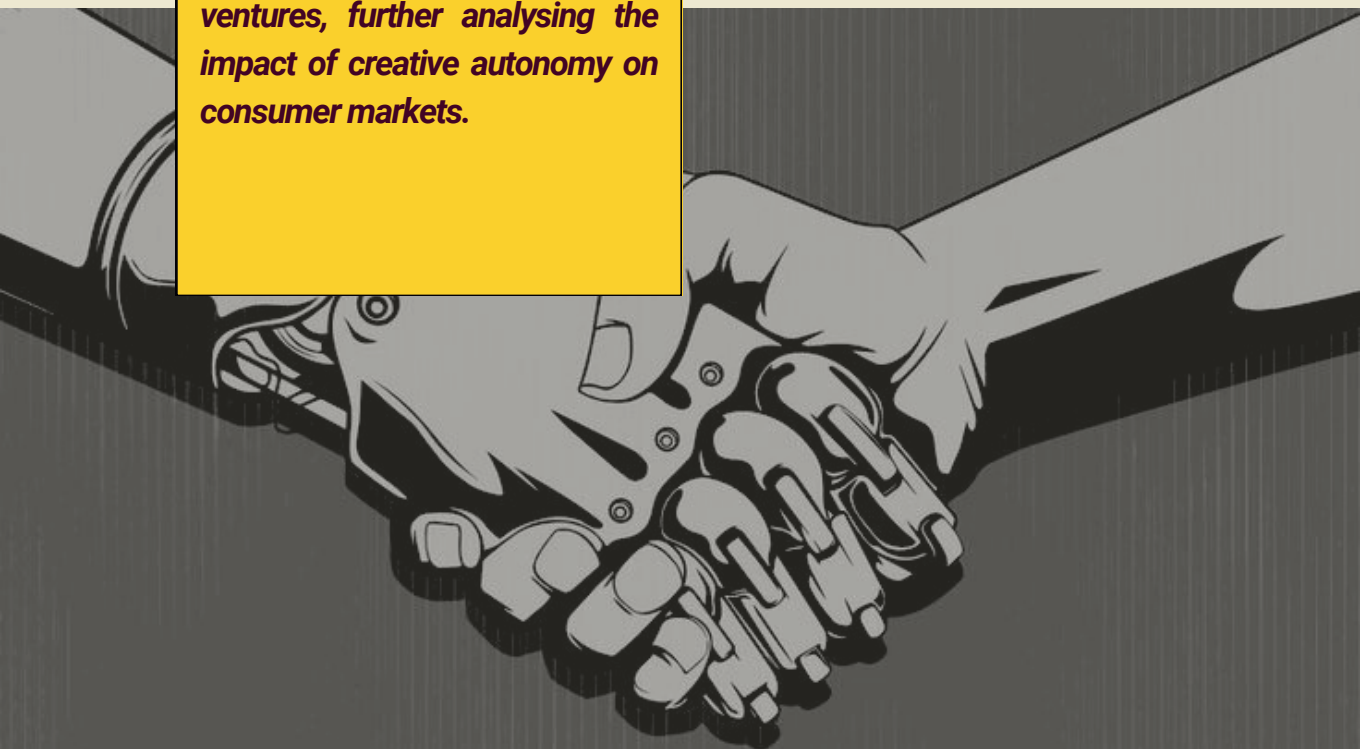
06 The Economic Impact of DIY Culture on Consumer Markets

Aanya Tandon & Preetha Mukherjee

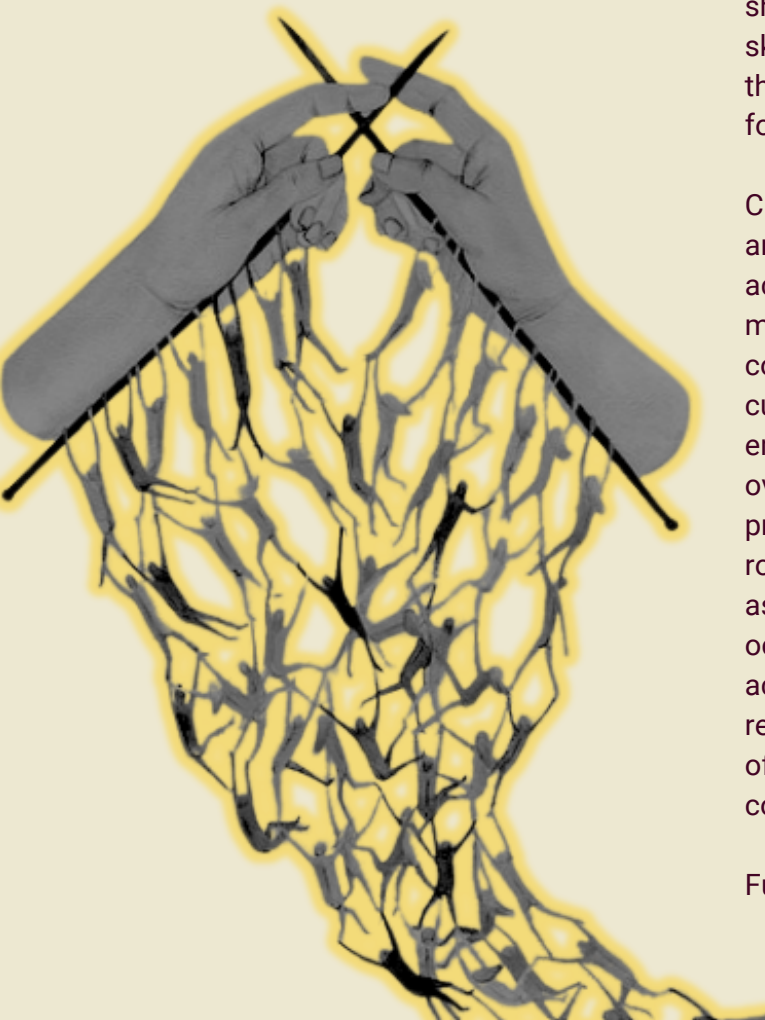
A profound exploration of how DIY empowers individuals in taking up entrepreneurial ventures, further analysing the impact of creative autonomy on consumer markets.

DIY stands for 'Do-It-Yourself' which refers to the process of creating things on your own without the assistance of experts or professionals. The DIY culture promotes self sufficiency, denial of materialism and creativity within a community. It has gained prominence in various fields such as fashion, music, technology and so on as an individual's want to express themselves and shift away from the mass production of mainstream goods. The concept of DIY has a longstanding history that spans through many years.

The term DIY was first used at the beginning of the 20th century with reference to improving and redecorating one's home,



although traditions of self-made artefacts, including clothing, furniture, arts and crafts and musical instruments, etc., have existed long before this. (Benett & Guerra). Since the late 1990's, DIY culture's role has also been a driving force of a growing and diversifying economy which is advancing rapidly. The western world's transition to post industrialisation, drastically transformed the structure of labour and employment, leading to a scarcity of full time employment and a stable career. Due to this, there was a rise in short term and casual labour which gave rise to portfolio careers and



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gig economy. As a response to these shifts, people started acquiring new skill sets that they often obtained themselves rather than a formalised form of training.

Currently, global cities and regions are witnessing this trend where activities like home studios and maker spaces are helping to contribute to a global extensive DIY culture. This concept is significantly emerging as a major player overtaking the traditional forms of production. Consumers taking up the role of producers is a fundamental aspect of DIY. This phenomenon occurs because individuals take an active role in creating, modifying, redesigning, or crafting products, often moving beyond conventional consumer roles.

Further, the concept of



customisation and personalisation enables the users to adjust products according to their preferences, which contributes to the product's final design and its functionality. Within these DIY communities, entrepreneurship flourishes as individuals turn these new found skills into small businesses through online platforms like Etsy.

To comprehend the emergence of DIY culture, we need to take into account the following aspects that impact DIY in consumer markets:

1. Relative Economic Benefit

The motivation for saving and achieving economic benefit, becomes a compelling driving force to engage in DIY activities. This decision making aspect requires a thoughtful evaluation of carefully weighing the potential

economic benefit that could be derived from a DIY project against the cost of purchasing a homogenous service or product from the marketplace. The make-or-buy decision faced by the manufacturers is also applied to the consumers in the DIY market because they weigh the practicality of

creating their own product, especially if it leads to savings that are relative to purchasing goods and services.

2. The need for customisation

DIY behaviours are encouraged due to the fact that consumers are often faced with the problem of finding products that are suitable for them and that cater to their needs. For this reason, they feel a very strong urge to customise their own products. Consumers craft their own personalised items that are tailored according to their own requirements because of the wide range of semi-raw and raw materials that are readily available in the markets. (Wolf, 2011).

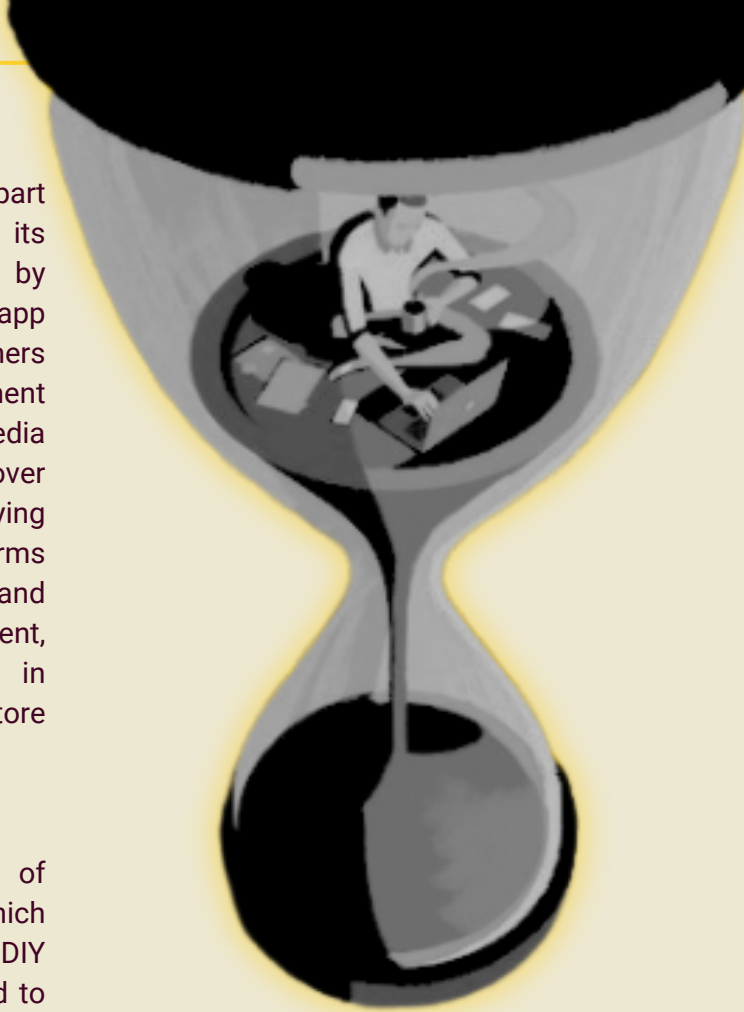
3. Social Media

Social media platforms also play a part in influencing DIY culture and its customisation, it directly fuels it by making it available to buy from the app itself. More than 75% of consumers explore DIY and home improvement products online or through social media before making a purchase, with over 40% of individuals aged 18 to 34 buying directly from social media platforms according to Industry: home and hardware. This signifies the pertinent, top-notch user-generated content in influencing both online and in-store buying decisions.

4. Consumer Empowerment

DIY culture provides a sense of empowerment to the consumers which further motivates them to undertake DIY projects. The individuals are allowed to take more control over their choices of consumption and hence, undertake personalisation of their products to suit their preferences.

The DIY ethos has been transformed into a narrative of entrepreneurship and self-employment, especially in creative and cultural fields through these platforms.



Challenges and Opportunities

The DIY culture, while promoting creativity and independence, has also been incorporated into the capitalist economy, leading to some concerning trends. The DIY ethos has been transformed into a narrative of entrepreneurship and self-employment, especially in creative and cultural fields through these platforms. This shift often results in precarious working conditions for individuals engaging in immaterial labour, where income is irregular or non-existent. The shift towards immaterial labour,

characterised by digital and knowledge-based work, has indeed brought about changes in the nature of employment. In the context of DIY culture, this shift can have implications for those who engage in independent or freelance work related to DIY projects and content creation which is often marked with unpredictable revenue streams and instability in work.

However, it's important to note that the DIY culture also offers opportunities for empowerment. Many individuals choose to embrace a DIY approach precisely to have greater control over their projects and work. While challenges exist, the DIY ethos

encourages self-reliance and the pursuit of passion projects allowing individuals to navigate and adapt to the evolving landscape of immaterial labour.

Policy Implications of the DIY Culture

The DIY culture has several policy implications that touch upon different areas like education, technology, tax policies and so on.

Incorporating the DIY curriculum in





DIY culture helps in creating a supportive ecosystem which includes the set up of businesses at a small scale, further encouraging the principles of self sustainability and creative autonomy. This support system can provide access to funds and facilitation of entrepreneurial mentorship programs, aiding in the expansion of startups and small businesses

educational institutions, especially schools can help in fostering skills required for this practice and provide creative freedom from an early age. This can be implemented separately in both rural and urban areas with the help of policymakers in collaboration with these institutes. In rural areas, this will empower children, fostering self sufficiency which can potentially serve as an additional source of income. On the other hand, in urban areas, it enables students to delve into alternate careers and opportunities beyond the conventional career options. This, therefore, fosters the development of creativity and confidence to pursue DIY related jobs.

Further, tax incentives could be given through the reduction of taxes on raw materials that are required for the DIY projects, thus making them affordable for creators who plan to expand their small businesses. These incentives should be provided on the grounds of prioritising sustainability which will support eco friendly practices of production.

Moreover, consumer protection in the context of DIY culture will ensure that individuals who are engaging in DIY activities have the means to access safe and reliable information about the products. This can be

done through the regulation of marketplaces where the establishment of quality standards and rules & regulations pertaining to these products are taken into consideration in order to protect the consumers from unsafe items. Setting up feedback mechanisms is another important aspect. This system will allow the consumers to report safety concerns which can arise through the engagement in hands-on projects while working with tools and raw materials.

Lastly, DIY culture helps in creating a supportive ecosystem which includes the set up of businesses at a small scale, further encouraging the principles of self sustainability and creative autonomy. This support system can provide access to funds and facilitation of entrepreneurial mentorship programs, aiding in the expansion of startups and small businesses. Different ways to promote the DIY entrepreneurs

should also be taken into consideration and this can be done through online platforms in collaboration with existing platforms of e-commerce and the organisation of fairs and local markets which will provide the creators a platform to showcase their creations.

Future Trends

The DIY Home Improvement Market size is estimated at USD 800.29 billion in 2024, and is expected to reach USD 946.47 billion by 2029, growing at a CAGR of 3.41% during the forecast period of 2024-2029 (Mordor Industry Intelligence Report, 2022). The surge of the DIY culture during the pandemic has not only empowered individuals to find creative solutions amidst challenging times but has also sparked a

profound shift towards sustainable living practices. As global prices rise, consumers are seeking cost-effective alternatives, prompting a resurgence of interest in DIY projects. This trend coincides seamlessly with the growing emphasis on



sustainability and eco- friendliness, as DIY enthusiasts increasingly prioritise upcycling and repair over disposal. Initiatives like Fix It cafes exemplify this ethos, providing platforms for community-driven repair efforts and fostering a mindset of resourcefulness. By embracing DIY practices, individuals not only exercise creativity but also contribute to a more eco-conscious lifestyle, aligning with broader initiatives for environmental preservation. As the DIY culture continues to evolve, driven by innovation and a desire for sustainability, it represents a powerful force for positive change in consumer behaviour and environmental progress. It's not just a passing trend; it's a cultural phenomenon that has firmly established its presence and is here to stay.



07 Consumer Behaviour in Virtual Economies

Aanya Tandon & Anagha Patil

An exploration of the intricacies of consumer behaviour in gaming economies and its domino effect on real-world purchasing patterns.

With changing times and the advancement of technology, there has been a remarkable increase in the demand for entertainment globally. As a result, an investment in the entertainment industry is often regarded as a strategic choice because of its potential to promise substantial returns in the future. In the realm of entertainment, the video games industry has also seen a significant rise in its growth and popularity. The younger generation constitutes a considerable proportion of the consumer base for these gaming platforms. According to the US Video Game Industry: Trends & Forecast 2023, nearly 74.2% of those aged 18 to 24 play video games. According to Mordor Intelligence's report, Global gaming revenue stood at USD 173.70 billion in 2020 and is projected to grow at a CAGR of 9.64%



through 2026, reaching USD 314.40 billion. The gaming industry has emerged as one of the largest sources of leisure in the global arena. Additionally, the arrival of smartphones has significantly changed the market by increasing games consumption (Souza & Freitas, 2023). This pattern is expected to continue, with an increasing number of players turning to mobile phones for an immersive gaming experience.

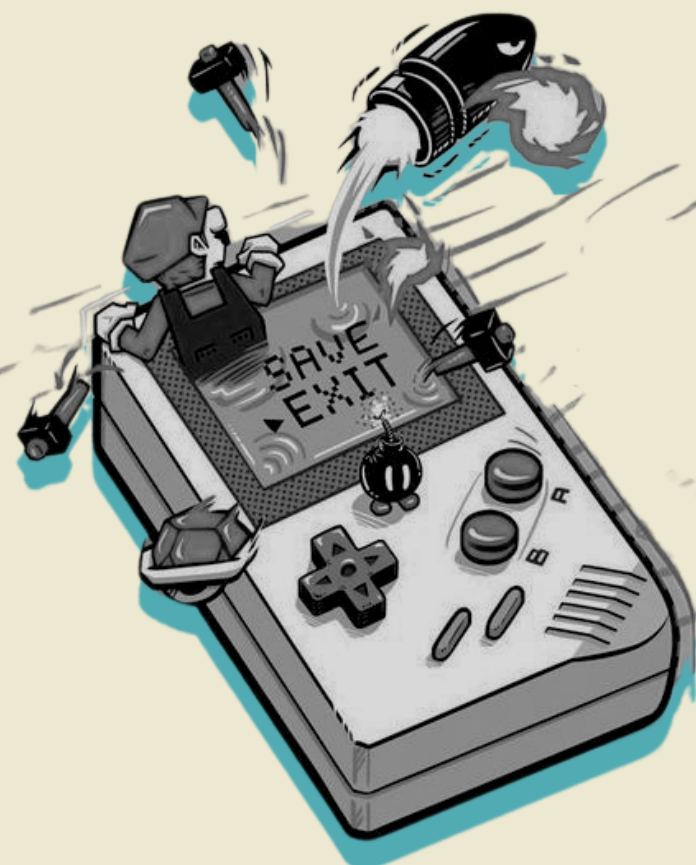
Further, these games provide a 'free-mium' business model which allows free access to games and encourages consumers to make in-game purchases of various enticing items such as virtual coins, power-

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ups, weapons, accessories and so on. It is, therefore, important to understand the spending patterns of the consumers and the economic rationale that influences them. At the same time, in this article, we also try to understand the real-world implications that these in-game purchases have on consumer behaviour.

Rise of virtual economies

The growth of secondary economies outside the gaming world is the problem that game publishers have to deal with. Ultima Online was the first online gaming platform to realise the importance of in-game purchases when a castle in their virtual world sold for several thousand dollars on eBay. To swap the virtual goods for real money, players spent hours searching for rare weapons, building their characters' riches and elevating their status. Some Chinese corporations turned gaming into real business by hiring hundreds of 'gold farmers,' who played games to



accumulate resources that were sold to gamers in South Korea or the US. As a result, eBay started restricting the selling of virtual products in 2007, and the majority of Massively Multiplayer Online Game (MMOG) firms tried to curb this activity by suspending the accounts of suspected gold farmers.

media platforms became more prevalent. The most popular 'Facebook Games' increased revenue by rewarding players for interacting with advertising partners and selling in-game currency.

The internet gaming market has seen major participation from businesses,



Later, when Sony introduced Station Exchange, a tool meant to make it easier for players to purchase and sell virtual goods in its EverQuest games, it effectively cornered the secondary market. The first business to create a game centred around a virtual economy was Linden Lab. Revenue generation out of online gaming gained a fillip when social

governments, and private citizens. The reason is that the online gaming sector has the potential to help achieve satisfaction and fulfilment at an individual level. Similarly, businesses are able to expand their reach and revenue, as well as for the governments it supports their economic growth and cultural exports. Therefore, the size, reach, and number

of players in the online gaming market have seen dramatic growth. The understanding of the benefits, drawbacks, advantages, and disadvantages of quality in online gaming should be determining elements in customer behaviour.

Spending Patterns and Purchase Decisions

In general spending patterns and purchasing decisions are two very important components of consumer behaviour that play a central role in shaping economic perspectives. In the context of gaming economies, the examination of spending patterns and purchasing decisions becomes crucial in understanding the motivations that drive these players to invest in virtual assets like currency, digital goods, character personalisation, etc.

Spending Patterns

Spending pattern refers to the recurring behaviours and trends usually observed in how an individual allocates their money to various combinations of goods and services. These patterns can vary depending upon the changes occurring in various factors such as societal trends, cultural norms, income levels, individual values and so on. It helps in analysing consumer habits and also provides insights to develop targeted strategies for marketing purposes.

In gaming economies, there has been a notable rise in subscription models which is a variant of spending patterns. Through this, the players have to pay a certain fee or a recurring amount to access the selection of games and exclusive in-game content. The developers of these games strategically make the exclusive content time-bound and introduce a unique array of virtual goods so that the frequency of spending surges during this period.

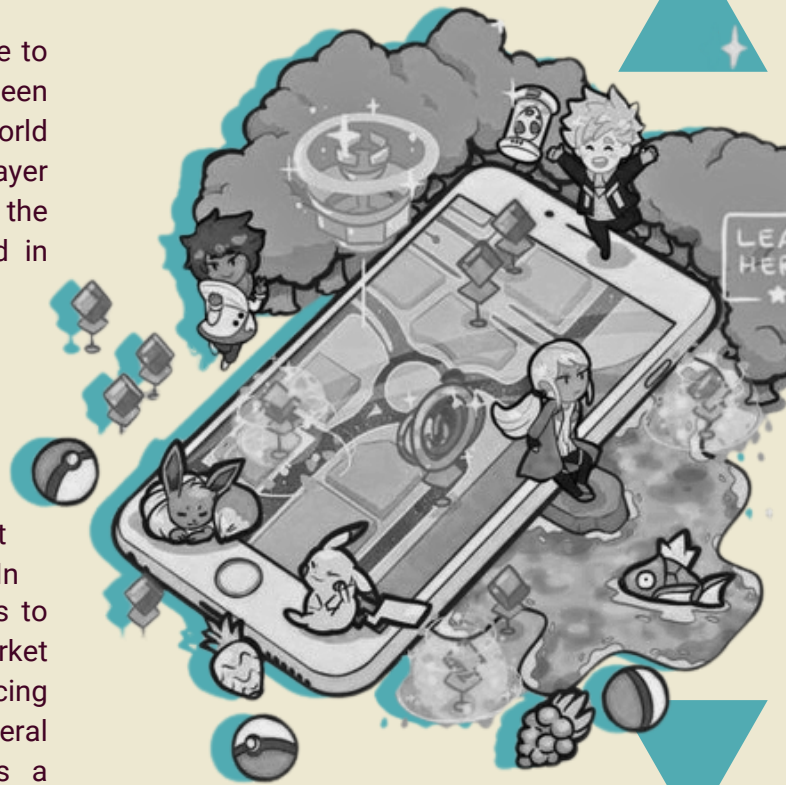
Furthermore, several games include environmental triggers which influence spending. This is usually done by tying in-game purchases to real world seasonal changes or special events. An example of this can be the Halloween festival where people might find special in-game decorations or introduction of virtual characters who



are dressed up in correspondence to the event. This connection between the real world and the virtual world similarities often adds an extra layer of excitement which motivates the players to participate and spend in these events.

Purchasing Decisions

Dynamic pricing strategies in a sense are a form of pricing discrimination and are one of the major factors that influence purchasing decisions. In this, the firms employ techniques to determine the current market requirements and set flexible pricing for products and services. Several games use dynamic pricing as a result of which the cost of in-game items changes depending on player demand, supply and other variables. This approach puts the traditional fixed price structure to the test, adding to the complexity of the player's decision-making process and influencing their in-game purchases. For instance, the introduction of Artificial Intelligence (AI) helps in personalising the individual's preference by setting the algorithms. If a particular character's skin is gaining popularity within the player communities then the developer of the game increases its price to showcase its perceived value. These laws of supply and demand, therefore, mirror the real world market dynamics.



Exploration of consumer behaviour through four gaming realms

To further explain consumer behaviour in the gaming economies, the article focuses on three games which have gained immense popularity in the gaming industry.

Player Unknown's Battlegrounds (PUBG)

During the COVID-19 pandemic, PUBG, a survival game, gained a lot of popularity and stood as a trailblazer in the player-versus-player shooter genre which fascinated people globally. PUBG encourages players to spend in limited-time opportunities by providing a roadmap of special in-game incentives, such as 'battle passes' and 'seasonal content'.

Players can purchase the battle pass using in-game currency or real money, which is required to unlock a wide range of rewards such as skins, weapons, emotes, etc., in a limited time. Seasonal content, on the other hand, portrays a broader selection of in-game updates, events and other activities that occur in a specified season. Both these components urge the players to invest in these opportunities and purchase them before the season concludes.

In essence, these elements of loyalty rewards, exclusivity, and urgency, directly align with the real-world marketing and consumer engagement techniques. The developers of these games draw real-world experiences to enhance the players' gaming experience and make it more immersive.



Pokémon Go

Pokémon Go is another game that revolutionised the world of gaming by blurring the lines between the virtual and real world. Pokémon may be found in real-world areas, and players can utilise augmented reality to discover, catch, and train them.

Players can convert real-life currencies into PokéCoins to acquire various cosmetic items such as clothing, avatars, accessories, etc. Even though these items do not have a practical existence, the players give them a lot of importance because they are a symbolisation of a player's identity in the gaming community. The monetising strategies employed by the creators aim to ensure the player's satisfaction. These strategies include special item bundles, raid passes, and incentivised purchases, similar to the loyalty programs which are also present in the real world further cultivating consumer loyalty as well.



Fortnite

The in-game purchases made by players of Fortnite, such as V-Bucks, have significantly shaped the game's economic impact. Players can purchase cosmetic things like skins, emotes, and gliders with these virtual currency transactions. For Epic Games, the sale of V-Bucks has been a major source of income because gamers must pay real money to purchase the virtual currency. In addition to a large part of the

success of this monetisation strategy, Fortnite is currently among the highest-grossing games in the world.

The microtransaction model implemented by Fortnite, which revolves around the acquisition of V-Bucks for in-game merchandise, has impacted the strategy of other gaming producers. The gaming industry has seen a widespread move towards microtransactions, with many free-to-play titles depending on in-game payments for income.



The popularity of in-game purchases on Fortnite has changed how much people spend, especially among younger consumers.

The popularity of in-game purchases on Fortnite has changed how much people spend, especially among younger consumers. The prevalence of virtual goods in Fortnite has caused consumers to change their buying patterns in favour of digital products and experiences, which has shaped the online retail market as a whole.

Economic Outcomes and Real-world Implications

Theoretical analysis suggests that the coordinated development of the virtual economy and real economy can boost its development, promoting economic growth. Conversely, a poorly developed virtual economy will impede not only the entities' own healthy growth but also that of the virtual economy. The virtual economy can offer a more extensive funding channel for the growth of the real economy when its supply size corresponds with the latter's development needs. To promote the growth of the real economy and virtual economy, it is crucial to transfer market risks, optimise resource allocation, and reduce development costs.

Further, it is essential to look into the future, where new trends will undoubtedly modify the structure of virtual marketplaces. The integration of Virtual Reality (VR) into gaming

Further, it is essential to look into the future, where new trends will undoubtedly modify the structure of virtual marketplaces.



economies, is one such trend which influences the decisions of the consumers by elevating their consumer experience. It enables people to virtually interact with products and make informed decisions in real life. These trends need to be further examined through government initiatives and the implementation of legislative frameworks so that there is a proper balance between innovation and the assurance of rights, privacy and well-being of the consumers in real life.

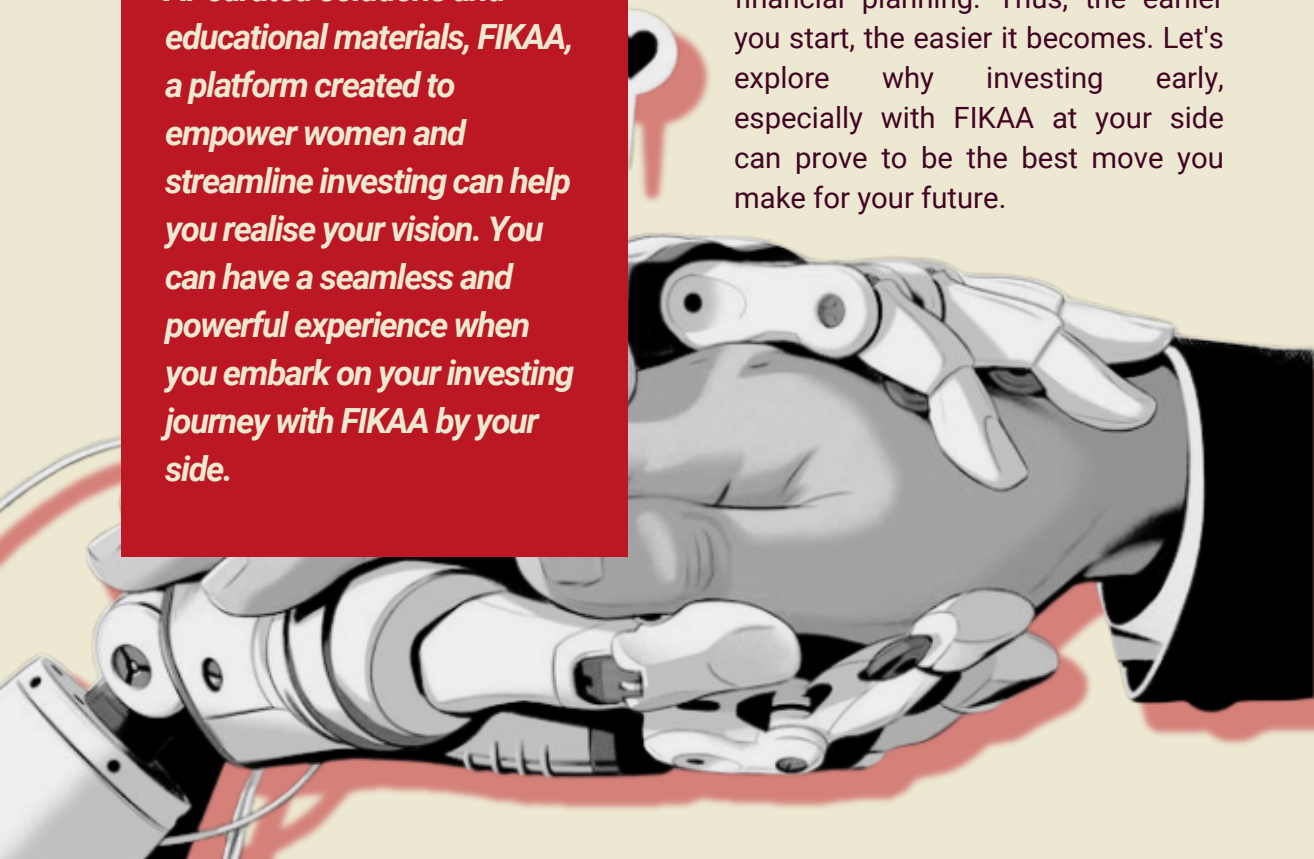
08 How Early Investment Can Secure Your Financial Future

By  FIKAA

Starting your investment journey during your college years can have numerous benefits. Therefore, through AI-curated solutions and educational materials, FIKAA, a platform created to empower women and streamline investing can help you realise your vision. You can have a seamless and powerful experience when you embark on your investing journey with FIKAA by your side.

A whirlwind of new experiences, late-night study sessions, and the exhilarating thrill of independence characterise college life. Nevertheless, one important component that is frequently overlooked amid social and academic demands is financial planning.

You may think that investing is reserved for grownups who have legitimate jobs and salaries. The truth is that the ideal time to begin investing is while you're still a college student because time is a potent financial tool in your possession. Goals for education, travel, and unforeseen costs all necessitate financial planning. Thus, the earlier you start, the easier it becomes. Let's explore why investing early, especially with FIKAA at your side can prove to be the best move you make for your future.



1. Your Money Grows on Money!

A tiny seed can grow into a huge, blooming tree with patience and care. Investing functions in a similar way. It signifies the return earned on both the initial investment and the accumulated interest over time which grows exponentially.

Your investments have more time to compound and produce sizable returns if you start early. For example, if you begin investing INR 50 per month at the age of 20, with an average annual return of 8%, you could amass a whopping INR 1 million by the time you reach retirement age at 60! That's a million-dollar head start you would not have if you started later.

2. You Can Afford to Be Bold

As a college student, you have fewer financial responsibilities than someone with a family and a mortgage. Thus, you will be able to hold onto your investments for a longer period of time. Taking calculated risks with higher potential returns is possible when you have a longer time horizon. You may investigate investments that are growth-oriented, such as stocks, which may encounter more volatility but provide the potential for higher long-term returns.

3. Invest in Yourself, Invest in Your Dreams!

Investing is like embarking on a journey of financial security. If you dream of starting your own business, travelling the world or pursuing higher education, investing at a young age can serve as your financial launchpad to achieve your goals. It offers you the flexibility and freedom to follow your passions unhindered by financial constraints.

4. Build Financial Confidence and Security

Investing is about empowerment, not merely numbers. You can develop financial security and confidence by taking charge of your finances at a young age. You will be more capable of managing unforeseen costs, going after your goals, and securing your future.

Investing early teaches important financial literacy lessons and cultivates a sense of responsibility. You



will learn how to manage risk, obtain a deeper comprehension of how markets function, and form sound financial habits that will serve you well in the long run.

5. Break Generational Stereotypes

It is no secret that historically, there has not been enough representation of women in the investment sector. Social pressures or limited access to financial education could be the cause of this. But by managing your money, you dispel these social barriers and open the door for a time when women will be confident, engaged investors.

FIKAA was established expressly to assist women in their investment endeavours. We are here to support you at every stage of the process because we recognise the special opportunities and challenges that you encounter.

6. Start Small, Dream Big

While the initial investment amount may seem limited, every contribution holds value and has the potential to result in significant long-term growth. Over time, even a modest monthly investment can accumulate into a substantial amount. You can begin investing with a sum that suits your budget, owing to FIKAA's flexible

options. We also offer individualised advice and educational materials to assist you in making wise decisions.

Invest in your future with FIKAA.AI

Among the best choices available to those looking to get into investing is FIKAA.AI. By constantly redefining the mutual fund industry by utilising AI-curated mutual fund baskets, FIKAA.AI is shaping a new era of intelligent investing. These AI-curated investment baskets provide investors with customised investment opportunities by carefully examining various parameters like age, risk appetite, and investment capacity. This individualised approach guarantees that investors set out on a path catered to their financial goals and limitations. Furthermore, FIKAA.AI goes beyond traditional financial products by providing a broad range of options to assist investors in navigating the complexities of the investment industry.

Adding FIKAA.AI's products to your portfolio allows you to diversify, as the company offers both modern digital gold investments and conventional mutual funds. While mutual funds offer chances for long-term capital growth, digital gold is a more

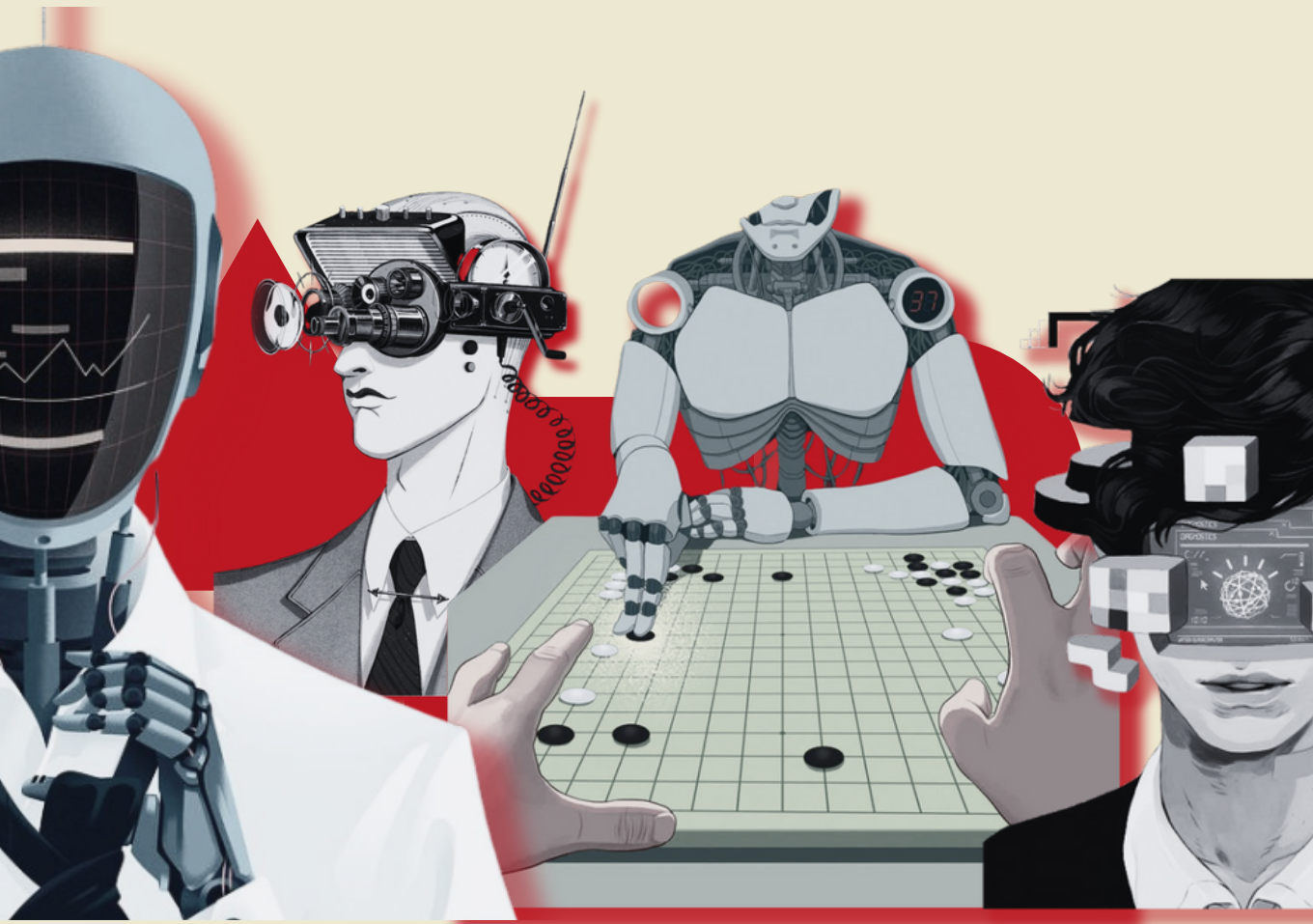


reliable and safer option for investing. Moreover, FIKAA.AI is a lighthouse of wisdom and insight, giving investors critical information and direction. By providing tailored advice and extensive educational materials, FIKAA.AI gives investors the confidence to navigate the complexity of the investment environment with grace and assurance. Consequently, it promotes wise decision-making and long-term financial growth.

Take action now! Get started on the road to financial security by

downloading the FIKAA app. For inspirational, helpful, and thought-provoking content to support your financial journey, follow us on Instagram at [@fikaamyapp](https://www.instagram.com/fikaamyapp).

Never forget that the best present you can give to your future self is by starting an early investment. Initiate investment at a manageable level and maintain a regular schedule to experience the cumulative benefits of compound growth. With FIKAA, take control of your money now, realise your financial potential, and take ownership of your future!



From The Team





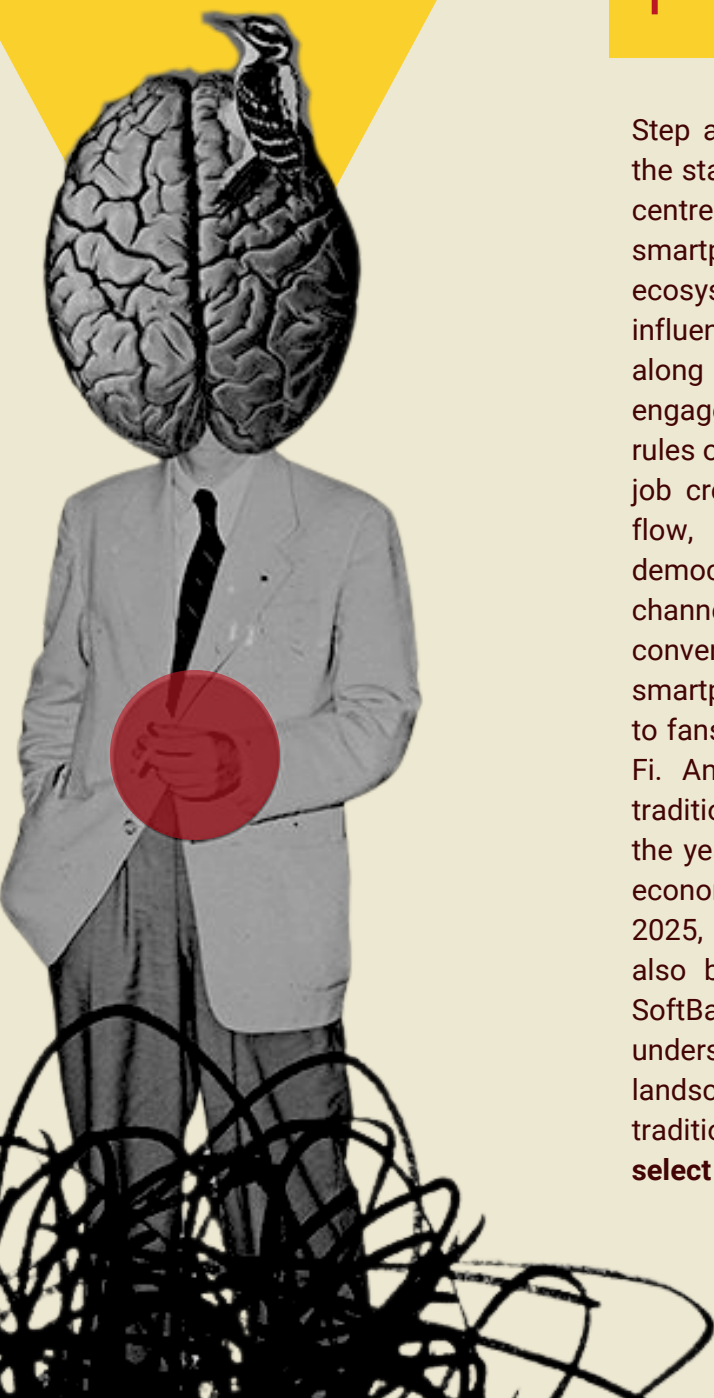
Creator Economy

The democratisation of content creation has created more than just a wave, an entire economic ecosystem in itself, the creator economy is giving prospects for new careers, a new way of consuming content and media.

Introduction

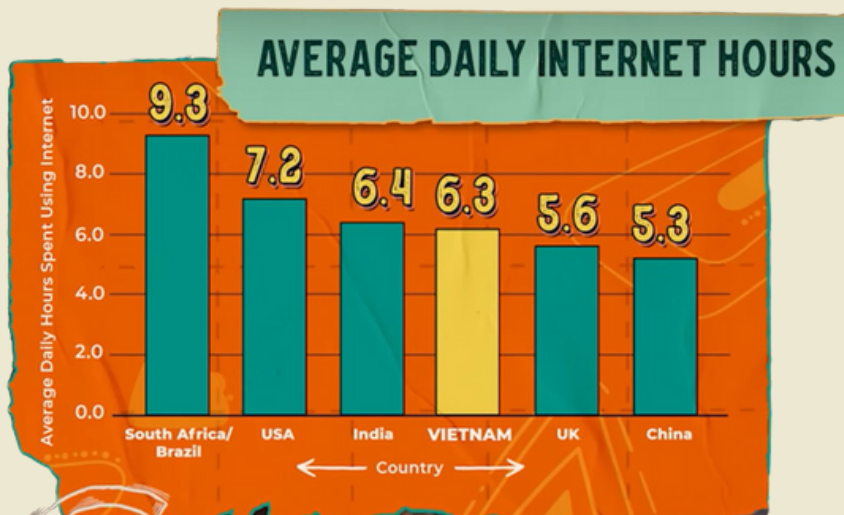
Unlike traditional media's one-way flow, the creator economy thrives on democratisation

Step aside from the bright lights and cheers of the stadium; there is a powerful revolution taking centre stage worldwide, driven by Wi-Fi and smartphone screens—the creator economy. This ecosystem, where digital artisans like financial influencers, fashion influencers, travel bloggers, along with many others build empires of engagement directly with fans, is rewriting the rules of entertainment, brand marketing, and even job creation. Unlike traditional media's one-way flow, the creator economy thrives on democratisation. Sidestepping traditional channels, the creator economy is reshaping conventional media dynamics by leveraging smartphone screens and providing global access to fans through the widespread availability of Wi-Fi. And this engine of transformation of the traditional media has become more active over the years. Global Web Index projects the creator economy to reach a staggering USD 2 trillion by 2025, attracting not just passionate creators but also billions in investments from the likes of SoftBank and Sequoia Capital. This influx underscores the immense potential of this new landscape, a stark contrast to the traditional model of entertainment where a **select few controlled the levers.**



In India, the rise of content creation gained unprecedented momentum with the advent of platforms like TikTok. This social media phenomenon provided a unique outlet for individuals to showcase their creativity, talent, and relatability in short, engaging videos. With TikTok's ban in 2020, the void left by its absence led to the proliferation of short video formats across various platforms like Instagram's Reels, further fueling the surge in content creation. The economic impact ripples beyond mere likes and shares.

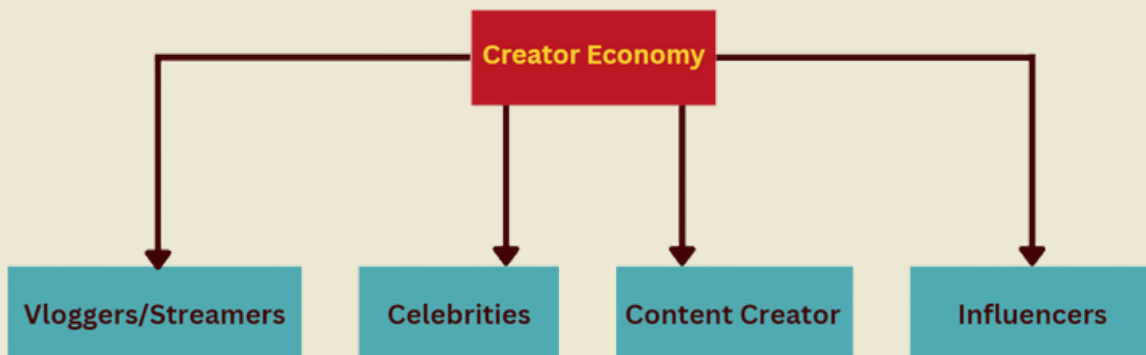
Youtube creators contributed to over INR 10,000 crore in India's GDP in 2021 (Economic Times, 2022). As of December 2022, the Creator economy in India has over 7,000 YouTube channels with over one million subscribers. This figure reflects a remarkable 50% increase compared to the previous year (CNBC, 2023). Monetisation of the creator economy has given a huge incentive to people to pursue a career as a creator. India has more than 80 million content creators as of 2022 and ranks third in the average daily internet hours spent by people (Mint, 2023).



Statista (2023).

Types Of Creators

The expansive and evolving creator economy provides individuals with opportunities to pursue their dream jobs across various niches. Creators are classified, based on domain breadth, reflecting the scope of their content and social presence, indicating engagement with their audience. This classification of creators is done by the team and is solely for education purposes and simplification of the topic.



Artists, such as professional athletes and movie stars, who achieve celebrity status beyond social media become active on various platforms to connect with their fans for brand promotion, endorsements, and entrepreneurial ventures. Experts estimate that a substantial portion amounting to approximately 20-30% of a celebrity's income now stems from social media collaborations (ABP news, 2023).

Apart from celebrities who use social media as a secondary platform of content sharing, there are primary content creators who use different social media platforms to build a career in the creator economy. People who use different platforms to create and share engaging content with their audience and have a broad reach can be deemed creators. Content creators span various niches, including dancers, gamers, podcasters, musicians, streamers, photographers, etc. Some of the most emerging content creators include podcasters, blog writers, artists, poets, etc. Content creators also include educational and informational content regarding all subjects posted by various channels across Instagram and Youtube.

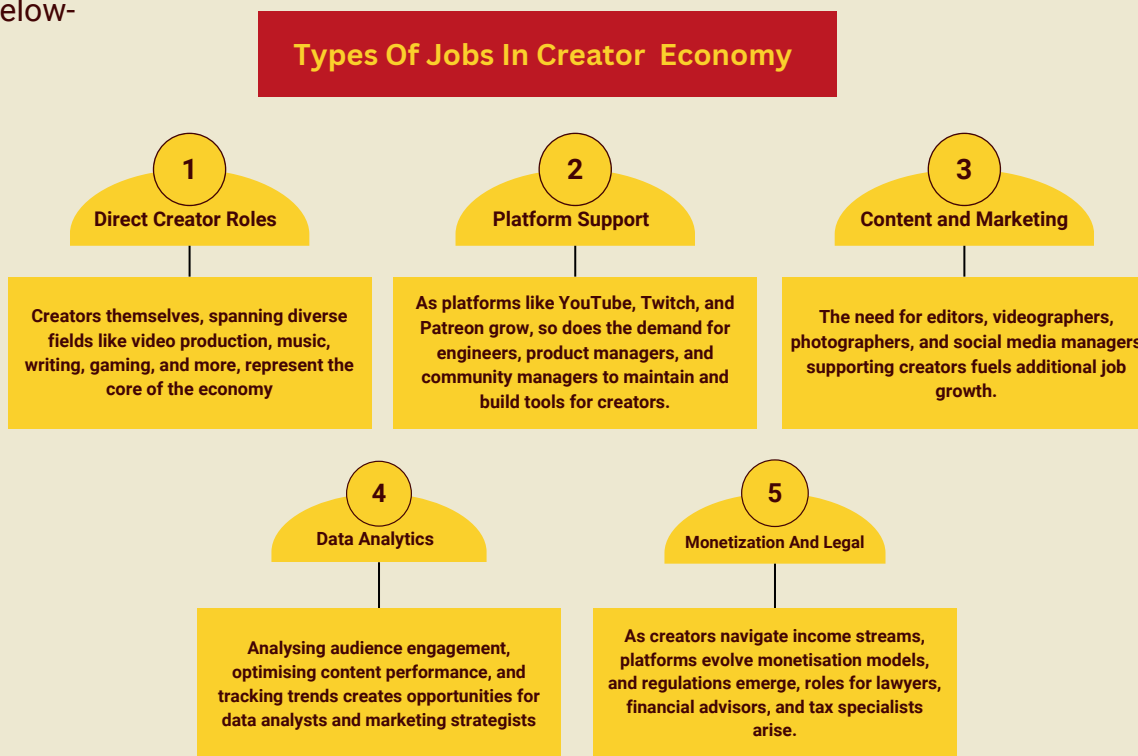
Influencers are also a major part of the economy. Influencers include celebrities, content creators, and streamers/vloggers, which means that they have a well defined

They have a niche audience, group of customers following them for some very specific reason/content, and this helps them monetize their content. They hold the power to sway purchasing decisions within a specific niche, and engage actively with their audience. Their outreach varies from nano influencers, with 1,000 to 10,000 followers, to mega-influencers, boasting 5 million or more followers. The category that an influencer belongs to, generally depends on the type of content they deal with on social media, for example, fashion, financial influencers, skin care advisors, informational and educational content creators, etc. There is also a segment on social media platforms which does not create primary content and rather stream or share their experiences as content. These include reaction videos, streaming reviews, game streaming and also include people who



share their first hand experience of real life through social media, like travel and food bloggers. They don't create any new content, but record their experiences of travelling, food, games, etc., or react to already existing content. For instance, from the year 2022 to the present date, India has witnessed an 8% growth in online gamers (The Economic Times, 2022). Yet this typology may not be definitive because the dynamic nature of platforms results in the daily emergence of new influencers through dynamic platforms.

Apart from being a part of the creator economy directly, it creates a plethora of employment opportunities for all individuals who are looking to be an entrepreneur, an employee, a part-timer and/or a freelancer. The types of jobs created are given below-



Over the years, monetising content creation and establishing a career as an influencer has become increasingly attainable. The amount creators earn is influenced by factors like follower count, audience engagement, and the nature of their content. However, it is now feasible for creators with smaller followings to consistently generate substantial income by cultivating a personal brand on social media. As the creator economy has evolved, the avenues through which influencers can generate income have multiplied.



1. Sponsorship and brand deals

This is the main source of income for almost all content creators, streamers/vloggers, influencers and even celebrities. Even the micro-influencers with fewer than 100,000 followers, attract attention from companies due to their perceived authenticity, engaged audience, and relatively lower partnership costs. For instance, certain brands like Zomato and Bumble, actively engage with content creators, fostering relatable public images through quirky memes and partnerships.

The revenue generated by creators varies depending on the views generated by a particular video. With 10,000 views, the revenue potential is between INR 200 and INR 500. If your video reaches 100,000 views, your earnings could range from INR 2,000 to INR 5,000. For a million views, the potential income increases to INR 7,000 to INR 30,000. Finally, if your content garners 150 million views, you may earn anywhere from INR 1,50,000 to INR 6,00,000 (Upgrad, 2023). Similarly for Instagram too, if creators have a million plus followers the revenue from brand sponsorships and deliverables can reach INR 4,00,000 per post (Embed Social, 2024).

2. Affiliate marketing

In affiliate marketing, creators receive a unique link that tracks purchases made through specific codes. When followers buy using this link, the creator earns a commission, regardless of their follower count. For example, finance influencers can generate a significant income solely from affiliate links. Advertising and Media Insider highlighted influencers who shared their earnings from affiliate links, and earned revenue ranging from USD 50 to over USD 25,000 monthly.

3. Advertising

Creators can also generate income through advertising, as platforms distribute a share of the revenue generated by ads that appear alongside the creator's content. The earnings can be in the form of a fixed fee or a percentage of total sales. YouTube operates a Partner Program for creators with at least 1000 subscribers and 4000 watch hours in the last year. Under this program, creators earn 55% of the ad revenue featured in their videos. Other platforms also follow suit by developing similar programs like Snapchat's Snap Stars program and Facebook Reels share advertising revenue with creators, while TikTok's Pulse program offers a share of its ad revenue to top-performing creators.

4. Online courses

Commencing a course presents an opportunity for creators to enhance their income by imparting their expertise in a particular field or industry. Some creators strategically time the launch of updated course versions to generate increased income. For example: courses run by Dhruv Rathee, ThinkSchool, aevy tv, etc.

5. Consulting

As companies increasingly recognise the impact of the creator economy, there is a growing demand for creators to share their expertise on leveraging social media. Freelance consultants in this field command an average hourly rate of USD 30 to USD 25.

6. Subscription

Creators also generate income through subscriptions and memberships, encompassing monthly or annual subscription fees, direct contributions from fans, or digital tip jars. Various platforms facilitate the creation of memberships, granting fans exclusive access to premium content or live performances. Platforms differ in the percentage of creator revenue they retain; Twitch takes 50%, YouTube takes 30%, Patreon's cut ranges from 5% to 12%, and Twitter charges 3% until a creator reaches USD 50,000, escalating to 20% thereafter.

According to Neo Reach, from the above mentioned revenue streams, 66% of creators' revenue comes from brand deals and sponsorships. Apart from these basic revenue schemes, there are some interesting and rather important facts to keep in mind about the Creator Economy. Even though we mentioned the growth statistics, it is important to know that monetising for creators is not as easy as it seems. To become one of the top earning creators, the creator has to have a larger influence and a larger audience, especially in a longer video format. Only 10% of influencers earn USD 100k or more per year (Exploding topics, 2024).

Even though we mentioned the growth statistics, it is important to know that monetising for creators is not as easy as it seems.



According to Influencer Marketing Hub, 97.5% of Youtuber's do not make enough to reach the U.S. poverty line. In a podcast episode organised by Nikhil Kamath, the founder of Zerodha, some important statistics and revelations came out from the people who have successfully shaped and benefitted from the Creator Economy. They also revealed some major challenges that can be faced by potential creators who seek to make a career in this space, attracted to the growing revenue and market for the creator economy. One of the most important data points mentioned is that Youtube itself takes 55% of the advertisement revenue and 30% of the membership revenue from its creators. Another important revelation was that creators cannot make money enough to sustain out of only the platform, most creators who do not pivot into entrepreneurial opportunities along with brand marketing and affiliate marketing are at high risk of loss. No matter how famous a particular creator is at any given point, there is a cycle until the number of views can be increased, after which they become stagnant, which was unanimously agreed by all creators present on the podcast.

No matter how famous a particular creator is at any given point, there is a cycle until the number of views can be increased, after which they become stagnant, which was unanimously agreed by all creators present on the podcast.

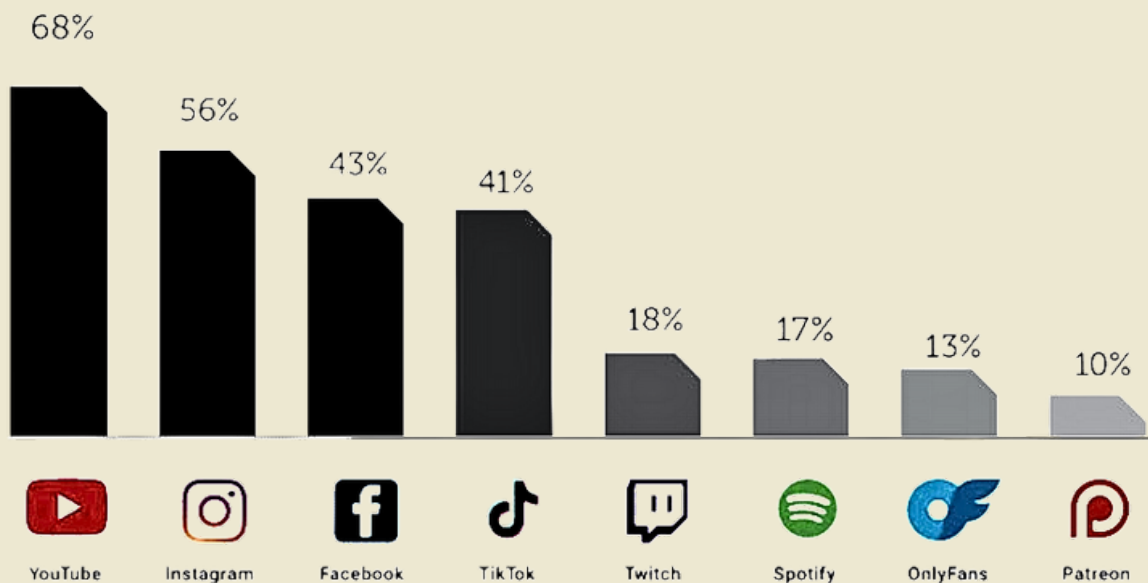
It is important for creators to monetise the community and distribution network rather than monetising their content. For that creators need to keep in mind the importance of distribution across various social media platforms. There is a power law in the creator economy (a power law is a mathematical rule which means that a small change in one thing can lead to big change in another). Therefore, for a creator, some of their videos might go viral while the rest of them might keep generating lower views. Therefore, it is important for creators to maintain consistent quality and a large quantity of videos they decide to post.

These facts are of course helpful solely to content creators and not to celebrities or streamers. However, even after these challenges, the Creator Economy remains one of the newest and the most lucrative industries, generating employment, establishing businesses, services and distributions.



MBO partners

Online platforms used for Content Distribution by Independent Creators



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