SHRI RAM COLLEGE OF COMMERCE

ISSN: 2581-4931 (Print)

STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

VOLUME 5 – ISSUE1 & 2 JULY 2020 - JUNE 2021

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IMPRINT LINE

Printed and published by Prof. Simrit Kaur (Principal, Shri Ram College of Commerce) on behalf of 'Shri Ram College of Commerce' and printed at Sudha Printing Press, B-21/3, Okhla Industrial Area, Phase-II, New Delhi-110020 and published at Shri Ram College of Commerce, University of Delhi, Maurice Nagar, Delhi-110007, India.
Editor - Dr. Rajeev Kumar

License No. – DCP / LIC No. F. 2 (S / 37) Press / 2017
Registration No. DELENG / 2018 / 75093
ISSN 2581- 4931 (Print)
(Published in November, 2021)

All correspondence relating to publication of the journal should be addressed to :

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Shri Ram College of Commerce
University of Delhi
Delhi - 110 007 (India)
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1. समाचार पत्र का नाम Title of the Newspaper	**STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE**
2. समाचार पत्र की पंजीयन संख्या Registration Number of the Newspaper	**DELENG/2018/75093**
3. भाषा/भाषाएं, जिसमें/जिनमें समाचारपत्र प्रकाशित किया जाता है Language/Languages in which it is published	**अंग्रेजी ENGLISH**
4. इसके प्रकाशन का नियतकाल तथा जिस दिन/दिनों/तिथियों को यह प्रकाशित होता है Periodicity of its publication and the day/days/ dates on which it is published	**अर्ध वार्षिक HALF YEARLY**
5. समाचारपत्र की फुटकर कीमत Retail selling price of the newspaper	**FREE DISTRIBUTION**
6. प्रकाशक का नाम/Publisher's Name	**SIMRIT KAUR**
राष्ट्रीयता/Nationality	**INDIAN**
पता/Address	**341, NARMADA APARTMENTS, ALAKNANDA, NEW DELHI-110019**
7. मुद्रक का नाम/Printer's Name	**SIMRIT KAUR**
राष्ट्रीयता/Nationality	**INDIAN**
पता/Address	**341, NARMADA APARTMENTS, ALAKNANDA, NEW DELHI-110019**
8. सम्पादक का नाम/Editor's Name	**DR. SANTOSH KUMARI**
राष्ट्रीयता/Nationality	**INDIAN**
पता/Address	**T-7, NEW TEACHERS FLAT, SHRI RAM COLLEGE OF COMMERCE, UNIVERSITY OF DELHI, MAURICE NAGAR, DELHI-110007**
9. जिस स्थान पर मुद्रण का काम होता है, उसका सही तथा ठीक विवरण True and precise account at the premises where printing is conducted	**M/S SUDHA PRINTING PRESS B-21/3, OKHLA INDUSTRIAL AREA, PHASE-II, NEW DELHI-110020. (2) M/S POONAM PRINTERS, C-145, BACKSIDE NARAINA INDUSTRIAL AREA, PHASE-I, NEW DELHI.**
10. प्रकाशन का स्थान Place of publication	**SHRI RAM COLLEGE OF COMMERCE, UNIVERSITY OF DELHI, MAURICE NAGAR, DELHI-110007**

दिनांक /Date: 4/5/2018

(आर. के. भारद्वाज/ R.K. BHARDWAJ)
उप प्रेस पंजीयक/ Deputy Press Registrar
कृते भारत के समाचारपत्रों के पंजीयक
FOR REGISTRAR OF NEWSPAPERS FOR INDIA

Owner(for reference):
SHRI RAM COLLEGE OF COMMERCE

NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION RESOURCES
(Council of Scientific and Industrial Research)
14, Satsang Vihar Marg, New Delhi 110 067

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

S. B. Burde,
Head, National Science Library, ISSN
Phone: 91-11-26863759
E-Mail: issn.india@niscair.res.in

No. NSL/ISSN/INF/2018/210 **Dated: June 01, 2018**

Shri Ram College of Commerce,
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STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE
ISSN 2581-4931 (Print)

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The college appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the college has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce'.

ABOUT THE JOURNAL

It is a double blind reviewed bi-annual Journal launched exclusively to encourage students to pursue research on the contemporary topics and issues in the area of commerce, economics, management, governance, polices etc. The journal provides an opportunity to the students and faculty of Shri Ram College of Commerce to publish their academic research work.

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Shri Ram College of Commerce is committed to upholding the high academic standards. Therefore, the Committee on Publication Ethics (COPE) follows a 3-Stage Selection Process while approving a paper for publication in this Journal. The policy is as follows:

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4. Keywords

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The abstract should capture the essence of the article and entice the reader. It should typically be of 100 -150 words, and in Italics.

Font type and word limit

The research paper is to be typed on A-4 size paper with single line spacing. The complete length of the paper should not exceed 5000 words including endnotes and references. The font size should be 12 and font style should be Times New Roman.

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Endnotes

Endnotes should be serially arranged at the end of the article well before the references and after conclusion.

Table, Figures, Graphs

The first letter of the caption for table, figure, graph, diagram, picture etc. should be in capital letter and the other words should be in small letter - e.g. Table-1: Demographic Data of Delhi, Figure-1: Pictorial Presentation of Population etc.

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Declaration

As part of the submission process, the student and mentor needs to declare that they are submitting original work for first publication in the Journal and that their work is not being considered for publication elsewhere and has not already been published elsewhere. Again, the paper should not have been presented in any seminar or conference. The scanned copy of duly signed declaration by the students and their respective mentors has to be emailed along with the research paper.

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Principal's Message

To achieve and promote excellence in research and publish quality academic as well as educational resources as guided by the Mission Statement of the College, Shri Ram College of Commerce had launched a Journal, "Strides- A Students' Journal of Shri Ram College of Commerce" on the occasion of 91st Annual Day of the College held on 13th April, 2017. The Journal was released by then the Hon'ble Union Minister of Human Resource Development, Shri Prakash Javadekar. The Journal publishes the research papers and articles written by students of the College under the mentorship of Faculty Members which go through an intense review mechanism before getting published.

Through the Journal, students get an excellent platform to enhance their research calibre, display their academic perspective, and practically apply their classroom learnings to real-world situations. The present Issue includes several multi-disciplinary and contemporary topics such as "Effects of Globalization on the Indian Health Sector", "Will America Sustain the Wave of Automation?", "Recycling Hoax", "The Role of Corporate Social Responsibility towards Sustainable Education with reference to the FMCG Companies", "COVID-19 and Mental Health of Adolescents", "Cryptocurrency-The Rise of Tokens", and "Discussion of the Link Between Air Pollution and Economic Growth in Indian States".

I wholeheartedly congratulate the Editor, Strides, Dr. Rajeev Kumar and students whose research papers got published in Volume 5 Issue 1and 2 of the Journal. Simultaneously, I encourage more students to contribute their research papers for the successive Issues.

My best wishes for your future endeavours!

Prof. Simrit Kaur
Principal

Editor's Message

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The College acknowledges and values the role of research in education and is firmly committed to develop and encourage an inclination towards research in both faculty and students. To reaffirm this ethos, the College has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce' to encourage students to pursue research under the guidance of the faculty of Shri Ram College of Commerce.

It is a bi-annual Journal launched exclusively to publish academic research papers and articles by the students on contemporary topics and issues in the area of commerce, economics, management, governance, policies etc.

In order to maintain high standards of publication, COPE (Committee on Publication Ethics) has been constituted. The COPE is the apex authority which authorises over all the decisions related to publication of research papers and articles in Strides. The recommendations and decision of COPE is final and binding.

To maintain high academic standards, academic ethics and academic integrity, a rigorous process of double-blind review of research papers is followed along with screening of plagiarism of each manuscript received by the COPE for publication. The research work published in Strides is absolutely original and not published or presented in any form at any other public forum.

The foundation issue of the Journal "Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17" was successfully released on 91st Annual Day of SRCC held on 13th April, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India. The successive issues of 'Strides - A Students' Journal of Shri Ram College of Commerce' have been released bi-annually. However, due to the COVID19 pandemic and ensuing lockdowns the current issue has been delayed.

I congratulate all the students whose research papers are published in this issue of Strides and express my sincere thanks to their mentors and referees.

Dr. Rajeev Kumar
Editor

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STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

Volume 5 | Issue 1 & 2 | July 2020 - June 2021 | ISSN: 2581-4931 (Print)

RESEARCH PAPERS

Effects of Globalization on The Indian Health Sector

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ABSTRACT

Globalization is the integration of world economies into a common global economy. It has far-reaching effects on the healthcare sector. In a country like India, where around 23% of the population lives below the poverty line, adoption of neo-liberal policies after the 1991 economic crisis, has had both positive and negative impacts. Though the overall figures have improved exponentially, a major section of the society still doesn't have access to proper healthcare owing to the scarcity of hospitals and dispensaries in rural areas and the exorbitant charges of the private hospitals. The out-of-pocket expenditure forces the poor to incur debts or even sell their assets. There is a clear development of consumerist culture where only those who have resources can access good healthcare and those who don't, are at the mercy of Government run hospitals and dispensaries, which often lack basic infrastructure despite the fact that health is a fundamental right of every human-being, irrespective of social status. Medical tourism is a sector that has developed due to globalization and the ability of

people to travel to foreign countries to seek medical attention. India is a major player in this industry due to its low cost and high-quality services. The growth rate of the medical tourism industry is around 25% and this attracts a lot of Foreign Direct Investment (FDI) from Non-Resident Indians (NRIs). The country is able to generate a lot of revenue through this industry which it uses in its further development rather than the development of the public health services unlike the Cuban government which uses the revenue generated to provide free treatment to its citizens and some allied nations. This paper is an attempt to analyze the shortfalls in the Indian Health sector and measures to improve the prevailing situation.

Keywords: Globalization. Neo-Liberal Policies, User-Fees, Out-of-Pocket Expenditure, Medical Tourism

INTRODUCTION

Anthony McGrew (1992) defines globalization as "the multiplicity of linkages and interconnections between the states and societies that make up the present world system. It describes the process by which events, decisions, and activities in one part of the world come to have significant consequences for individuals and communities in quite distant parts of the globe." In simple words, globalization is the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange. Some argue that globalization is the sharing of cultures, norms, values, traditions and ideologies, while some believe it is a mere westernization or more particularly, Americanization of societies around the world marked in particular by the adoption of neo-liberal policies namely privatization, de-regulation of capital markets, lowering of trade barriers by states across the world and the concept of reduced government interventions. One of the areas where the effect of globalization and adoption of neo-liberal policies is most prominent is the field of healthcare. The World Health Organization defines health as "The state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." The WHO also states that the "enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition." Globalization is causing profound changes to the very nature of

healthcare in the world. It has its own opportunities and threats. This article shall look at the effect of globalization on the health sector of India and try to critically analyze whether the statements given by WHO have been properly implemented and achieved or not.

LITERATURE REVIEW

This article has been inspired from Marianne Emler's (2008) article 'Globalization and Health: A blessing or a curse? A case review of the Indian healthcare system' which gives a brief account of the effects of globalization on the social fabric of the nation and how it has impacted the health status of the population after independence. The article also discusses medical tourism and states how the benefits of it are not able to trickle down to the poor. Tikki Pang and G. Emmanuel Gondon (2004) in the article 'Globalization and risks to health' talked about the negative impacts of globalization and movement of people, goods and services across nations. They argued that because of globalization there is a huge disparity within nations. They also discussed how any disease becomes a global disease and has to be dealt at an international level. Maud Huynen and Pim Martins (2005) in their work 'The Health Impacts of Globalization: A Conceptual Framework' developed a framework to how globalization affects the institutional, economic and ecological aspects of health. Along the same line of argument Neil Lunt, Richard Smith, Mark Exworthy, Stephen T. Green, Daniel Horsfall and Russell Mannion (2005) in their book 'Medical Tourism: Treatments, Markets and Health System Implications: A scoping review' give a detailed description of medical tourism; how it originated; it's present condition in different parts of the world; the different dimensions of medical travel and how it is impacting individual nations and the world economy in general. The book has, using numerous statistical tools, explained the positive and negative impacts of medical tourism.

This paper 'Effects of Globalization on the Indian Health Sector' shall primarily focus on the changes that the Indian health sector went through post-independence and how further development like introduction of user-fees and medical tourism are acting as a double-edged sword in a country like India where there are clear economic disparities.

Objectives

The relationship between globalization and health is quite complex and has numerous dimensions to it. It, however, won't be possible to cover all the dimensions thus this article shall broadly focus on the following two dimensions-

I. To see the transition in the health sector from pre-globalization to post-globalization

This paper will try to bring out the advantages and disadvantages of both the phases using history and statistics and the extent to which they are beneficial or harmful to particular sections of the society.

II. To give a detailed description of Medical Tourism and analyze its positive and negative aspects

This article shall provide a comprehensive idea about why medical tourism came into existence and how has it done in a country like India. It shall try to bring out the contradictions with respect to the outcomes of the growth of the Medical Tourism industry by comparing the Indian Medical Tourism industry to the Cuban Medical Tourism industry.

Methodology

The paper has been written using both qualitative as well as quantitative research strategies. The main aspects looked into are-

Firstly, analyzing India's pre-independence and post-independence health sector and comparing it with the post-globalization era.

Secondly, identifying the causes behind the high medical expenditures and looking into its consequences, especially its role in widening the economic disparity in the country.

Thirdly, deep-diving into the concept of medical-tourism and the scope of this industry in a country like India. Analyzing its pros and cons and looking at methods to make the industry more equitable to all.

Status of Healthcare in India at the Time of Independence (1947)

Globalization has had wide ranging impacts on the health sector of India. At first, the paper looks at the condition of this sector at the time of independence. In 1947, when India gained freedom, the health care sector was in shambles. The British administration had taken no interest in the development of healthcare facilities in India. There had been no input from Indians too and the system was plagued by poor governance, red tapism and inadequate planning. This sorry state of affairs continued even after independence as the leaders failed to establish the link between health and development. The absence of a strong political support and proper funding led to the overshadowing of the public healthcare sector by the private healthcare providers, despite the fact that at the time of independence, around 90% of the sector was under the control of the government. The sector still remained largely unregulated and uncontrolled.

1991 Crisis and the Implementation of Neo-Liberal Policies

In 1991, India faced a severe economic crisis. The government was not able to make repayments on its borrowings from abroad; foreign exchange reserves, which we generally maintain to import petroleum and other important items, dropped to levels that were not sufficient for even a fortnight. The crisis was further worsened by rising prices of essential goods. India approached the International Bank for Reconstruction and Development (IBRD), popularly known as World Bank and the International Monetary Fund (IMF), and received $7 billion as loan to manage the crisis. For availing the loan, these international agencies asked India to liberalize and open up the economy by removing the restrictions on the private sector, reduce the role of the government in many areas and remove trade restrictions between India and other countries. India agreed to the conditionalities of the World Bank and International Monetary Fund and announced the New Economic Policy (NEP),1991. The NEP consisted of wide-ranging economic reforms.

One of the major effects of the NEP was the privatization of the health sector. This push towards privatization was further driven by several measures such as decentralization, user fees and state withdrawal from public services, measures put forward by the World Bank's 1987 World Development Report (WDR). This report called for states to divest from the public owned

enterprises such as hospitals in order to increase their efficiency and profitability. Following this, the Indian government began to decrease its grants to states, with these dropping from 19.9% to 3.3% in the period 1984-1993.

Due to the globalization and the implementation of neo-liberal policies, particularly privatization, there has certainly been improvement in the demographic health indicators. The table below illustrates this information.

	2001	2005	2010	2015	2017
BIRTH RATE (PER 1,000 POPULATION)	25.4	23.8	22.1	20.8	20.2
DEATH RATE (PER 1,000 POPULATION)	8.4	7.6	7.2	6.5	6.3
FERTILITY RATE (PER WOMAN)	3.1	2.9	2.5	2.3	2.2
MATERNAL MORTALITY RATE (PER 1,00,000 LIVE BIRTHS)	301	254	178	130	122
INFANT MORTALITY RATE (PER 1,000 LIVE BIRTHS)	66	58	47	37	33
LIFE EXPECTANCY AT BIRTH	63.4	65	67	69	69

Source: SRS, Registrar General and Census Commissioner, India

The above table depicts the improvement in the demographic indicators.

1. The reducing birth rate and death rate indicate better health care facilities and family planning.

2. The fertility rate per woman has gone down from 3.1 in 2001 to 2.2 in 2017.

3. Maternal mortality rate i.e. the number of maternal deaths due to complications in pregnancy or childbirth has gone down from 301 to 122 per 1,00,00 live births.

4. Infant mortality rate depicts the number of children who die before attaining the age of 1. This indicator too has gone down from 66 to 33 per 1,000 live births.

5. Lastly, the life expectancy at birth i.e. the number of years the person is

expected to live has gone up from 63.4 years to 69 years. All of these parameters have shown improvement which can be attributed to the betterment and expansion of healthcare facilities.

India's Three-Tier Healthcare Structure

Before going further, it is important to know about the three-tier healthcare system in India. (nhm.gov.in)

Tier 1: Primary Health Centres (PHCs), Community Health Centres (CHCs) And Sub Centres

These are small hospitals and healthcare centres set up mostly in small towns and rural areas, and are managed by a single doctor and an Auxiliary Nursing Midwife (ANM). These centres focus mainly on educating people on issues relating to healthcare, and provide immunization facilities against infectious diseases. Here, preliminary treatment is offered to patients within manageable limits.

Tier 2: Secondary Healthcare Institutions

These institutions are upgraded (compared to PHCs) and have facilities for surgery, electrocardiogram (ECG) and X-Rays. They are located in big towns and district headquarters.

Tier 3- Tertiary Healthcare Centres

These are high end and fully equipped medical centres, offering specialised medical facilities. The tertiary sector also includes educational and research centres such as All India Institute of Medical Sciences (AIIMS), Delhi and Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh.

Now, we can observe the following table. Here we can see how over a period of 60 years (1951-2011), India has been able to improve the overall situation of its health sector.

ITEMS	1951	2011
1. Medical Colleges	28	321
2. Dispensaries and Hospitals	9,209	35,071
3. Community Health Centres(CHCs), Primary Health Centres(PHCs) and Sub Centres	725	1,75,277
4. Number of beds per 10,000 population	3.2	4.2
5. Doctors	61,840	8,16,629
6. Nurses	18,054	17,02,555

Source: Economic Survey 2011-12 and India 2012 (EPW Research Foundation)

Here it can be seen that,

1. The number of hospitals rose from around 9,200 to approximately 35,000.

2. The number of doctors in the country rose exponentially from 61,840 to 8,16,629

3. The number of CHCs, PHCs and Sub Centres have risen exponentially from 725 to 1,75,277.

Despite the fact that the overall figures have improved manifolds, it must be noted that the mere availability of health care services does not guarantee a healthy population. Let us now look at some of the statistics. About 70% of the Indian Population lives in the rural areas while just about 20% of the country's hospital beds are located there. About 12% of the people living in rural areas who don't seek medical treatment despite their health conditions state a lack of access to these services as the main cause.

Out-Of-Pocket Expenditures and the Concept of User Fees

Apart from the lack of access due to the shortage of facilities in rural lands, another major factor that prevents equitable accessibility to health care is the exorbitant charges of private hospitals and dispensaries. That leaves the poor with only the public funded hospitals which often lack basic infrastructure

and health care facilities. A study conducted in 2010 (The Lancet) found out that around 60 million Indians (approximately 23% of the population) fell below the poverty line due to out-of-pocket expenditures related to health care. Out-of-pocket expenditure basically means the user fees, the medicine prices and the transportation costs. Apart from this, the time that they are unable to work further lowers their income. In fact, the user fees that hospitals charge is a matter of growing concern. The share of out-of-pocket expenditure has been increasing and now stands at approximately 80% of the total health expenditure.

The introduction of user fees can be traced back to the 1987 World Development Report given by the World Bank which had suggested the charging of user fees to replace state-funding in a bid to further its objective to increase the efficiency and profitability of states by asking them to divest from government-owned entities. The reasons that were given in support of charging of user fees, by the report, were as follows:

- Payment for services will discourage unnecessary and frivolous use of healthcare facilities

- By making payments, consumers will become conscious of quality and demand it

- The greater availability of funds through user fees at the point of service will increase both the availability and quality of such services.

However, the charge of such fees has a major detrimental impact on the poor's access to medical care in a country like India where around 60% of the population (812 million people) live below the poverty line. The major victims of such abnormally high charges are those who lack any kind of health insurance and are thereby forced to sell their assets and incur heavy debts. Globalization has, in a way, fostered a consumerist culture and the medical industry is sustained by this culture. It serves only a certain section of the population that can pay the rates charged by the high-end private hospitals.

In 1993, the World Development Report recommended that "government policy has a role in providing information and incentives to improve allocation of resources by the private sector". Following this, the Indian

Government introduced allocations, favorable tax policies, decreased import levies and personnel training to encourage the private sector to invest in the health sector. However, to improve the allocation issue, it laid down the condition that private hospitals and nursing homes need to set aside some percentage of their beds for treating the poor, free of cost. However, the major issue with this was that it was left to the hospitals to decide for themselves who they considered poor enough to be treated for free. The Indian government had granted access to subsidized land to nearly 40 private hospitals out of which around 10 hospitals did not treat the poor for free. The Supreme Court of India gave the ruling in 2018 that the private hospitals which have received subsidized land from the Government needed to allocate 25% of their Out Patient Department (OPD) facilities and 10% of their In-Patient Department (IPD) facilities for the poor. However, another ruling in 2014 was in favor of the private hospitals and prevented them from such allocation. The major culprit for this unsystematic approach towards equitable health care allocation remains the poor governance on this issue. The government is yet to take a firm stand on this as its decision is governed on numerous factors. One such factor is Medical Tourism.

A Detailed Description of Medical Tourism and Its Effects on The Indian Economy

Medical Tourism is defined by the Oxford Dictionary (2012) as 'travelling to a foreign country to receive medical treatment'. Despite the fact that the privatization of the health sector in India has been instrumental in deepening the inequality between the rich and the poor, it has certainly been able to attract Foreign Direct Investment (FDI), particularly from Non-Resident Indians (NRIs) due to its exponential growth rate. In 2011 the value of the medical tourism industry was about $1.9 billion which was expected to shoot up to $9 billion by 2020 with a growth rate of 200%. However, the actual value of this industry in India in 2020 was around $6 billion. As per a report by the Federation of Indian Chamber of Commerce and Industry (FICCI) titled 'India: Building Best Practices in Healthcare Services Globally 2019', the rising costs of health care in developed countries such as the US and the UK can certainly make India an affordable alternative in the years to come. The report also noted that the country is one of the preferred destinations for Medical Value Travel (MVT) as it occupies the 5th position among 41 major medical tourism

destinations, as per Medical Tourism Index Overall ranking, 2016. The phenomenal growth rate of this industry can be attributed to the well-trained English-speaking medical staff, state-of-the-art medical facilities and attractive prices of medical interventions. It is estimated that the medical tourism industry has the potential to grow to represent 25% of India's GDP.

The main factor that attracts foreign tourists as pointed out by the 2019 report is the affordable pricing of medical intervention in comparison to the rest of the world. The following table depicts the cost of various medical procedures in different countries that are also among the most preferred countries among medical tourists. It can be noted that India has the lowest cost in 13 out of 19 procedures. (The lowest prices have been highlighted)

COSTS OF MEDICAL TOURISM (IN USD)

	INDIA	THAILAND	MALAYSIA	SINGAPORE	TURKEY	S. KOREA
HEART BYPASS	7900	15000	12100	17200	13900	26000
ANGIOPLASTY	5700	4200	8000	13400	4800	17700
HEART VALVE REPLACEMENT	9500	17200	13500	16900	17200	39900
HIP REPLACEMENT	7200	17000	8000	13900	13900	21000
HIP RESURFACING	9700	13500	12500	16350	10100	19500
KNEE REPLACEMENT	6600	14000	7700	16000	10400	17500
SPINAL FUSION	10300	9500	6000	12800	16800	16900
DENTAL IMPLANT	900	1720	1500	2700	1100	1350
LAP BAND	7300	11500	8150	9200	8600	10200
GASTRIC SLEEVE	6000	9900	8400	11500	12900	9950
GASTRIC BYPASS	7000	16800	9900	13700	13800	10900
HYSTERECTOMY	3200	3650	4200	10400	7000	10400

	INDIA	THAILAND	MALAYSIA	SINGAPORE	TURKEY	S. KOREA
BREAST IMPLANTS	3000	3500	3800	8400	4500	3800
RHINOPLASTY	2400	3300	2200	2200	3100	3980
RHYTIDECTOMY	3500	3950	3550	440	6700	6000
LIPOSUCTION	2800	2500	2500	2900	3000	2900
ABDOMINOPLASTY	3500	5300	3900	4650	4000	5000
LASIK (BOTH EYES)	1000	2310	3450	3800	1700	1700
IVF TREATMENT	2500	4100	6900	14900	5200	7900

Source: Medical Tourism Association, 2019

As can be seen here, the cost difference is huge. An open-heart surgery costs up to $70,000 in Britain and $1,50,000 in the US; in India's best hospitals it could cost between $3,000 and $10,000. Knee surgery costs $7,700 in India whereas in Britain it costs up to $16,950. Dental, eye and cosmetic surgeries in western countries cost 3-4 times as much as in India.

Medical travelers visiting India for healthcare can save more than 50% of the cost that they would have spent had they travelled to any of the developed western countries without compromising on the quality of care. The fact that the cost of living in India is 66.54% lower than in the US and the average rent in India is 85.47% lower than in the US is also a major attraction for medical travelers who have to stay for a longer period of time both before and after their treatment. Another factor that attracts foreign patients to India is the zero-waiting time. In countries such as the US and UK, a bypass surgery or a planned angioplasty may take place after around 6 months but in India, the facilities are so vast and expansive, that any surgery/ cancer-treatment/ joint replacement etc. can take place immediately with zero waiting time. Quick and immediate attention is provided to the patients.

The Government too has been very supportive of this industry right from the beginning. In the National Health Policy of 2002, the Government announced that:

"..to capitalize on the comparative cost advantage enjoyed by domestic

health facilities in the secondary and tertiary sector, the policy will encourage the supply of services to patients of foreign origin on payment. The rendering of such services on payment in foreign exchange will be treated as 'deemed exports' and will be made eligible for all fiscal incentives extended to export earnings.."

Apart from this, the visa application process is being further simplified by the government to attract medical tourists. A new category of visas aimed specifically for those intending to travel to India for medical purposes (M visas) and for their spouses (MX visas) have been rolled out. The medical tourists also get a package deal that includes flights, hotels, treatment and often, a postoperative vacation.

The booming industry of medical tourism has helped retain well-qualified medical personnel in the country. This is known as 'brain-regain' and is helping to counter the 'brain-drain' that had negatively impacted India's growth rate since decades. However, at the same time there has been the phenomenon of 'internal brain-drain' where there has been a substantial shift of medical personnel from Government hospitals to private hospitals that offer treatment to foreign tourists. The attractive salaries in such hospitals lures well-qualified medical practitioners. Also, they get a chance to specialize and rise higher which is not that easy in Government hospitals. Well- qualified medical professionals who have graduated from esteemed public institutions for a very nominal fee go on to serve private hospitals. This phenomenon of internal brain-drain again deprives the poor in the rural areas from the chance of getting treated by good doctors as they are unable to afford the private hospitals.

The revenue that the country is able to generate from the medical tourism industry reflects its high potential and a promising future. However, a major flip side is the fact that the revenue generated is not being used in the betterment of the public health facilities. Corporate hospitals do not conform to the government's conditions for granting subsidies by refusing to treat the poor for free and have gotten away scot-free. The extra revenue from medical tourism could benefit healthcare in India if allocated appropriately. Instead, the medical tourism industry is being provided tax concessions; the government gives private hospitals treating foreign patients benefits such as

lower import duties and an increased rate of depreciation (25-40%) for life-saving medical equipment. Thus, the price advantage of the medical tourism industry is paid for by the Indian tax payers who receive nothing in return. This was, quite aptly, reflected by the Indian government's Public Accounts Committee which had said that-

"What started with a grand idea of benefiting the poor turned out to be a hunting ground for the rich in the garb of public charitable institutions."

Contrast Example of Cuban Medical Tourism Industry

To illustrate this point, we can look at a contrast example of the Cuban medical tourism industry. Cuba has been a pioneer in the healthcare industry for almost 4 decades now. It has hospitals for residents and others for foreigners and diplomats. Both kinds of hospitals are run by the government. Cubans receive free healthcare while tourists have to pay for it. Hospitals equipped with top quality medical equipment, highly proficient doctors, nurses and other medical staff, abundant sunlight, well organized healthcare departments and heartfelt hospitality, all add up to the growth of the Cuban Medical Tourism industry. The prices of the treatment are around 80% lower than those in the US. Despite this, the country is able to earn around $11 billion for its services per year. Apart from the medical treatment it provides to foreign patients, it also earns money from contracts that it has with other countries wherein the Cuban government sends doctors to other countries to work there and in return the governments of these countries pay the Cuban government for the doctors' efforts. Some countries like Venezuela, where Cuba sends its doctors, pay in terms of oil in place of money which again is beneficial to Cuba. The Cuban government has thus tried to generate income and then plough it back to benefit its country's citizens. Alongside all this, it has been able to achieve remarkable numbers in the demographic indicators. Its life expectancy is around 77 for men and 81 for women which is among the best in the world. It also has the lowest infant mortality rates in the world with a 100% vaccination rate. This shows that the Cuban government has ensured that the growth of the medical tourism industry does not lead to class inequalities among its own population. Its policies have paved the way for a holistic development of the health sector.

In contrast, it is not that the Indian Government has not formulated policies or laid down plans of action but it is due to the extreme negligence in implementation of these plans and policies that the health sector is largely unregulated and is further widening the economic disparities in the population. It is important that the Government now steps in and ensures that the privatization of the health sector along with the booming of the medical tourism industry does not conflict with every person's basic right given by the World Health Organization "...The enjoyment of the highest attainable standards of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social conditions..."

CONCLUSION

From the above discussion, we can draw the following conclusions -

Firstly, the condition of our health sector was quite poor at the time of independence and it didn't quite improve until the 1991 crisis and the consequent adoption of neo-liberal policies.

Secondly, although the post-globalization and post-privatization era led to the overall betterment of the health indicators, yet the availability and accessibility to equitable health care remained an issue.

Thirdly, the medical tourism industry, which has a great scope in India, has helped generate huge revenues, most of which has been re-invested for its further development. This has further exacerbated the rich-poor divide, denying the lower strata of the country the benefits of improved health infrastructure.

Thus, as a nation it is important that efforts to improve the medical tourism industry are made but at the same time it is ensured that there are adequate, well-maintained hospitals and nursing-homes in rural areas too.

Incentives like subsidized lands, lower taxes and free electricity can be provided by the government to the private sector to set up health institutions on the rural lands and provide free treatment to the poor. Also, the hospitals which take benefits of these incentives must adhere to the conditions of the

government regarding free or subsidized treatment to the poor and there should be stringent penalties for non-conformity.

The government should also invest in improving the current standards of the public run healthcare institutions and set up more such institutions so that the fruits of the economic growth can be enjoyed equitably by all.

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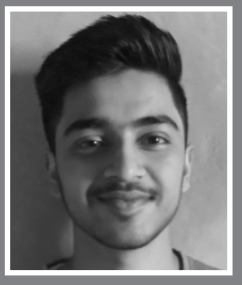
Will America Sustain The Wave of Automation?



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ABSTRACT

Artificial Intelligence is at its peak and it's growing day by day. The expansion of AI and Robotics has reached in each and every profession and AI has taken those jobs which were previously considered uncomputerizable. The paper takes you through historical references of automation and how the transition took place at that time. The effect of the CoronaVirus pandemic on Business automation and how it will shape the future of jobs is also taken into account. The Critical analysis of The United States on ARI (Automation Readiness Index) tests the capability of preparing its workforce for the coming wave of automation. The paper proposes the necessary changes in the Education policy of The US which should be implemented to reduce the job loss of workers.

Keywords: Automation, AI, Education, Labour, Future, Skills.

INTRODUCTION

"Public discussions around unemployment typically focus on weak demand and outsourcing to developing countries, with

limited attention given to structural changes in the economy that result from technological development" (Brynjolfsson & McAfee, 2011). Technological developments are always seen as a staircase for the development of a nation in all sectors i.e. Health sector, Education Sector, etc.

"Artificial Intelligence" (AI) – a term that was first used in 1956 by computer scientist John McCarthy during a conference to discuss if machines could be made intelligent"(Rossi, 2016) Artificial Intelligence defined as Intelligence which gives the capability to machines to imitate human thinking pattern on basis of data entered in it. AI can perform all the hard tasks with greater efficiency with zero error.

The tempting world of automation attracts the attention of all but it comes with a serious threat of unemployment. According to a Deloitte study, 50% of all jobs are potentially open to automation in the coming decades. Does the above statement make you skeptical about your job? Similarly, workers feel when a new machine is brought into use at the workplace. An article published in New York Times had an anecdote about a Kid who wanted to become a soldier in the future and later gets to know from his father that there are high chances that robots may replace humans in the Army profession.

So this anecdote gave me a very critical issue to ponder upon i.e. will a human invention be able to take on humans itself.

History of Jobs occupation Displacement due to Automation

- Luddites:

Humans have long feared automation since it threatens to replace them in unskilled labour with machines. Humans have always reacted negatively to new inventions in the field of automation, according to historical evidence. One such example is the Luddites, a group of people named after Ned Ludd, a weaver from Anstey, England, who was the first to break the weaving machine. The Luddites were a group of people who destroyed textile machines in Nottingham, England in the nineteenth century.. "They protested against manufacturers who used machines in what they called a fraudulent and deceitful manner to get around standard labour practices'' (Connif, 2011). Luddites mostly consisted of the workshop owners who found it

difficult to sell their products at the rate at which factory products were sold. Luddites called it a deceitful manner to get around standard labour practices for manufacturers using machinery as it was not possible to produce the same product at the same cost with few workers in a workshop. " Luddites feared that the time spent learning the skills of their craft would go to waste, as machines would replace their role in the industry" (History, 2015). One of the main reasons why Luddites rebelled against employing machines was because it was their lifetime to learn the weaving talent which was now readily replaced by an unqualified man utilising the manufacturing technology.

- Neo Luddism

"Neo-Luddism or **new Luddism** is a philosophy opposing many forms of modern technology". (E.Jones, 2006). Neo Luddism is an ideology which, due to its technology development, just has a concern of technology and a sense of work insecurity. The automation transition phase has now begun. Many employees anticipate job loss just because their task is easily automatic. Compared with the other two industrializations, agricultural one and the factory one, this shift of profession would not be smoother. The fear of the machine has come again and is the severe, never seen before. Luddism movement is being rapidly reactivated by the automation boom in 21st century. Human beings now can react to technological advances in two ways: firstly, to adapt slowly to the new technology and attempt to enhance the soft skills which cannot be automatically achieved. Governments can also play a major influence by reducing taxes on human labour and raising taxes on machines in the adoption of such technologies. Governments should also concentrate on changing education policies and focus more on vital abilities, such as language skills, critical thinking and analysis.. Training and Vocational Programmes will also be helpful for a smooth transition in other fields. The second way to react to technological progress is by implementing new technologies and seeing people's reactions against them. Suppose we were in 2030 and we knew that employees burn computers and protest against huge firms when they open news. They do this because even after having the best skills conceivable, they are replaced from work. The similar occurred in the 19th century, leading to the Luddites' mass revolution. If required efforts in reaction to technological changes are not performed, then the mass revolution can lead to loss of life and possessions.

- Invention of ATMs

The invention of the ATM (Automated Teller Machines) brought a disaster in the lives of bank tellers in the US. "In the U.S., Dallas-based engineer Donald Wetzel pioneered the development and deployment of the ATM, with the first being installed at the Chemical Bank branch in Rockville Center, New York, in September 1969." (NCR, 2021).In 1970, approximately 300,000 worked as bank tellers in the United States. They had a fear of losing their jobs but something much unexpected happened. "In the United States, tellers held approximately 608,000 jobs in 2006" (US bureau of Labour, 2008) This shocking figure brings a paradox in the situation of how the number of tellers increased in banks despite automation taking place. The answer to this question is that banks found it easy to open new branches because ATMs reduced the number of tellers required in a single bank. In this particular situation, the tellers changed their repetitive work of counting cash to more service-based like promoting sales and customer services. This brings us to the O-Ring principle.

- O-Ring Principle

In 1986, the space transport Challenger detonated and smashed down to Earth under two minutes after take-off. The reason for that crash turned out to be a modest elastic O-ring in the sponsor rocket that had frozen on the Launchpad the prior night and flopped calamitously minutes after departure. In this multibillion-dollar endeavour that straightforward elastic O-ring made the distinction between mission achievement and the catastrophic demise of seven astronauts.An astute analogy for this sad setting is the O-ring creation function named by Harvard market analyst Michael Kremer after the Challenger disaster. The O-ring creation work thinks about the work as a progression of interlocking advances. This principle of O-ring puts emphasis that every single part of the mission is equally important to make the mission successful. This situation shows the positive side of automation that improvement in a single link leads to improvement of every part in the link. If we take the example of Bank tellers from above we can observe that the invention of ATMs brought a change in the whole banking system and also transferred the work of Bank tellers from counting cash to other important activities. This shows that the improvement in a single link(ATM's) improved

the importance of other link Bank tellers in this case.

Major Threat of Artificial Intelligence is Job Loss

"AI is far more dangerous than Nukes'' (Musk, 2018) .This statement shows how artificial intelligence exponentially grows and becomes dangerous for people. In direct and indirect media, AI has reached every element of our life. Robots receive enough of data and the ability to keep the data and deliver outstanding outcomes, because human beings don't possess such quality up until now. In several domains robots have already exceeded humans, with a cluster of data and superior performance efficiency.. "Success in creating effective AI could be the biggest event in the history of our civilization. Or the worst We just don't know. So we cannot know if we will be infinitely helped by AI, or ignored by it and side-lined, or conceivably

destroyed by it." (Hawking, 2017), Elon Musk and Stephen Hawking are one of those people who constantly remind us how much AI is dangerous for the human race. They seem to have been afraid of AI progress because robots do not have general intelligence so far, and if they

can flexibly think, it can lead to difficulties for people as we humans lose the upper hand over robots.

On the contrary, AI developers try to safeguard the threats posed over AI by stating that they will never develop general intelligence in Robots and humans will have sole control over robots." Worrying about evil AI killer robots today is a little bit like worrying about overpopulation over planet mars" (Ng, 2017)Andrew Ng, Computer Scientist, AI developer says that AI still faces image detection problems, one needed and one not. Thinking about evil AI robots that will destroy the earth is far away from today's time and he compares this situation of Evil AI with overpopulation over mars. "AI software will be in direct competition with a lot of people for jobs" (Ng, 2017). According to Andrew Ng, more of concern to him is the social impact of AI, the robots will be in direct competition with humans in many jobs. Therefore many of them have to change their job occupation. The emphasis is more on redesigning the education policy this will help us to face the future crisis of unemployment.

SCOPE OF THE STUDY

THE UNITED STATES OF AMERICA- SAMPLE FOR RESEARCH

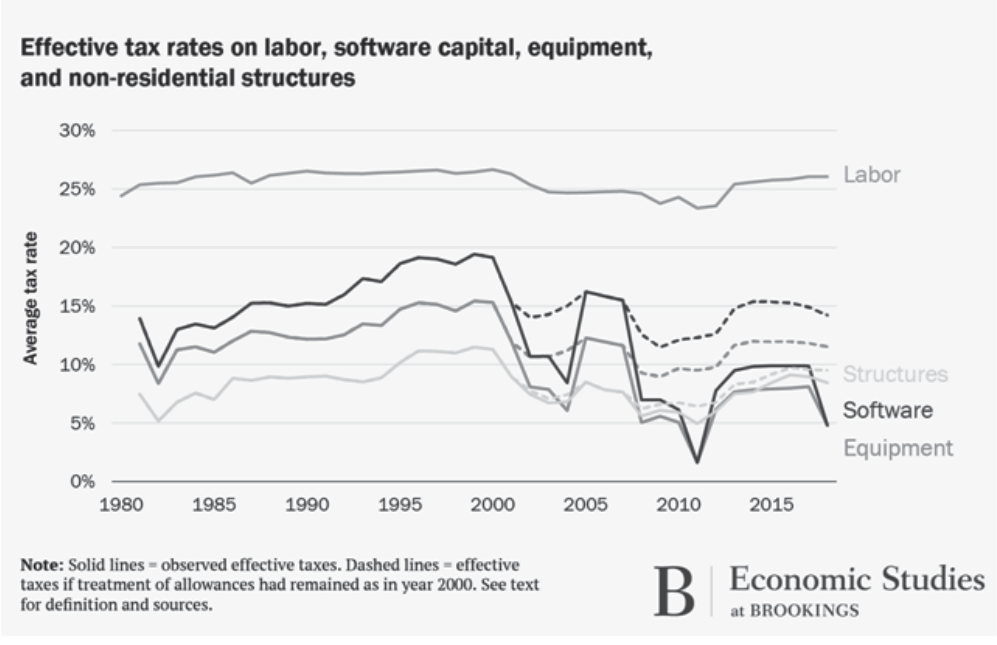
The reason behind choosing the U.S.A as a sample for my research was that The US is the supreme leader in the RPA (Robotics Process Automation). Artificial Intelligence is on a boom in this country for many years which makes it a perfect sample to study automation replacing human labour.

DISCUSSION

U.S.A boosting Automation industry

Tax Structure favouring Automation Industry: The Tax structure of the USA has always been biased and in favour of automation. A heavy Tax rate above 28.5% is implied on companies using labour whereas the tax on equipment is below 15% after 2005.The tax rate has been very low from 1980 for structure, software and Equipment as compared to the tax rate on human labour. These tax rates encourage companies to bring automation into use and neglect human labour. Companies in the USA find it easy to replace human labour with machines as machines are highly productive, efficient and also get the tax benefit. The low tax rate on machines has been acting like a catalyst in transforming the labour-intensive companies into Capital intensive companies. "the effective tax rate on capital invested in equipment and software has declined to about 5 per cent today, largely as a result of favourable depreciation provisions in a series of tax laws enacted from 2002 through 2017 under the George W. Bush, Barack Obama, and Donald Trump administrations" (Daron Acemoglu, 2020). Even the depreciation provision in a series of tax laws have always encouraged companies to automate their work which was earlier done by human labour.

Figure 1: Effective tax rates on labor, software capital, equipment, and non-residential structure

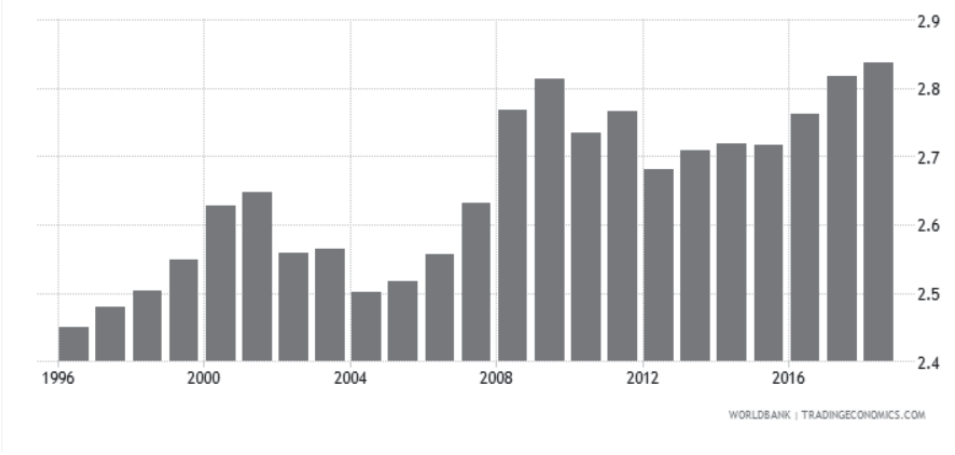


Source: Brookings Institution

"U.S. factories and warehouses acquired more robots last year than ever before--as automation pushes into more corners of the economy and businesses face a tight labour market." (Reuters, 2019), the shipment of robots is increasing at a high rate year after year. According to data provided by Reuters, The shipment of robots in 2018 was 28,478 which was 16% more than the year 2017. These figures exhibit the needs for robots are increasing year after year in the sectors. The booming sectors which have shipped more robots in 2018 include the Food& Consumer goods, Semi conduct& Electronics and the Life sciences sector.

Ever-Increasing Research and Development Expenditure

Figure 2: Research and development expenditure (% of GDP) - United States



Source: The World Bank, 2018

The Government of the US as always invested a significant percentage of GDP (Gross Domestic Product) in Research and Development. The percentage of R&D has increased over the years from 2.45 per cent in 1996 to 2.85 per cent in 2018. According to reports, the expenditure in Research and Development valued at $511.1 billion in 2016. The increasing amounts of investment in R&D indicate that a country is expending more on innovation and research. The US spends a large chunk of the Research and Development budget on AI research to dominate its position in the world. "Looking at overall R&D expenditures by major AI-intensive companies gives a sense of the scale of private investments in AI R&D. The combined 2018 R&D expenditures by U.S. firms Alphabet, IBM, Facebook, Microsoft, and Amazon was $80.5 billion." (Bipartisan Policy, 2020) Private investment has also increased in AI R&D which amounted to $80.5 billion in 2018. This ever-increasing investment in AI Research and Development leads to the innovation of such technologies as chatbots which have the capability of reducing human labour at work. The Big players in the Private Sector like IBM, Google, Facebook, etc have already geared up the use of AI in their companies.

Companies are always looking to reduce their dependence on human labour

for the very simple reason that they want to decrease their expenditure and increase the speed of work by employing machines at work. Thus this gives us an alarm that sooner or later humans will get replaced from the work and they have to look for new occupations.

Business Automation increasing due to COVID-19 :

- Call Center Sector:

The pandemic took a toll on the Call centre sector and forced companies to empty the call centres. Employees were forced to work from remote places and work for home was adopted by many companies. Due to fewer workforces in call centres, the number of inbound calls increased because residents were keen to seek information about coronavirus and related medical information. Seeing this golden opportunity Companies like IBM and Google developed their chat-bots and AI-based voice agents which replied to the problems faced by the people in the initial phase of a pandemic. These voice-based agents were more like Alexa or Siri(Voice agents of Amazon and Apple). "While call centres have long been a frontier of workplace automation, the pandemic has accelerated the process. Organizations under pressure are more willing to try new tools. AI firms keen to take advantage and are sweetening the incentives." (Hao, 2020). The call centres were one of those sectors which were earlier in the phase of transition from human labour to automation but the covid-19 pandemic acted as a catalyst in its transformation. Chatbots developed now are fairly easy to build and are more responsive to user queries and doubts. AI-based voice agents compared to human labour are very economic and cost-effective.

- YouTube using AI post-pandemic

YouTube AI deleted 11 million videos in the 2nd quarter from April to June in 2020. In the early phase of the pandemic due to less human moderators on work, YouTube adopted automation for reviewing and deleting offensive content on the platform. Before the corona virus outbreak, the videos which were marked offensive by the viewers were collected by machine learning

Program and afterwards it was sent to human moderators who were responsible for the assessment. But after the outbreak of the virus YouTube

completely relied on the AI and all the videos got deleted without checking human moderators. "Just 382,000 videos were flagged for removal by users, 167,000 by individual trusted flaggers, 2,220 by NGOs and 25 by government agencies. Three-quarters were removed before they got more than 10 views." (Reichert, 2020). The volume of removed videos was very high and removed videos in the 2nd quarter were double than the videos removed in the 1st quarter.

YouTube, a multibillion-dollar company, The biggest video sharing platform which will never compromise on the quality which it provides to its customers. In the wake of the pandemic, YouTube changed its video reviewing structure from human moderators to Machine learning algorithm completely. YouTube officially accepted that its algorithm for reviewing videos was in some cases inaccurate as compared to human moderators to delete the flagged video. They entirely relied on an algorithm but they had no other option left to choose from. This shows that the Machine learning algorithm which is only designed to collect the reported videos is having the potential to displace human workers from the company. Thus, AI which will be developed in future years will come with a wave of job displacement for both technical and manual jobs.

ANALYSIS

Is the US Education System Enough to Meet the Job Crisis due to Automation?

Automation has been an integral part of our lives since the age of industrialization. Every time the automation took place there has been a shift from one sector to another. The mechanization of agriculture led to the shift from agriculture to the Manufacturing Sector. Less than 1% of the US workforce working on farms is the result of mechanization in agriculture which came in the

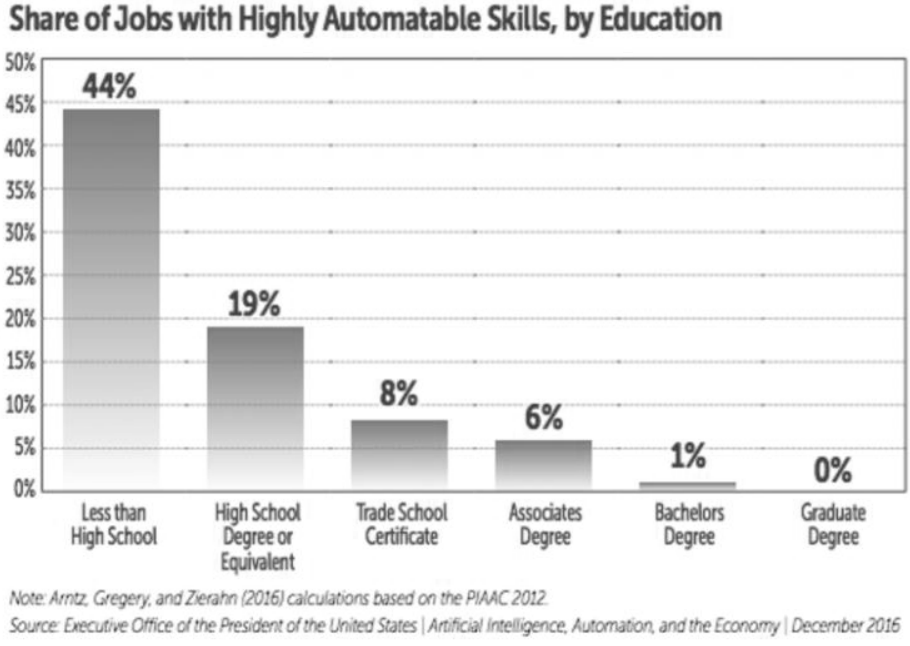
19th century. Later automation came into the industrial sector that led to the shift of the job occupation of the workforce from the industrial sector to the Service sector. Whenever there has been advancement in automation in different sectors there has been a difficult phase of transition which leads to job losses and agitation of people. The change in occupation we will be going

through in the 21st century will depend a lot on the changes that will be adopted in the education system.

- Highly Automatable Skills, By Education

"The group, an advocacy organization dedicated to bringing together schools and businesses, argues that American schools have failed to prepare their charges for the jobs they will need to fill in the future." (Mahnken, 2017) The future belongs to automation and Artificial intelligence thus we have the only choice for us to prepare for it and adapt ourselves to automation

Figure 3: Share of Jobs with Highly Automatable Skills by Education



Source: Executive office of the President of the United States

The graph shows that people working in jobs that require less qualification are prone to the risk of automation. For instance, Jobs like assembling parts of automobiles that require no prior education are 44% to be automated in the coming years. Whereas, Professions like Computer Science engineering which requires a bachelor degree in the field of Computer science has a probability of 1% to be automated. Thus, having a bachelor degree in the field

of study still makes you prone to the risk of job loss in the future. One of the major problems which can be forecasted from this graph is that jobs which are performed by high school degree owners are prone to 19% automation which comprises a large chunk of the workforce of the United States. It also directly demands changes in the high school curriculum. From this study, the US can conclude that if they want to reduce the risk of job loss in the future there have to be certain changes brought in the Education system. An important reason for curriculum change is necessary because a very less fraction of students can gain a graduate degree in the US. Therefore a very small part of the above share of jobs gets assured of the risk of job loss. The changes thus brought will not only help us to reduce the risk of job loss but also open the gate of certain various new jobs that can be taught in steps curriculum in upcoming years.

The boom in automation in future will lead to an increase in jobs that require soft skills like problem-solving which robots cannot easily replicate. Very few countries are bringing changes in their education system which will help them to tackle future uncertainties caused by Automation.

- Automation Readiness Index

"The Automation Readiness Index measures countries' preparedness for the coming wave of intelligent automation The Study included the Countries which are part of G-20 and five other countries which are representing diverse parts of the world. The index provides a snapshot across a set of 25 countries of current government-led efforts to anticipate the resulting changes and shape the outcomes of technological progress". The Automation Readiness Index study is about the difference we would see in the next 20-30 years. It measures policies that promote technological progress, the creation of new businesses, the development of skills and policies that can help manage transitions in the labour market. Policies are grouped in three main categories: innovation environment, education policies and labour market policies." (The Economists, 2018)

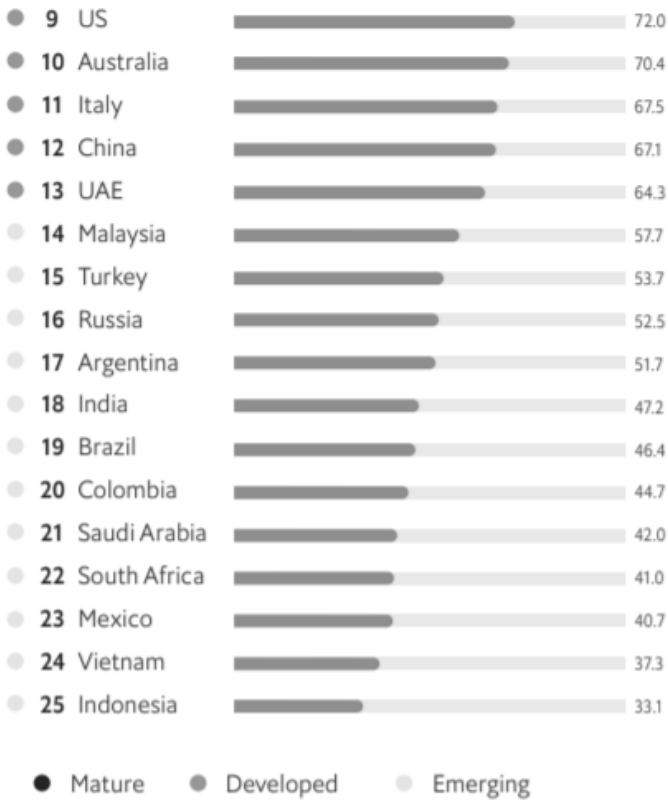
1. Innovation Environment: The category of Innovation environment keeps a check on policies and strategies that countries use to boost research, and the environment (i.e. infrastructure) required to carry out innovation, and steps to

safely adopt the opportunities of Automation. Looking at the statistics Japan leads the individual index of Innovation environment due to whooping total budget allocation for artificial intelligence development in 2017 was approximately US$817m.

2. Education Policy: The upcoming wave of automation requires humans to constantly update their skills and education requirements. This category measures the readiness of the countries in terms of essential changes in educational policies. The results of this index indicate that South Korea dominates the index due to changes brought in educational policies like The implementation of the Character Education Promotion Act 2015 which emphasizes building soft skill, and also Third Basic Plan for Science and Technology Talent Development which provides strategies to boost talent in the field of science and technology in the era of globalization.

3. Labour Market Policies: The automation of works in future will lead to the displacement of workers engaged in automatable work. This category measures the readiness of Countries in terms of policies that increase mobility and flexibility of workers, changes thus implemented will help the smooth transition of workers from one industry to another. This also includes the initiatives which inculcate new skills in workers. South Korea is at the top of this index as it provides subsidies to its jobless workers for vocational education and training

Figure 4: Overall Index Ranks and Scores of ARI



Source: The Economist, 2018

By looking at the index we can say that developed countries or high-income countries have dominated the index. This means that these countries have formulated policies that are capable of facing challenges posed by automation in the coming future. South Korea is the leader of the index and has been number one in all the three segments of the ARI (Automation Readiness Index) i.e innovation environment, education policies and labour market policies.

- Where does the U.S stand in the Education policy category in ARI (Automation Readiness Index)?

The United States is one of the most technologically advanced countries in the world is ranked 9th on the ARI Index. One of the critical indicators in the index is education policy. Countries like South Korea have already started bringing important changes in their education policy to reduce the

uncertainties that will be caused by Automation in future. At the same time, the US remained behind when significant changes to education policy were being brought about."Very few countries are taking the bull by the horns when it comes to adapting education systems for the age of automation," (The Economists, 2018). The question which arises is how can the US take the bull by the horns? Or which key changes should be brought in the education policy to fight the upcoming pandemic that will be caused by automation.

1. Emphasis on Soft skills: Soft skills like communication, critical thinking, analysis, civic thinking are the skills in which Humans have an upper hand over Machines. Even in the future, humans who will possess these skills will not be jobless as these are the key skills that are needed in every field of study. The US education system is still not providing such skills in its high school curriculum. A student needs to become a master of both hard and soft skills in the era of automation to equally stand with machines.

2. More Creators and Innovators: The existing education system focuses more on learning the already existing studies and finding jobs in that domain only. The future demands us to create more innovators and Creative Artists (Musicians, Painters, etc). New Innovations bring more jobs. For Instance, Zomato, The food delivery startup has given employment for both skilled and unskilled labour. A curriculum that promotes innovation and creative activities should be implemented by the US to reduce the uncertainties of jobs that will be in future.

3. Lifelong learning: The Government of the US should promote lifelong learning and should encourage people to update their skills to sustain in the long run. This lifelong learning can be promoted by a programme adopted by the Government of South Korea where they provide subsidies to jobless people to learn vocational training. Such initiatives can help the people of the US to keep a place in the dynamic labour market.

CONCLUSION

The time has come for countries to take strict actions against the boom of automation. The developing countries are also now witnessing the expansion

of automation and are implementing new technologies to increase productivity. There is a high focus on increasing automation in every field but very less on preparing the next generation for the unemployment crisis that will be caused by the wave of automation in the future. The paper is based on the hypothesis that the many jobs including white collar and blue collar will be automated and humans will have to search for new jobs and change their job occupation accordingly. Tracing back the history of automation, the paper gives an overview of how the transition from one occupation to another happens when new technology comes into existence. The advantage we have this time is that we have still some time left for preparation.

The critical analysis of The United States of America on the basis of ARI (Automation Readiness Index) brings the conclusion that the World Leader is itself not ready for the wave of automation that is waiting for it in the future in terms of preparing its workforce. The main loophole is in the educational policy of the country. If necessary changes like building soft skills (critical thinking, language skills, civic thinking), curriculum enhancing lifelong learning are taken into account then the risk of job loss in future can be reduced to an extent.

In addition, the effect of the Corona Virus pandemic is also brought into consideration. The pandemic has accelerated the use of automation in business and gives us a preview of the future. The transition from human labour to Machinery is not far in many industries. Therefore it's an alarm for many countries to look upon their educational policies and do the key changes to sustain their workforce in future.

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Recycling Hoax

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Abstract

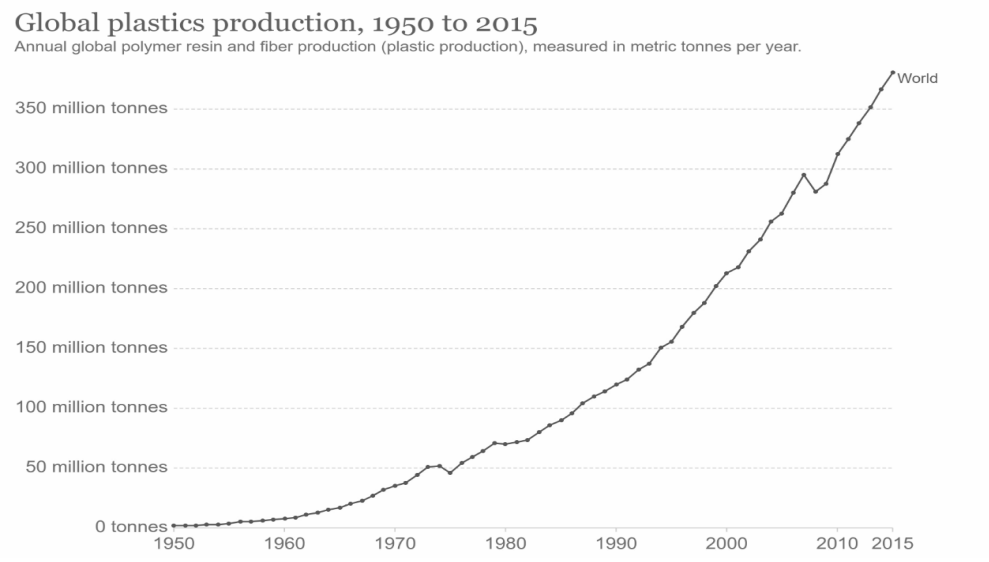
Plastics are the best invention of human history. Plastics are the worst invention of human history. From cars to airplanes, electronics to medical equipment, furniture, and food packaging, plastic permeates every aspect of our lives. Its production skyrocketed – from just 2.3 million tonnes in 1950 to 162 million tonnes in 1993, which more than doubled to 448 million tonnes by 2015, and half of all plastics ever made have been produced since 2005. The sheer volume of plastic has overwhelmed the waste-management systems all across the world, they have simply reached their saturation point. Today, plastic is present on almost every surface of the planet – from the deepest abysses to the highest mountains and remotest islands – causing an unprecedented crisis for wildlife. It is the durability of plastics that makes them an industry choice for packaging but also makes them a nightmare for the planet. They have become infamous for choking, ensnaring, and poisoning everything from plankton to porpoises. A staggering 79% of whatever plastic is produced in the last 50 years has been directly thrown into landfills or open landfills. The question which arises is how did we end up here? This paper is a comprehensive study about how the plastics and petrochemicals industry of the 1970s and 1980s knew that the world was heading into a global waste crisis and remained

quiet and promoted plastics recycling as a solution to this growing problem. In the other half of the paper, we observe a timeline of actions taken by two of the world's biggest economies China and India and see how they have approached their share of this crisis.

Keywords: Recycling, Plastics, False Advertising, Corporate Lobbying.

From cars to airplanes, electronics to medical equipment, furniture, and food packaging, plastic permeates every aspect of our lives. Plastic production skyrocketed – from just 2.3 million tonnes in 1950 to 162 million tonnes in 1993, which more than doubled to 448 million tonnes by 2015 (Parker, 2018) – and half of all plastics ever made have been produced since 2005. The sheer volume of plastic has overwhelmed the waste-management systems all across the world. These were designed to contain it, but with a supply of 300 million tonnes of plastic trash a year, nearly equivalent to the weight of the entire human population (United Nations Environment Program, 2018), they have simply reached their saturation point. Right now, plastic is present on almost every surface of the planet – from the deepest abysses to the highest mountains and remotest islands – causing an unprecedented crisis for wildlife (X. Peng, 2018). It is the durability of plastics that makes them an industry choice for packaging but also makes them a nightmare for the planet. They have become infamous for choking, ensnaring, and poisoning everything from plankton to porpoises. Images of dead whales stuffed with plastic bags, seals garroted by netting, turtles' noses impaled by straws, and huge islands of trash afloat in the open oceans and other plastic detritus are published daily (Changing Markets Foundation, 2020). About 79% of whatever plastic is produced in the last 50 years has been directly thrown into landfills or open landfills (Puskar, 2017).

Figure 1: Global Plastics Production 1950-2015



Today plastic is being produced at a much higher rate than ever before where countries are running out of landfill space to accommodate this increasing waste.

The crisis raises the question of that how did we end up here? Could we predict this crisis coming? And most importantly is there any way out of this? We ponder upon all the three questions bit by bit. This paper is a comprehensive study about how the plastics and petrochemicals industry of the 1970s and 1980s knew that the world was heading into a global waste crisis and remained quiet and promoted plastics recycling as a solution to this growing problem. In the other half of the paper, we observe a timeline of actions taken by two of the world's biggest economies China and India, and see how do they approach this.

1. Methodology

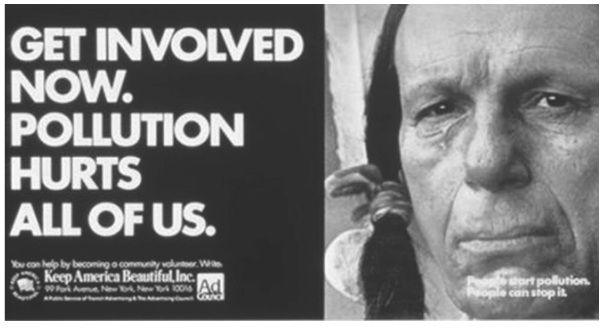
Due to the lack of availability of pure quantitative data this research paper has mainly followed qualitative research backed by pieces of quantitative evidence, whatever was available. This was done to establish cause-and-effect relationships between the various steps taken by the plastics industry, respective governments of the countries studied and their ultimate

repercussions on the planet. An investigative approach was used to study the various stakeholder like the Keeping America Beautiful Inc. and other plastic corporations created formed by various countries. Majority of the paper is based on a timeline where the facts backed by credible and public sources are presented in chronological order to pain a true picture of how the crisis unfolded, and is still unfolding, and what was/is the alleged reaction of the various stakeholders involved. The paper acknowledges the well know plastics crisis that the world is in right now, and presents facts on how did we end up here, how the very bodies which were created to make legislations to stop prevent this crisis failed at its job and how the countries are dealing with the crisis in the 21st century.

2. Accountability Crisis

By 1970, America and its recently founded plastics industry witnessed the first of its find environmental awakening of its citizens. Earth Day protest of April 22nd, 1970 was one of the biggest environmental mass protests in history with nearly 20million protestors on the streets of the United States (Yeo, 2020). It was an awakening of people towards how we live on a finite planet. The protest was also a result of the trend that was happening creating a shift towards a more throwaway, disposable lifestyle introduced after the mainstream use of plastics (Young, 2020).

Figure 2: 1971 Advertisement issued in the public interest by Keeping America Beautiful Inc.



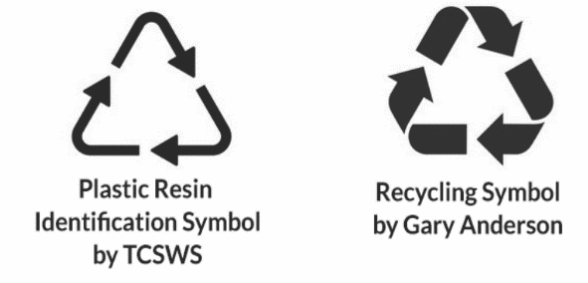
In 1971, Keeping America Beautiful Inc. in response to this new awakening of the consumers came up with their famous crying Indian commercial and

captivated the collective consciences of the viewers (Totterman, 2020). The message: "People start pollution, people can stop it" advocating how it was the people who use the plastics are the ones who start the pollution and at the end of the day have to be the ones who have to stop it. The Industry with this campaign as its face was countering the increased backlash of the plastic problem by simply shifting the blame towards the consumers and on their side kept increasing the production of plastics.

These efforts to change consumer behavior did help in influencing the consumers and clean up the more visible litter. The industry did very little to address the root cause of this problem, the unchecked growth of the plastics industry.

In the 1980s many new plastic industry leaders such as Amoco Chemical Company, Du Pont, Phillips, and about 29 more came together and created The Council for Solid Waste Solutions. The council claimed to be working towards the promotion of the recycling of plastic products. And also towards finding ways to reduce the nations' (USA's) reliance on landfills (Barrett, 2020). The council noticed this new trend in the marketplace that if the product can't be recycled then the public started avoided buying it. As a counter move to this, the industry giants started funding small recycling pilot projects. "The industry attitude was, we'll set this us and get it going, but if the public wants it, they are going to have to pay for it" – Ronald Liesemer, head of Council for Waste Solutions (Young, 2020).

Figure 3: Visual Similarity of The Resin Identification Code and Recycling Symbol



The industry found another way to promote recycling. During that time, the environmentalists all around the USA were angry as there was no way to identify the type of resin used in the plastics. To counter this the industry found a creative way out to this problem and came up with a code to tell them apart. That code was a numbering system placed within the well-known existing recycling symbol; the chasing arrows symbol. This symbol was often even accompanied by texts like "Recyclable" or "100% recyclable". The symbol would give a false picture to the consumers that the packaging is recyclable creating an impression in the general public that the plastic they were buying can be recycled due to its visual similarity to the recycling symbol. Some even believed that the plastics they are buying are already made from recycled plastics. Environmentalists like Coy Smith, Director of the Recycling Program in the city of San Diego started facing a new problem "Customers would bring it in and not only say it has the triangle, they would flat-out say "It says it's recyclable right on it". And I'd be, like, "I can tell you I can't give this away. There's no one that would even take it if I paid for them to take it. That's how unrecyclable it was." (Young, 2020)

There had always been serious doubts about whether recycling could even ever work or not on a large scale. Discussions over these were usually just avoided by the industry. The first serious discussion about the feasibility of recycling as a solution to the growing crisis by the industry professionals was done at the Society of Plastics Industry convention in January 1973. Many leaked documents from this meeting discuss how the industry was aware that the techniques of cleaning and separating mixed plastics in major kinds of resins had not been developed for large-scale application. There were questions that whether recycling could ever be made viable on an economic basis (Taddonio, 2020). Lewis Freeman, the former Vice President of the Society of the Plastics Industry in a 2020 PBS Documentary talks about how the people within the industry were divided, with some being skeptical that recycling could ever even work while the others were hopeful that they should start promoting recycling by investing in small pilot projects now [1980's] and be optimistic that the crisis will resolve over time. Larry Thomas, the head of the society addresses the executives from Exxon, Chevron, Amoco, DuPont, and a few more top plastics producers about how "The image of plastics is deteriorating at an alarming rate," he wrote. "We are approaching a point of no return." He told the executives they needed to act.

The "viability of the industry and the profitability of your company" are at stake in one of the leaked documents uncovered by the Public Broadcasting Service - America(Sullivan, 2020).

By the end of 1974, the plastics industry found itself again in this new crisis with yet another uprising against plastics and was looking for another creative way out of this problem. Freeman says "I remember this is one of those exchanges that sticks with me 35 years later or however long it's been ... and it was what we need to do is ... advertise our way out of it. That was the idea thrown out." (Sullivan, 2020). The industry decided to find its way out by again not addressing the core problem but by simply buying a way out through misleading advertising. Campaigns with taglines such as "Plastics make it possible" or simply showcasing all the wonderful things that plastics brought to us like how you didn't have to care about dropping glass bottles on the kitchen floor now because now they were made from plastics. To an extent, there was nothing wrong with these advertisements as they were just promoting the benefits of plastics. The only alarming trend that could be seen was that the industry had never really answered the question of the recyclability of plastics, or how were the plastics were carefully sorted by the consumers and put into different color bins for 'recycling' being recycled.

In 1995, the American Plastics Council along with Garten Foundation unveiled an automatic state-of-the-art sorting machine in Oregon, USA, the first of its kind all over the world. At the time, costing about $1 million in its erection. "They wanted us to sort plastics when people thought plastics might be starting to be a problem" Will Posegate, Chief Operations Officer, Garten Foundation, "Years later, we shut it down because there was no way to make money at it. And we sold that $1.5 million machine for scrap" (Posegate, 2020).

This unchecked production of plastics with minimum to no efforts towards recycling coupled with an everlasting trend of pushing the blame on consumerism rather than holding the capitalists and capitalism within the industry accountable has covered the world in a layer of trash that now has simply become too thick to ignore. With a cumulative plastic waste amounting to more than 7.8 billion tonnes (as of 2015) – more than one tonne of plastic for every person alive today. With only 19.50% of it ever recorded to

be recycled, it points towards how the methods set up in the early 1980s for recycling, if there were any in the first place, have just completely failed.

3. China and India, the Plastic Leaders

This section of the paper takes a deeper look into two of the world's biggest economies and their approach to the same alarming crisis. We see how one takes one of the harshest international trade decisions while the other is trapped into a spiral of corporate lobbying and still trying to figure out a way out of it.

- China

In 2019, China managed to create about 25% of the total world's waste output, equating to 81.1 million tons of waste (Statista, 2020).

Till 2018, China was the trashcan of the world. In 2017, 95% of the plastics collected in the whole European Union (Katz, 2019) and 70% of the total waste collected in the USA (McVeigh, 2018) were shipped to China. This happened due to several reasons.

Table 1: US-China Trade 2017

2017 : U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2017	9,955.5	41,335.6	-31,380.0
February 2017	9,739.8	32,785.0	-23,045.1
March 2017	9,720.2	34,162.0	-24,441.8
April 2017	9,806.5	37,441.9	-27,635.4
May 2017	9,880.0	41,756.8	-31,876.8
June 2017	9,718.2	42,258.1	-32,539.9
July 2017	9,954.1	43,561.1	-33,607.0
August 2017	10,825.5	45,782.3	-34,956.9
September 2017	10,896.0	45,405.1	-34,509.1
October 2017	12,963.2	48,133.1	-35,169.9
November 2017	12,908.4	48,104.8	-35,196.4
December 2017	13,629.9	44,439.4	-30,809.5
TOTAL 2017	**129,997.2**	**505,165.1**	**-375,167.9**

NOTE: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Table reflects only those months for which there was trade.

(United States Census Bureau, 2017)

Firstly, as can be seen in the table above due to a significant trade deficit with the developed nations. America being the world's biggest economy spends

much more than any country in the world to fuel its ever-growing demand. This when put against the second-biggest economy China, also known as the world's factory (Gifford, 2020) opens up room for a relationship where countries like America and other western countries buy much more from China than China ever does from them. This puts a significant strain on the shipping industries where loaded ships regularly leave from Chinese ports but have to come back empty. This creates a trade deficit towards China in countries like the USA (Office of the United States Trade Representative, 2019) and other European superpowers. So, in such a situation it becomes very easy for Americans and other Western Countries to ship their waste to China for next to nothing as compared to what it will cost them to recycle it in their inhouse facilities.

Another reason why China accepted this unsorted waste was that China has always needed resources to fuel its industries. With the availability of quite literally the world's largest labor force standing at around 811.04 million (Textor, 2021) and with one of the cheapest and most exploited labor. A huge number of private companies specialized in handling and sorting this imported waste came up in the last two decades. Anything which could be of value was scavenged from this trash, brought down to its simplest form by processes like refining and melting, then just transported to some other corner of the country where it was in demand. This all was done on a very thin margin of profit, but there was a profit. Whatever was left of this 'valueless trash' was just simply dumped around in the oceans and landfills (Productions, 2020).

For the last couple of decades this system of collecting valueless plastic trash and shipping it to China, which had cheap labor and especially a good demand for this trash, seemed to work well.

However, this system came to an end with a two-page notification sent to the World Trade Organisation's Committee on Technical Barriers to Trade on 18th July 2017 by Chinese state officials. This document simply stated that China, by the end of 2017 China was effectively banning the import of twenty-four products enlisted in the notification via their HS Codes (China, 2017). The list included five notable products that broke the world's recycling these were "Other Waste, Pairings of Polymers of Ethylene", "Of Polymers of Styrene," "Of

Polymers of Vinyl Chloride," "Of Polyethylene Glycol Terephthalate," ", and of Plastics". With the ban on these, they effectively banned almost all plastic imports in the country. As a result, plastic imports in China dropped 99.1% from 2017 to 2018 (Staub, 2019). This massive global industry came to an end overnight.

The explanation that the Chinese government gave for this ban was that this import was proving to be a health hazard. This was true as the healthcare system in China is owned and run by the state. So, ultimately the cost of numerous health complications caused by the enormous imports and constant exposure during activities like sorting and refining, of plastics was being borne by the state itself. This made the government officials realize that this expense on healthcare was much more than the thin margin of profits to which these waste recycling units were contributing. This along with the fact that the world was shifting its focus to China had now started blaming China for trash in the ocean and the miserable heal conditions of its citizens due to its plastics import. The only way out was to ban the imports of plastics, which China ultimately did. This again connects China to a worldwide pattern of the modern-day hoax termed recycling. This ultimately proves that recycling plastics was never a viable option, to begin within the first place. China realized that processing and sorting plastic trash may be beneficial for a company but it is not for a country.

This ban was the end of a whole industry in China, but other nearby countries like Malaysia ever since China banned plastics import tripled its plastics import between 2017 and 2018 (Reed, 2018). However, Malaysia soon realized that what they looked upon as an economic opportunity isn't one, to begin with, and found itself in the same crisis as china. Ultimately Malaysia following China's footsteps banned the majority of its plastics imports (Lee, 2019).

- India

According to the Central Pollution Control Board (CPCB), 60 major Indian cities generate 25,940 tons of plastics, of this around 60% is recycled and the rest, about 9400 tons end us in the environment (Shrivastav, 2019). India's leading plastic industry body, Plastics India Foundation, has estimated annual consumption of 16.5 million tons (2017-2018) of plastics amongst which a

staggering 43% or 7 million tons of this is just single-use plastics that have no recyclability(Banerjee, 2019).

Multi-Layered Packaging (MLP) plays a huge role in the sector. MLP having a variety of plastics, majorly Polyethylene (PE), Polypropylene (PP), Polyvinylchloride (PVC), and PET. This complex mixture of plastics makes MLP cheap and flexible especially for the packaging, thus making MLP the industry's choice. But the very quality that makes MLP good for the industry which is its complex structure also makes it bad for the environment. The complex composition poses a significant challenge in its recycling and disposal. Another significant issue with the use of MLP in the Indian markets has been that due to its economic and easy to mass-produce characteristics, the industry has been pushing them into the markets for several decades now (Changing Markets Foundation, 2020). This has been done to a point where the earlier much more environmentally friendly reuse and refill systems have been completely dismantled and abolished from the Indian markets.

Confused Lawmakers and Legislations

The industry giants not only use some rather unconventional methods to exercise their influence on the lawmakers and the law-making process itself but they also seem to use the well-established tactics to distract, delay and derail unfavorable legislation of the plastics industries in the west.

India's first legal action against the plastic problem was implemented in the form of The Plastics Manufacture, Sale and Usage Rules, 1999 by the Ministry of Environment and Forests on 2nd September 1999. This legislation aimed to restrict the growing use of plastic bags and preventing the packing of food in recycled plastics. This was done by limiting the thickness of plastic bags to 20 microns or less(Ministry of Environment and Forests, 1999).

In 2003, the legislature passed in 1999 was amended, and the restriction on the size and thickness of the plastic bags was scraped off effectively promoting the use of plastic bags and now the bags could be thicker thus be more widely used in the markets(Ministry of Environment and Forests, 2003).

With the plastics crisis moving beyond control, the government decided to

take its most ambitious legislation yet aiming at regulating and effectively eliminating the use of multi-layered plastics packaging. This legislation first made its appearance in the first draft of the Plastics (Manufacture, Usage and Waste Management) Rules of 2009. (Ministry of Environment and Forests , 2009).

However, when the final draft of the aforementioned law was brought under the expert committee review in 2011, the clause which restricted multi-layered plastics in the markets was deleted from the draft and the final law (Ministry of Environment and Forests , 2009). This was done following the representation from the Federation of Indian Chambers of Commerce and Industry (FICCI) and the Indian Institute of Packaging (IIP).

The Indian Institute of Packaging though being an autonomous body under the Ministry of Commerce and Industry is still not free from corporate lobbying as it gives out membership to private companies within the country after paying a membership fee. In 2010, its member's list comprised of big FMCG manufacturers such as Hindustan Unilever Ltd., Marico Industries, Saap Packaging Pvt Ltd., and many more.(Indian Institute of Packaging, 2010)

In 2016, the government introduced its next version of laws to continue its "battle" against the rising plastic crisis in the country. The Plastic Waste Management (PWM) Rules, 2016 were introduced as a replacement of the existing Plastic Waste (Management & Handling) Rules, 2011. The main focus of this new legislature was its emphasis on identifying the responsibility and accountability of the manufactures. This was accompanied by an ambitious deadline to phase out all multi-layered packaging from the market by 2018. The main phrase of the law being clause 9(3) which stated; "*manufacture and use of non-recyclable multi-layered plastic if any should be phased out in two years*". (Ministry of Environment, Forest and Climate Change, 2016)

However, the pattern of opposing the legislation as done with the previous iterations of the same law continued. This time, due to the intense and effective lobbying by the bodies such as the All India Plastic Manufacturers Association (AIPMA) and the PET Packaging Association for Clean Environment (PACE), the Plastic Waste Management (Amendment) Rules, 2018 were brought into effect. This amendment effectively changed clause

9(3) to "*non-recyclable multi-layered plastic if any' with 'multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use"* rendering the previously passed legislation to stop the use of MLP incompetent in doing so.

Another key feature of the PWM Rules of 2016 was that it empowered the state governments and the local bodies that now they could initiate a ban on plastics in their respective boundaries. Since then, several states have passed a partial or complete ban on plastics. Amongst these states the state of Maharashtra passed one of the most comprehensive bans on plastic items, banning items like PET bottles of less than 200ml capacity, plastic bags, and also initiated a buyback culture as an extended producer responsibility (EPR) for thermocol used for wrapping (Departement of Environment Govt. of Maharashtra, 2019).

In March 2019, at the 4th session of the UN Environment Assembly in Nairobi, Indian again initiated an ambitious resolution to phase out single-use plastics from the environment by 2025, and a ban on single-use plastics by 2022 (Ministry of Environment, Forest and Climate Change, 2019). Both these announcements were diluted due to economic and political complications (Koshy, 2019).

The key takeaway from this long chain of efforts to ban MLP by the government and then constant amendments made to these laws by the autonomous bodies which are directly influenced by the main stakeholders that are the plastic producers of the country, is that at this point an average consumer may even start to question the lawmakers itself. That whether these laws were actually ever created to fight the plastics crisis in the first place or these were just created to win the confidence of the more environmentally woke general public in the short term before being amended and bringing back everything to what it was before these environmental laws.

CONCLUSION

The paper concludes by proving the topic statement highlighted in the introduction which is to show that plastic recycling was never a viable

solution to the plastic crisis. Evidence as to how plastics recycling can never work can be seen throughout this paper whether it is the leaked documents, miss-directed marketing, or lack of confidence in the leaders of the very corporations created to control the plastics pollution. We see the approaches of two of the biggest economies of the world towards this crisis, discovering how one country found itself in a position where the cost of this waste becomes more than the profit of recycling it, while the other one still seems to be lost in methods to fight this crisis.

We find out how the whole plastics industry saw this crisis coming decades ago but still choose the direction of the capitalists and not the environmentalists and thus putting the production of this very poison that is killing our planet today, upfront.

The timelines presented in the paper prove how the crisis didn't happen overnight rather had almost half a century in its making and becoming one of the most alarming global crises.

Maybe far far ahead in the future after our civilization has collapsed, and maybe one after it has collapsed too and some then interstellar archaeologists dig up the earth and just find this layer of microplastics covering the whole planet. Chocking the literal life out of it and just wondering in awe that was it the attack of some other sentient being or is it just that it was our civilization that has brought us to our doom. Today plastics are a growing global crisis and the world needs to find a way out of it before we find ourselves covered in it.

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The Role of Corporate Social Responsibility towards Sustainable Education with reference to the FMCG companies

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ABSTRACT

The economic success of developing countries like India is directly proportional to the quality of education. Since Independence, India has improved a lot in the education sector but there is still a need for greater accountability and transparency with the increased role of schools and colleges to foster the development of children. FMCG companies have become an integral part of our lifestyle as they have a great propulsion on the lifestyle of Indian citizens. This paper is to provide an overview on ingenuity and activities undertaken by FMCG Companies in the education sector. The data has been extracted from the annual reports and CSR policies of various FMCG companies. The study reveals that though education has been the sector of focus of CSR policy of many FMCG companies, there is still

a need for more active actions to achieve the goal of 'Education for all'. Some companies are yet to see CSR as social responsibility rather than legal obligation.

Keywords: CSR, EDUCATION, FMCG, ITC, HUL, P&G, DABUR, NIRMA, MARICO

INTRODUCTION

"I believe that with great wealth comes great responsibility, a responsibility to give back to society and a responsibility to see that those resources are put to work in the best possible way to help those most in need." says Bill Gates, the founder of Microsoft Corporation.

Since the beginning of the 21st century, Corporate Social Responsibility (CSR) has become a matter of concern for the leading companies. Now, it is not only about earning higher profits and sustaining market share; it's also about how to achieve social and sustainable growth through CSR initiatives. Since the business houses are an integral part of society, the government believes that the former also owe something in return to the latter, resources of which they're consuming.

The term Corporate Social Responsibility may be new to India but this term dates back to the Mauryan Empire where many dialecticians like Kautilya and Chanakya emphasised on the need of creating shared values and set the business responsibility for business working in the empire. The Indian scriptures also highlight the importance of CSR and mentioned the need of sharing the earnings with the deprived section of the society. CSR has been deeply imbibed in the history of India and always has been a focal point of our rich culture and heritage.

CSR policies are advantageous and important for the company and the society. It helps the company in building brand image and achieving high growth along with fulfilling the needs of the customers and the society. Many companies believe that CSR is the most important part of their brand image and customers tend to get influenced towards those companies which work ethically. They feel emotionally attached to the company as it never fails to take care of the difficulties and needs of the former.

CSR policies add on to the growth of the company in two particular ways; first it helps in maintaining relations with the existing customers and shareholders and also attracts new prospective groups towards the company. CSR policies create a culture of engagement for every worker belonging to any rank.

The Companies Act, 1956 talks about the voluntary obligation of companies regarding CSR initiatives but the Companies Act, 2013 makes a mandatory obligation for certain companies to do CSR activities. Section 135 of The Companies Act, 2013 applies to a company including a foreign company only if it satisfies one or more of the following criterion during the immediately preceding financial year-

Every company covered under the criteria of Section 135 of The Companies Act, 2013 is required to form a Corporate Social Responsibility Committee of the Board (CSR COMMITTEE). The Board shall ensure that the initiatives included by a company in its CSR Policy fall within the scope of the activities included in schedule VII. These activities are related to:

Sr. No.	**CSR ACTIVITIES**
1	Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government for socio-economic development providing relief and welfare of the Scheduled Castes, the Scheduled and backward classes, minorities and women
2	Training to stimulate rural sports, nationally recognized sports, Paralympic sports and Olympic sports
3	Protection of national heritage, art and culture including restoration of buildings and sites of historical importance and works of art; setting up public libraries; promotion and development of traditional arts and handicraft
4	Safeguarding environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agroforestry, conservation of natural resources and maintaining a quality of soil, air and water which also includes a contribution for rejuvenation of river Ganga
5	Introducing the measures for reducing inequalities faced by socially and economically backward groups

6	Abolishing poverty, malnourishment and hunger, improvising health care which includes preventive health care and sanitation and making available safe drinking water
7	Improvement in education which includes special education and employment strengthening vocation skills among children, women, elderly and the differently-abled and livelihood enhancement projects
8	Improving gender equality, setting up homes and hostels for women and orphans.
9	Contributions or funds provided to technology incubators are approved by the Central Government.
10	Disaster management, including relief, rehabilitation and reconstruction activities
11	Rural development projects
12	Areas for the advantage of skilled armed forces, war widows and their dependent

Source- Corporate Social Responsibility Rules 2014, Schedule VII

As in the above list, we see that education is one of the areas prescribed by the law on which the business houses must focus on. This has been done mainly to achieve the goal of 'Education for all'. No matter what the kind of occupation or activity is, maximum effectiveness with minimal cost can only be achieved with basic education and knowledge. It can indeed be said that in today's scenario, education has become one the areas of strategic importance as there's no use of investing in the growth of other sectors unless we don't have sufficient standardized manpower to manage it.

The Government believes that the corporate sector has the potential as well as the resources to bring in amazing changes and growth in education policies and programmes which in turn will help in the achievement of higher literacy rate for all the sections and groups of children. Equitable distribution of the sources has been one of the major struggles for our country and that is why diverse groups are asked to contribute to bring transparency and efficiency in the system.

Through this study, we have focused on identifying the contribution of

leading FMCG companies in the education sector under their CSR policy. We aim to examine whether the crucial yet poor state of the education sector in our country has managed to attract the attention of big business houses or not. Here, we have analysed the CSR contributions of some of the leading companies of the FMCG sector to conduct our study and derive our conclusion.

LITERATURE REVIEW

CSR has always been a philanthropic activity by companies but with the implementation of Companies Act 2013, the motto behind CSR has been shifted towards community building. The study of Anupam & Ravi **(2012)** and S Vijay Kumar **(2017)** also examined the importance of CSR spending by different Auto Industry and FMCG sectors in context to education, healthcare and environment. The study found that CSR by IT and Auto industry is more focusing on above-mentioned parameters while the FMCG sector has not yet focused too much into social responsibility initiatives.

CSR strengthens a company's relationship with its stakeholders by integrating CSR activities in its day to day operations and creates a brand value for its product. An overview of research study by C Vethirajan & C Ramu **(2019)** was also aimed at scrutinizing the impact of CSR activities by FMCG companies based on the perception of consumers of the FMCG Companies. The analysis revealed that the consumer's perception is based on their social, economic & demographic factors; hence there is inconsistency on the perceived impact of CSR by FMCG companies.

Many companies are actively participating in the CSR by earmarking a certain percentage of their annual profits for CSR activities. The paper by Loknath Mishra **(2020)** tries to examine the relationship between CSR and sustainable development goals (SDG's) and also tries to review the implementation of CSR by Indian Companies since its implementation in the year 2013 by Indian Companies Act 2013. The study shows that the contribution of Indian Companies is generally concentrated on Health, Education and other sectors while every meager amount is diverted towards environment and other SDGs goals. It also reveals that states with larger industry concentration get the highest CSR spending as compared to the states with less concentration of industries. In a research conducted by Vineet Singh **(2016)** also provides an overview about the CSR spending of the FMCG Sector and their impact on the society by analysing more than 5 FMCG Companies. The study provides that

though many FMCG companies have increased their spending on CSR, it is mainly focusing on women empowerment and clean environment and playing a very important role in social welfare.

CSR has changed the dimensions between state, company and society by companies being in the forefront for community development. The research by Parvat R Patel **(2020)** and Abilasha. N & Madhu Tyagi **(2019)** and talks about the changing pattern of CSR expenditure and working on a goal to achieve sustainable education through a successful partnership with NGOs, communities and government and making it a more realisable goal. Corporations are integrating CSR initiatives in their business processes in order to make it more accountable and transparent.

Though there are legal reservations regarding CSR activities, many companies contravene and falsely escalate their CSR expenditure. The study conducted by Ramanna & Narayana Reddy **(2017)** discussed the lack of CSR expenditure by different companies in proportion to their phenomenal growth in their businesses. Still many companies consider CSR as their legal obligation and do not consider it as their social obligation, thus CSR has a long way to progress.

CSR has evolved as a ubiquitous topic in the 21st century as many corporations are exploiting society for their business. In all the research papers stated, one thing in common is that CSR has become a foundation stone for a company's sustainable growth. Through this study, we have focused on CSR initiatives in the education sector by FMCG companies as education is one of the key pillars for a country's growth and tried to analyse the FMCG companies' nudging behaviour for achieving the goal of "Education for All".

RESEARCH OBJECTIVES

- To examine the level, nature and activeness of the various initiatives taken by the leading FMCG companies for the Education sector under the Corporate Social Responsibility policy.

- To identify whether the growing yet struggling education sector is receiving the much required attention from the business houses or not.

RESEARCH METHODOLOGY

In order to study the impact of CSR spending by FMCG Companies on the education sector, six FMCG companies namely ITC, P&G, DABUR, HUL, MARICO and NIRMA have been selected for the detailed analysis of their CSR initiatives in the education sector. The methodology is based on the collection of secondary data through web based research. The data and information regarding CSR policies and programmes of the companies in the context of education has been extracted from the published annual reports and business sustainability reports of various years (from 2017-18 to 2019-20) available on the official websites of respective companies.

ANALYSIS AND RESULT

The study focuses on the CSR policies of some leading FMCG companies and their specific role in the education sector which will further help us in building our conclusion that whether education has been the focus area of leading companies or not. The selected companies for study are ITC, P&G, HUL, DABUR, NIRMA and MARICO.

ITC – The Imperial Tobacco Company Ltd

ITC's allegiance is to create an enduring value for India by investing in the primary education sector and creating the capabilities for tomorrow. ITC's intervention is assigned to the goal of **Sarva Shiksha Abhiyan** which provides access to education for the underprivileged section of the society. ITC's partnership with the education department of Assam, Karnataka, and West Bengal has made a significant impact on the ground by training government school teachers and students through child-friendly pedagogy.

ITC also provides infrastructure support and maintenance to the government schools and anganwadis of Assam, Karnataka, and West Bengal. Its **main goal is to create an attractive and enabling learning environment in a child-friendly manner**. The program undertaken by the ITC strengthens the school management committee to enable them to participate and involve in the maintenance of the school infrastructure facilities by the company. In many schools, operation and maintenance of infrastructure facilities include

– soap stations, clean drinking water facilities, cleanliness of toilets, waste management, and many more.

Along with this, as a part of the ITC's initiative, its Education and Stationery Products brand, Classmate, has launched a unique programme - **Classmate Ideas for India challenge** which has reached to around 25 lakh students across 30 cities, 500 schools and 200 colleges and provides a platform for the youth to express & bring alive their innovative ideas that not only address the multifarious challenges confronting the nation today but also contribute in taking the country to a higher orbit of growth and development.

Table 1 - Actual CSR Expenditure and CSR Expenditure on Education Sector of ITC

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20 (in Cr.)
ACTUAL CSR	290.98	306.95	326.49
CSR IN EDUCATION SECTOR	36.63	40.09	41.8

Fig. 1-Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of ITC

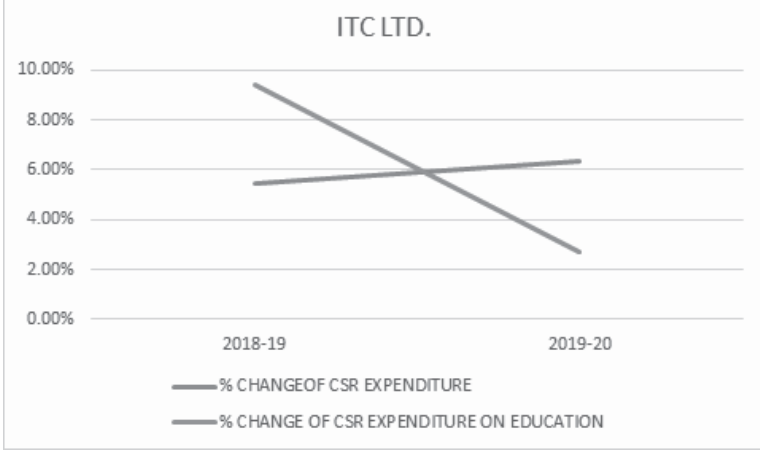

Fig. 1 shows the percentage increase of CSR expenditure on education is more than the percentage increase in the total CSR expenditure for the years

2018-19 and 2019-20 indicating positive outlook of the company towards the education sector.

P&G - Procter & Gamble India Ltd

P&G strives to be a force for good and a force for growth. Since the inception of the company, they have made a bigger impact on the communities by investing in society. In 2005 they launched their flagship CSR program P&G Shiksha intending to provide underprivileged children with access to primary education. Under their program, they mainly focus on improving education infrastructure, empowering marginalized girls through education, and improving learning outcomes. In their journey, they have collaborated with many NGOs by building and supporting more than 1800 schools across India and impacting more than 2 million children and have focused on building and refurbishing school buildings, constructing classrooms, improving sanitation facilities, providing clean drinking facilities & many more by **impacting more than 1700 schools and classrooms** across India.

At P&G they try to empower marginalized girls through education by debunking gender-based barriers and social taboos. They actively organize education boot camps and support government-run **Kasturba Gandhi Balika Vidyalaya** (KGBV) in Rajasthan and Jharkhand to provide quality education to the girls and to impact more than 71000+ girls with a collaboration with more than 350 KGBV.

Though the student enrolment ratio in India has significantly improved, there is a large gap emerging in the learning outcomes. To tackle this problem, P&G is working with its partners to innovate and implement unique solutions to improve the learning outcomes in children. It devised the policy of on-ground remedial training, interventions in early childhood by setting up Pre- Primary Schools and digital remedial training. Implementing the programs across different schools has resulted in an effective double-fold increase in learning outcomes of children with a reach of more than 160000 children.

Table 2 - Actual CSR Expenditure and CSR Expenditure on Education Sector of P&G

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20(in Cr.)
ACTUAL CSR	10.80	12.20	12.74
CSR IN EDUCATION SECTOR	10.57	11.98	12.52

Fig.2 - Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of P&G

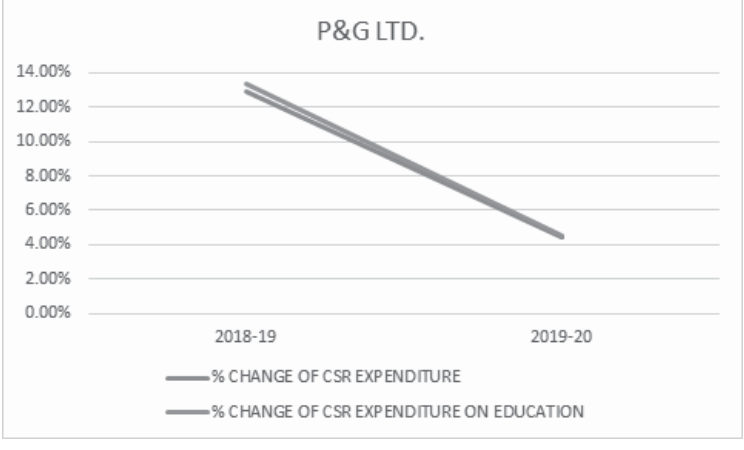

Fig. 2 shows P&G is the only company in which the majority of CSR expenditure is spent on the upliftment of the education sector and the company is raising its CSR expenditure on education in line with the percentage increase of CSR expenditure.

Dabur India Ltd.

The CSR activities of Dabur basically can be reflected from the words of its founder Dr. S K Burman who said "What is that life worth which cannot bring comfort to others". Whilst accomplishing its endeavors of increasing market size and high profits, it not only has maximized the gains of shareholders but also managed to minimize its adverse effects on the environment and society.

Dabur exhibits a clearly stated CSR policy with its vision, mission, the process of implementation, and effects. It works in the areas of environmental

sustainability and the socio-economic development of society. It aims to eradicate hunger, poverty, and malnutrition by providing food, shelter, nutrition, supplement, clothes to the deprived sections of the society and promotes sanitation by making available safe drinking water. It works in promoting health care including preventive health care through awareness programs, health check-ups, etc.

Adding on to this, Dabur works in creating employment and livelihood by **enhancing vocational skills and projects** including tailoring, beautician, beekeeping, food processing and preservation, vermicomposting, and other **Life Skill Training and livelihood enhancement projects**. It also tries to ensure environmental sustainability and ecological balance through plantation drives, promoting alternative energy resources, conservation of biodiversity, and natural resources.

Table 3 - Actual CSR Expenditure and CSR Expenditure on Education Sector of Dabur

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20 (in Cr.)
ACTUAL CSR	23.74	26.35	27.8
CSR IN EDUCATION SECTOR	1.31	3.33	3.08

Fig.3 - Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of Dabur

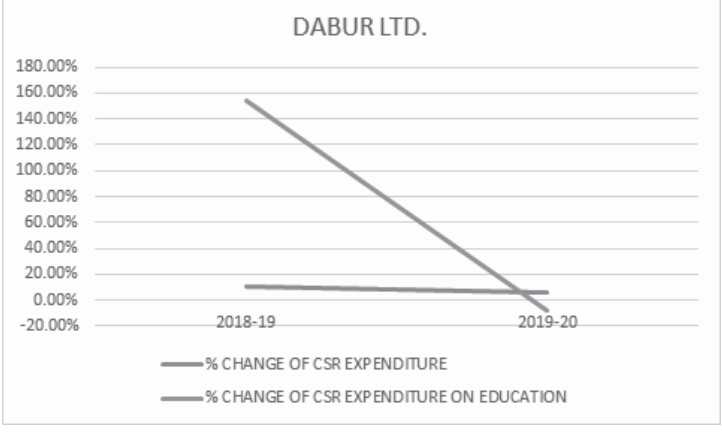

Fig. 3 shows the percentage change in Dabur's CSR expenditure is similar over the years but its percentage change in CSR expenditure on education has fallen exponentially over the three mentioned years.

HUL- Hindustan Unilever Ltd

Hindustan Unilever Limited (HUL) is committed to operate and grow its business in a socially responsible way. In the last 10 years, through the Unilever Sustainable Living Plan (USLP) the company has made a positive impact on the environment and the society. It has always strived to serve the communities through various initiatives.

HUL's CSR Policy is supported by the principle that it is committed to conducting its operations with integrity and respect, in the interest of its stakeholders, and in line with their Code of Business Principles. Instead, its business model is designed to deliver sustainable growth. The company also collaborates and engages with different stakeholders including Governments, NGOs, IGOs, Suppliers, Farmers, and Distributors to tackle the challenges faced by the society. The activeness of CSR policies and programs of HUL over the past few years, **Project Ankur** is specifically designed for providing special **education and vocational training** to the differently-abled children and more than 30% of HUL's CSR contribution goes into this.

Table 4 - Actual CSR Expenditure and CSR Expenditure on Education Sector of HUL

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20 (in Cr.)
ACTUAL CSR	116.09	126.45	143.74
CSR IN EDUCATION SECTOR	42.05	43.68	53.92

Fig.4 - Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of HUL

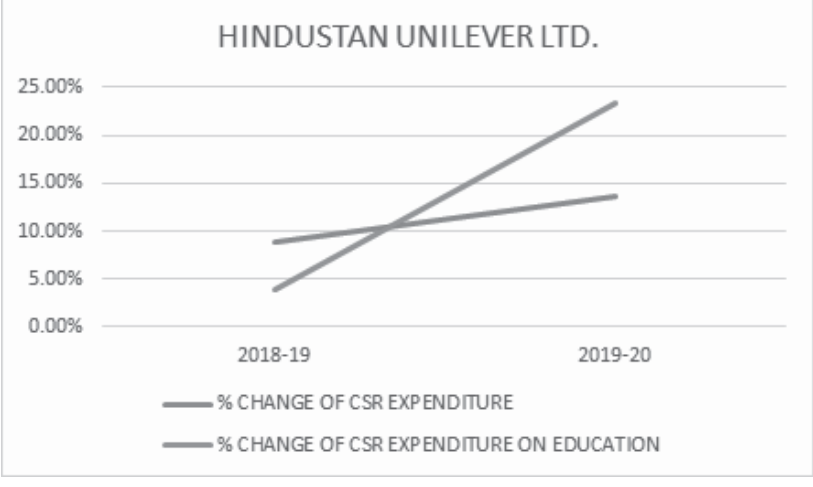

Fig. 4 shows the percentage increase of CSR expenditure on education is increasing at an increasing rate whereas the percentage increase of actual CSR expenditure is increasing at a decreasing rate indicating HUL's active investing in education infrastructure and implementing new schemes and initiatives.

Marico India Ltd

Marico has clearly stated that its purpose is to "Make a Difference" and this purpose is the reason for its existence. It believes that it belongs to an interdependent ecosystem comprising Shareholders, Consumers, Associates, Employees,Government, Environment and Society. It feels that it has the implied commitment to benefit all these stakeholders and it exists to benefit the ecosystem of which it is an integral part.

It believes in the inter-linkage of social and economic values. It states the fact that the firm cannot survive in isolation, it needs the participation and support of the ecosystem and thus the gain must be a win-win situation for all the involved constituents of the ecosystem.

Marico believes that one of the **most significant industries of social progress is education** as it plays a decisive role for a society to achieve self-

sustainable and equitable development. Furthermore, it supports that with an increasing global realization of how the business community can and should contribute to social objectives, education deserves a higher level of corporate involvement. It has established **"Ekal Vidyalayas"** in various parts of the country to promote and support education and training. Along with this, it also provides funds to existing institutions and other assistance like study material, stationery, etc. to the deprived children.

Table 5-Actual CSR Expenditure and CSR Expenditure on Education Sector of Marico

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20 (in Cr.)
ACTUAL CSR	16.52	18.2	18.45
CSR IN EDUCATION SECTOR	10.51	9.54	7.94

Fig.5- Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of Marico

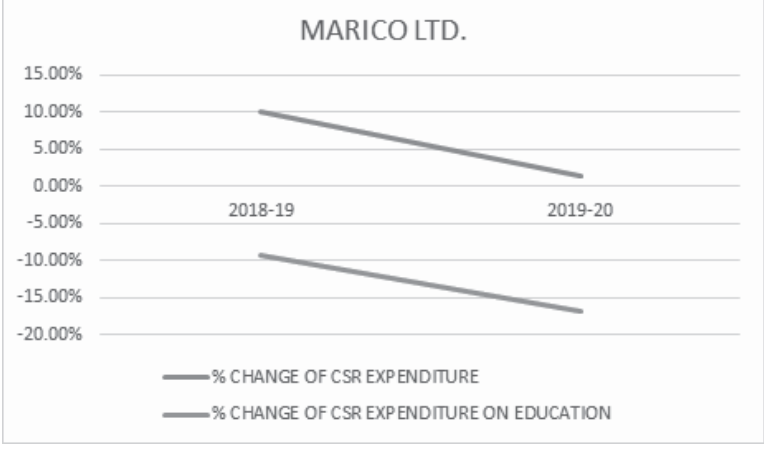

Fig. 5 shows Marico Ltd is negatively inclined towards the education sector despite an increase in percentage change of CSR expenditure the company hasn't increased the CSR expenditure on education sector and it is decreasing year by year.

Nirma

Nirma's mission visualises itself as the socially vibrant and ethically admired corporate citizen and therefore has always been committed to the responsibility of CSR. With the goal of profit maximisation and increasing shareholders wealth they are also acutely aware of the importance of social stewardship. Towards this goal they have an aim to improve and enrich the lives of future generations - the impoverished children of our country through the better network of schools and infrastructure. A major section of Nirma's CSR contributions goes for the betterment of the education sector of the country. It works in **the establishment and management of educational and knowledge enhancement sectors**. It also focuses on providing **financial or any other sort of assistance** (like clothing, study materials, books, tuition facilities) **to the existing campuses** of Nirma University including the state-of-art academic institution such as Institute of Technology, Institute of Law, Institute of management, Institute of pharmaceutical sciences and institute of Diploma Engineering, etc. It also works in funding the academic and sports scholarships to deserving candidates including those from economically disadvantaged backgrounds. The company has also been actively funding technology incubators located within academic institutions which are approved by the Centre Government. Besides education, Nirma also contributes actively in the health and sanitation areas.

So, These are education centred initiatives taken by some of the leading FMCG companies under their CSR policies. We've seen that all the above mentioned companies have worked for education in one or the other way. If one company is focusing majorly on building and establishing more schools then the other is focusing equally on providing financial and other sort of assistance to the students. From the small level research conducted, it's clear that even after CSR being a legal obligation for the corporate sector, many companies have genuinely started considering it as more of a moral and social responsibility.

Table 6 - Actual CSR Expenditure and CSR Expenditure on Education Sector of Nirma

YEAR	2017-18 (in Cr.)	2018-19 (in Cr.)	2019-20 (in Cr.)
ACTUAL CSR	7.66	8.07	9.92 Cr
CSR IN EDUCATION SECTOR	5.9	6.54	7.59

Fig.6 - Percentage change in actual CSR Expenditure and CSR Expenditure on Education Sector of Nirma

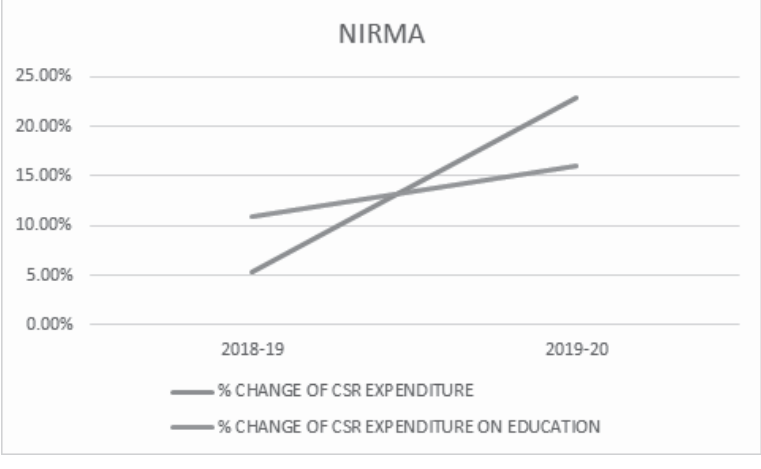

Fig. 6 shows the percentage change in the total CSR expenditure of Nirma is increasing at an increasing rate but the same in its CSR on the Education sector is increasing at a decreasing rate indicating that it hasn't been in proportion to the percentage increase in the overall CSR expenditure.

CONCLUSION

In the small research undertaken with the sole objective of figuring out whether the business houses of the FMCG sector are concerned for the growth of Education facilities in the country or not, we have clearly seen the awareness and contribution of companies in the area of education through their different programmes and initiatives.

The contribution of ITC towards the education policies and programmes has

been continuously rising over the years. It is involved in funding the establishment and infrastructural development of the sector which is shown by its steady increase in CSR expenditure on education sector over the years which surpasses its percentage change in CSR expenditure.

P&G is the only company to spend its majority of funds in the education sector and has launched its own flagship programme 'P&G Shiksha' with the motive of providing education and related facilities to the unprivileged sections of the society.

Dabur has its clear CSR policy stating the mission, vision and implementation process of various initiatives and programmes. It has succeeded in enhancing vocational skills and has provided various Life Skill Training and Livelihood Enhancement Projects.Dabur's CSR expenditure on the education sector is increasing at an increasing rate with respect to the actual CSR expenditure of the company.

HUL, through its strategically designed CSR policy, has initiated various projects from time to time to cater the needs of all the concerned areas. More than 30% of its CSR contributions goes towards Project Shakti, Project Ankur and Technology Business Incubator Program. HUL's interest towards the education sector is shown by its continuous contribution to the education sector out of the actual CSR expenditure.

Marico, with the motto of 'Make a difference', believes that economic growth cannot be achieved without social growth and considers education as the prerequisite for any kind of growth. Despite the increase in CSR expenditure of the company over the years, the company has steadily decreased its CSR expenditure on the education sector.

Under its CSR policy, Nirma has contributed significantly to the education sector by providing financial assistance to already established educational institutions and by also establishing more such schools and universities. It's CSR expenditure on the education sector is continuously rising in alignment to the increase in CSR expenditure.

Considering aforementioned facts and details, it won't be wrong to say that the shift of corporations from being 'profit centric' to 'earning profit while

taking care of social welfare & sustainable growth' is traceable and commendable. The companies have clearly understood that in order to sustain in the market for the long run, business ethics and social responsibilities are to be equally taken care of. The big companies also understand the importance of educated and skilled manpower for their own businesses as it isn't possible for them to achieve what they aim at without an efficient workforce and thus, they have started paying heed to the growing yet poor status of India's education system and it's clearly a win-win situation for all. If we all aim to wholeheartedly focus on the betterment of the country, the days ain't far when our country will once again become the 'golden sparrow, we used to be!

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Covid-19 and Mental Health of Adolescents

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ABSTRACT

The novel coronavirus (Covid-19) pandemic has portrayed alarming results on every adolescent's emotional and social functioning. However, more prospective studies are required to detect the exact magnitude of the impact. The motive of the study is to understand the mental health of the adolescent in COVID-19 pandemic and to determine the diverse factors that influenced their psychological health. This research paper used the narrative approach. The data is collected from various articles, research papers, books and theories as a framework to uncover the global mental distress of pandemics in children. The Covid-19 pandemic took an unprecedented toll on the mental health of adolescents. The fear of contamination, loss of loved ones, lockdowns, grief, domestic violence, no outdoors, no physical activities, overuse of mobile phones, increased internet surfing, scrolling social media feeds, poor economic conditions were the factors influencing the mental health of adolescents. The pandemic resulted in increasing psychological, stress, post-traumatic and anxiety disorders. Pro-active efforts by counsellors at educational institutions and family members are required to support the psychological health and welfare of the youth.

More specific research is required on youth mental disorders during the time of pandemics.

Keywords: Mental Health, Children, Pandemic, COVID-19, Children

In December 2019, a cluster of pneumonia cases was recorded in Wuhan, China. Later on, the World Health Organisation declared the novel coronavirus (COVID-19) outbreak a global pandemic on March 11, 2020, all over the world. As of May 31, 2021, the number of confirmed cases of coronavirus has reached 17 crores. The pandemic- and the social distancing measures that many countries have implemented - have caused disruptions to daily routines (Lee J., 2020). As cases continue to spread across the world, it became clear that the outbreak of the virus didn't only affect the lives of people physically and economically but also mentally.

The way the pandemic took a toll on the psychological health of human beings is no longer an unknown fact. Globally, there are concerns that COVID-19 is already having and will continue to impact the mental health of populations as lockdowns, job losses, overwhelmed health systems, and fear of contracting the virus exacerbate stress and isolation (Smith, 2020). Many types of research and discussions have been done about people's mental health. Generation Z (born 1996-current) reported high rates of anxiety, depression and high levels of worry (Seemiller, 2020). As per a UNESCO report, 87% of students across the world were disturbed due to university closures (Collins, Helen M, 2020). The education and learning of 67.6% of students are impacted globally due to coronavirus in 143 countries (Shah K, 2020). Even population-based studies not directly investigating student mental health found that being a student increased the risk of experiencing mental health issues during the pandemic (Solomou, 2020). The above statistics gave a glance at how badly the pandemic posed an unprecedented threat to the mental health of individuals across the world. Did the Covid-19 outbreak and lockdown heighten the risk of mental disorders among adolescents?

METHODOLOGY

The study is based on the literature review done by using various search engines like Jstor, Medium, Statista and Google Scholar by searching the following terms: “mental health”, “covid-19”, “youth”, “pandemics”. Followed

up by the search of specific factors and consequences found in the first search's result for instance "physical health, "screen time", "anxiety", "depression", "suicide rates'', "gender discrimination". This paper aimed to explore and conceptualize the youth's experience as represented in articles, research papers, books and theories as a framework.

The Covid-19 pandemic is continuing even during the time this research paper is being written. Due to the stay-at-home condition, the children are compelled to stay inside the four walls and always maintain physical distance outside their homes. A bunch of articles are available on different websites discussing the impact on mental health. However, not much specific research is done on adolescents' mental health across the nations. The literature used in the paper is based on the articles stating information on factors that pushed the new generation towards anxiety and stress. It includes information and figures from various papers indirectly providing the data on how the previous pandemics or epidemics had made a long term psychological impact on the survivors.

REFLECTIONS FROM PAST

The research done during the Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS) and Ebola pandemic portrays that these diseases pose unique challenges to one's psychological health. Regrettably, to understand the impact of past outbreaks on young minds, studies weren't done purposely for children and adolescents. Still, Covid-19 and Adolescents 6 some basic understandings can be derived. Since the situation and condition prevailing during the current pandemic is quite similar to SARS and MERS, the same mental impact is expected in the demic. A study on SARS survivors with psychiatric disorders revealed that about 25% of the patients showed signs of post-traumatic stress disorder (PTSD), and 15.6% of them had worsening depression (Shah K, 2020). The people who survived the MERS pandemic experienced a low quality of life.

To assess the effect of COVID-19 on mental health, a research team examined the literature on the recent Ebola epidemic in sub-Saharan Africa. As per their research, the survivors of Ebola were disturbed by the traumatic memories. The rejection by society, while those who never came in contact with the

disease grieved for lost relatives or struggled to cope with extreme anxiety (Semo B, 2020)

It can be concluded through history; pandemics have always shown drastic and long-term effects on the lifestyle and mindset of people all over the world.

GLOBAL MENTAL IMPACT

Generally, the people influenced by mental health grievances will be more eminent than the people who are affected by the Covid-19. Studies have demonstrated that the emotional wellness effects can continue for a longer period. Adolescence, particularly mid to late adolescence (15-19 years), when numerous overlapping transitions can define the future, is a critical period for all young people.. (Plan International, 2020) The impact on mental health is a silent perpetrator and not less than an unseen virus. The strict lockdown measures caused unrest and stress among young children. Overnight they all were away from the school campus, friends, libraries, their daily routine. The social distancing led to unwanted adverse effects on the academics and mental health of students. They developed anxiety, panic attacks, mood disorder, depression and other mental illnesses.

1) Contamination Fear

With an increase in the number of positive cases and losing one's beloved and even a just known person, the grief and anxiety were affecting youths' mental health. According to a report Generation Z (the current generation) is significantly more likely (about 27 %) than other generations to report their mental health as poor (Muzammil, 2020)**.** The people born in this group were badly affected. They had rarely heard of such a vast level of a worldwide pandemic. Everyone has heard about communicable diseases but this one showed the real picture of how terrible a communicable disease can get. Even a sneeze was enough to doubt whether it's the flu or Covid-19. This fear of getting ill or having a family member or a friend sick was a heavy burden to bear. This was not less than any trauma for young people. Anxiety followed social distancing everywhere. The health institutions had advised washing every item that is brought inside the house. Children were so afraid that in the pandemic they didn't even touch their favourite candies stored in the

refrigerator for days. Xenophobia, the fear of foreigners who might be carrying infection unfurled across the countries especially in the initial phase. People had Xenophobia from every foreigner or urban residing citizen where Covid-19 cases were multiplying daily.

2) Opportunities Lost

Last year in March with the announcement of a worldwide pandemic the schools and universities were put to shut down. Initially, no study or classes were followed as the institutions were still deciding on this. Later on, when countries were not able to see any end to rising cases. They decided to teach on virtual platforms and that's continuing with the second wave of the pandemic.

Daily, young minds from elementary to college students were adjusting to virtual platforms. For children and adolescents with mental health needs, such closures meant a lack of access to the resources they usually have through schools. (Lee J., 2020) Students lost many experiences, some essential activities, chance to study abroad, sports seasons, couldn't apply or couldn't reach the entrance exams of jobs and institutions. University students were stressed about dormitory evacuation and the cancellation of anticipated events such as exchange studies and graduation ceremonies (Lee J., 2020). Graduates lost their employment opportunities. As companies couldn't afford to pay a new employee. Freshers lost their chance to experience on campus matters. Especially the knowledge that could be shared in physical mode is impossible to give in virtual mode. Adolescence is the phase where students tend to learn discipline and figure out their goals. All these things didn't happen just because of the pandemic. Although these reasons seemed to be nothing in front of the people who lost their lives. But, this loss of opportunity will impact the coming years in students' life.

3) Change in behaviours of youth during this pandemic

The separation from school and colleges caused emotional discomfort, it was hard to adapt to this new environment and behavioural problems among the youths became quite common. This pandemic was different for every individual. For some, it proved to be productive and for others non-productive. The news channel and social media were flooded with only two

things, either the Covid-19 current status or people utilising the shutdown.

First talking about the positive aspect, the quarantine phase flourished most of the people well spent time with family. Although financial issues were going on in the families, one pretty clear thing is that everyone relieved their childhood. People enjoyed their hobbies. Social media was loaded with pictures portraying the joy of reading your favourite novel, baking a cake, cooking a new dish, writing a poem, exploring various gaming apps. Most of the people made the best out of hard times. They created precious memories with loved ones.

The other side of the coin was terrible. Not everyone was enjoying this family time. Moreover, not everyone had their family next to them. Not everyone had a hobby to spend in quarantine. For those people, it was horrible to manage their mental health. They faced many behavioural issues like short temper, frustration, anxiety, feeling of being useless.

4) Lost some precious connections

In the pandemic, young people didn't lose their loved ones only due to Covid-19. They also lost some friends due to distance. It was an effortless task to stay connected through social media. The first few months of the pandemic led to Zoom hangouts and remote celebrations, deepening and visible divisions in how people are handling the ongoing pandemic have become the source of growing tension and sometimes outright conflict. Many people were happy as their relationships got strengthened in this pandemic because they somehow prioritized whom they care about and how often they kept checking on them. But as 2020 came to end, many people noticed distance as well as differences in their friendship, which has changed the relationships and not necessarily for the better. Due to the lack of physical contact young people weren't able to make each other understand their situation. This resulted in bitterness in the relationship. The feeling of loneliness led to the loss of some precious connections which was unexpected. It's nonetheless a trauma for young minds.

5) Impact on Physical Health

To reduce the contamination of the Covid-19 virus, all over the world

lockdowns were announced. As a result, children had no access to even school sports. Fitness and activity classes for youth such as gymnastics, dance, and martial arts were also cancelled or postponed (Genevieve F. Dunton, 2020). It led to increased obesity, diabetes and cardiovascular diseases in children. Although these were necessary to slow the spread of COVID-19, they limited children's ability to engage insufficient levels of physical activity (PA) to maintain health and prevent disease (Genevieve F. Dunton, 2020).

6) Economic Conditions

As per a report by StanCan, the families who faced poor economic conditions were more likely to have hyperactive and anxious kids (Kong, 2020). The stress due to financial problems was huge. The financial problems were a real burden to families because the necessities were getting fulfilled from scarce savings. With 29% of single-parent families living in poverty, economic stress puts their children in a more disadvantaged situation (Kong, 2020). They also found that the insecurity regarding the economic conditions affected children in single-parent families more than the children who have both parents. Mental illness and substance abuse of parents significantly influenced our parent-child relation and increased the risk for mental health problems in children. Poor mental health and a negative environment in a family affected the relationship between parents and children. As a result, the mental health of children was also at risk. They had no source to make both ends meet. Students were in heavy fear and anxiety of whether they will be able to continue their studies or not. Not everyone was in a position to afford the expensive data packs, smartphones and even the costly books for competitive examinations. This constrained the development of children and youth.

7) Traumatic Stress due to Quarantine

Children developed severe mental health conditions, including post-traumatic stress, because of the coronavirus pandemic, a charity has warned (Ashitha, 2020). Children are extremely vulnerable. Children are extremely vulnerable. While struggling through the loss of a loved one, inaccessibility to the internet for studies, poverty, opportunity, they were not even able to take

online therapy or any counsellors' help. The children experienced symptoms of anxiety, depression, PTSD, dissociation, emotional, etc. A prevalence of 28.2% for PTSD and 14.1% for depression was observed (Singh SP, 2020). Psychiatric symptoms were alarmingly prevalent: 67.05% reported traumatic stress, 46.55% had depressive symptoms, and 34.73% reported anxiety symptoms (Shufang Sun, 2021). Indeed, the pandemic proved to be a traumatic experience for many adolescents.

8) Increase in Suicidal Rates

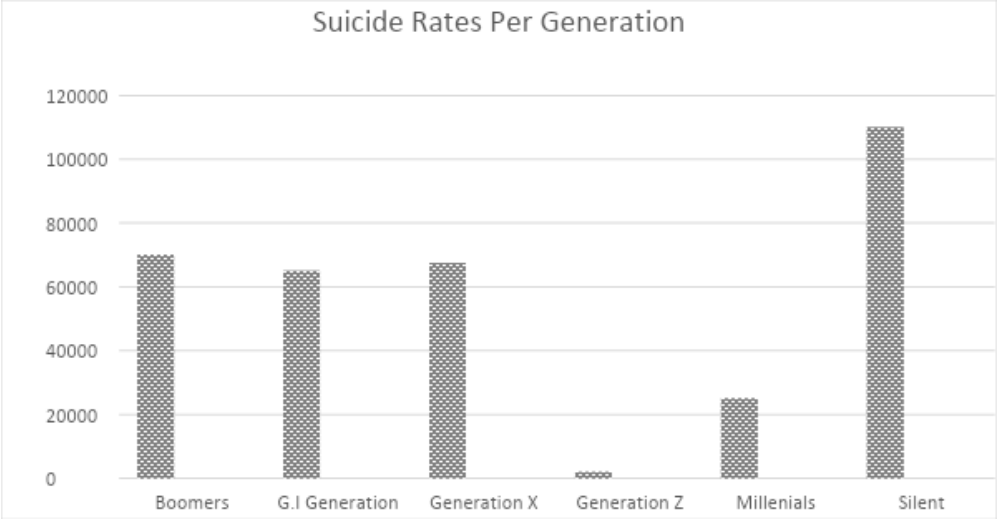
With the new stay-at-home restrictions to curb the spread of covid-19, there are concerns that rates of suicide have increased. Muzammil researched the topic "Effect of Generation on Suicide" with the motive of determining the rise in the number of cases of suicide during the pandemic (Muzammil, 2020)

They took the generations for the project on the respective periods given below:

1. G.I. Generation: 1901–1927
2. Silent Generation: 1928–1945
3. Boomer Generation: 1946–1964
4. Generation X: 1965–1980
5. Millennial Generation: 1981–1996
6. Generation Z: 1996-current

The result of the project was as follow:

It is usually seen that suicide practices are generally basic in the elderly population. They are generally inclined to sadness, dejection, and other emotional well-being issues. According to the report, almost 27% of Generation Z (the current age) felt their emotional wellness was poor amidst the pandemic. In any case, simultaneously, they are 37% bound to get psychological well-being treatment contrasted with different ages. According to the graph, amongst all the generations, the suicide number is highest among the Silent and second-highest among the Boomers generation (Muzammil, 2020)



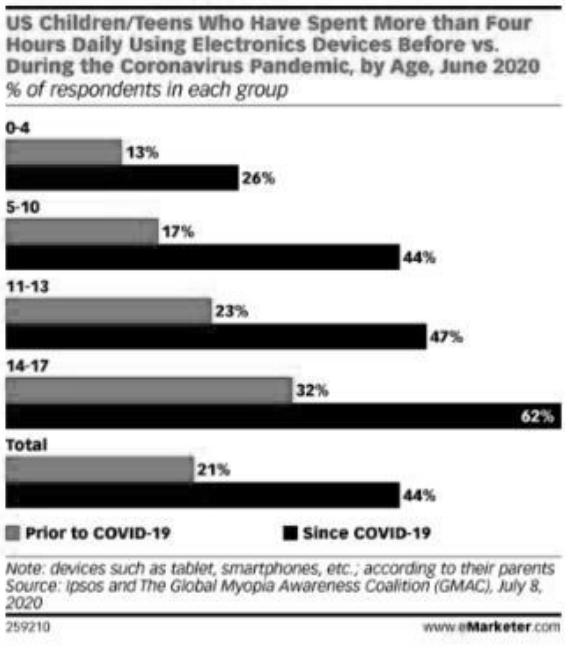
Source: (Muzammil, 2020)

9) Increase in Gaming

The stay-at-home condition increased the use of electrical appliances, play stations, and video games all over the world. Gaming and eSports did not seem to be a passing craze, and the industry had grown during the COVID-19 outbreak. (M. Ángeles López-Cabarcos, 2020). User numbers had skyrocketed during the pandemic. Gaming gave a youth a world to escape reality. To avoid anxiety, youth increased playing online games. It is rightly said, "That is, these games aren't simply about individuals escaping the real world, but about going (virtually) somewhere together" (Jimmy, 2020). A study in India found that 50.8% of students had increased the time they spent gaming as a way of coping with the stress of the pandemic. (Collins, 2020).

10) Adverse effect of Screen Time

Everything was transformed into virtual classrooms, study material and gaming which children used to do outdoors or in a physical mood. For young people, screen time was a touchy subject even in the best of times. In the pandemic, kids holed up together 24/7 and everything from school to birthday parties was held online. It was hard to control children's screen time.



As per a study by eMarketer amidst the pandemic, usage of e-devices by children has escalated (eMarketer, 2021). Another report by OLX India shows that the screen time by the kids in lockdown has increased by 100%. (Report, 2020). When examining the effects of COVID-19 on adolescents and young adults, found that the average screen time has increased from 3.5 hours to 5.1 hours. (ZALANI, 2021). The graph given above shows the percentage of US children who had spent more than four hours daily using electronic devices before vs during the pandemic. According to the graph, it is clear that in different age groups taken, the usage of electrical devices has increased a lot since the COVID-19 pandemic. The increased screen time resulted in eye irritation, eye redding and other problems. This weakened the eyesight and many young people had to start wearing spectacles.

EVIDENCE-BASED RECOMMENDATION

According to the World Health Organization, mental health is a state of well-being in which the individual realizes his or her abilities to cope with the normal stresses of life and can work productively and fruitfully. Mental health impacts how we think, feel and react. It is the foundation for individual well-being. It shapes our decision-making power and managing stress. The

various aspects of our lives are affected by our mental health. Like adults, children and adolescents also have mental health disorders. The disorders come in the way of what they think, observe and decide. All these things when summed up could lead to bad mental health, feeling of loneliness, traumatic experience, childhood abuse, discrimination and stigma. They lead to anxiety, distress or disability in social, work or family activities. "Physical illness" is a term to describe the range of physical health problems. Similarly, "mental Illness" is the term to depict poor mental health conditions. It is significant for children to maintain a healthy balance of their physical and mental health.

It is a known and still ignored fact that being a teenager is difficult no matter what. The COVID19 Pandemic had added up to the mental illness of young minds. They have faced some unexpected and life-changing things in their life at a very early age. It led to a rise in anxiety, stress, and depression levels. Since the pandemic is still not over and the conditions for youth are as similar as the initial phase of the pandemic, youth should be guided well in the dynamic environment.

The schools and colleges are continuing the academic session through virtual mode. They should undertake the responsibility of their students' mental health. With their usual course or subjects, they should take counselling sessions. Not everyone can afford the psychologists' fees. Many schools and colleges have taken initiative in this field but there is a lot of scope for the rest of the educational institutions to organise one Counselling session for students.

Also, the part of the youth who are lacking awareness or understanding regarding why the pandemic is not coming to an end is likely to have stress and nervousness. Subsequently, youngsters must read or hear the data about COVID-19 through a reliable source like a news channel. It will spread more awareness among them. They will not only understand why we are still practising social distancing but also make them understand a wider picture of COVID-19. Parents or adults should talk to their children regarding their life and difficulties. This will provide them emotional support in the prevailing negative environment.

Moreover, every single young mind must know how to manage their emotions without depending on others. They should participate in the activities they love to do. It will keep them distracted from the stress. Indulging in more physical activities have always been the best remedy to cope with distress. Meditation is the key activity for anyone at any age to balance their mental health. It makes an individual calmer and more efficient. In this pandemic, if youth inculcated these practices in their life, they would be relied upon to succeed better in the future.

Protecting and maintaining the mental health of people in the future is only possible when the pandemic will end completely. Though no one can go back and normalise the situation, everyone can start from now to make a better and healthier life. Although it is impossible to bring back our loved ones who lost their lives due to coronavirus, suicides, hypertension and various other factors of pandemics. Every youngster must understand the need for investment and savings for unexpected and unpredictable times. It is said that "One should remember that life's greatest lessons are usually learned at the worst times and from worst mistakes". Many people lost great opportunities but one should never give up on their dream.

CONCLUSION

The COVID-19 pandemic impacted the psychological health of adolescents as many students from school, colleges reported to family members, friends, psychologists and took part in interviews. They confronted how badly their mental health is affected in this awful time. Pandemic posed an unprecedented threat to the mental health of individuals across the world. Overall, results from the study suggest that the Covid-19 outbreak and lockdown heightened the issues and grievances regarding mental disorders among adolescents. The pandemic resulted in the increased mental distress and instability such as stress, anxiety, depression due to the fear of contamination, grief and loss of loved ones, lockdown, no physical activity, no social contact, increase in screen-time, overuse of social media and internet, domestic violence, transform to virtual studies from the traditional one, poor finances. This led to increasing in alcohol consumption and suicide rates. There is a need for the reliable and latest information about the pandemic. More research and counsellors at educational institutions are required to

rebuild a positive mental attitude among adolescents. More specific research is required on youth mental disorders during the time of pandemics

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Cryptocurrency- The Rise of Tokens

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ABSTRACT

Ever since bitcoin, the pioneer anarchic cryptocurrency gained momentum in 2019, the attention to the market has drastically increased. A number of currencies have come up bringing with them a huge number of investors. This paper seeks to provide a concise yet comprehensive analysis of the basics of blockchain technology and the growth of cryptocurrency over the years. It takes you through the timeline of evolution of the industry along with how the bank issued currency differs from this currency. With particular analysis of Bitcoin, the first decentralized cryptocurrency, the paper also highlights investments in various countries. It presents the government stance on this trending topic across the world along with problems and a description of the networks on which it works.

Keywords: Cryptocurrency; Blockchain Technology; Bitcoin; Decentralisation

INTRODUCTION

The paper presents a critical comparison of the blockchain industry against the banking arm of the world economies. We've tried to understand how can the rise of cryptocurrency have an impact on the banking sector and can it a possible substitute for the future. Further, the

relevance of cryptocurrency in the financial world has been discussed. Another area of concern for trading in this market has been the taxation schemes. We've touched upon possible ways to tax the income earned out of the trades made in the market. We've also analysed the stance of the Indian government on cryptocurrency and mentioned a few reasons behind the opinion.

A number of research reports shed light on several aspects of Cryptocurrency worldwide. An interesting study was conducted titled 'An Analysis of Cryptocurrency Industry' by an author from University of Pennsylvania, that analysed the various networks on which different cryptocurrencies work. The report also incorporated attempts made by various governments to define legal parameters for cryptocurrency. The study estimated that bitcoin may dominate the industry in the long run. (Ryan Farell. 2015) Research has also been undertaken to understand the various applications of cryptocurrency other than as a monetary commodity.

Another report by Corporate Finance Institute discussed the working of cryptocurrency and how it can be an investment opportunity. They touched upon possible ways to evaluate means of arriving at the value of these currencies. An understanding of how cryptocurrency can act as an addition to a portfolio was also presented.

A Deloitte report empirically studied the top 5 trends for bitcoin and blockchain technology. The report comprised of gradual shifts, in the industry, from experimenting to developing robust enterprise solutions. It also studied the adoption rates across various industries and how the role of government would be critical in reaching the goals.

It was 2009, when a new way to transfer money over the internet emerged. Words like Bitcoin, blockchain and cryptocurrencies gradually unfolded. In the decade-plus since, the crypto industry observed all classic episodes of a disruptive technology; reaching new all-time highs and crushing pullbacks, chapters of euphoria and moments of despair, fear, and everything in between.

Although the concept of digital currencies dates back to the 1980s, Bitcoin, launched in 2009, is said to be the first successful decentralized

cryptocurrency. The journey started, when a pseudonymous developer; Satoshi Nakamoto (identity of whom is still unknown) published their idea in a paper titled **'Bitcoin: A Peer-to-Peer Electronic Cash System'**. In the paper, Satoshi Nakamoto demonstrated an electronic payment model based on cryptographic proof instead of a trust. The launch of Bitcoin aimed at freeing the currency market from the hierarchical power structures by decentralizing it electronically using a peer-to-peer network. In simple language, cryptocurrency is a **virtual coinage system** that functions similar to money, enabling the users to trade goods and services, free of a central trusted authority.

Exhibit 1: Asset Class Total Returns Over Last 10 Years

Asset Class Total Returns Over Last 10 Years (as of 31/03/2021)													
Asset Class	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 (YTD)	**2011 - 2021 (Cumulative)**	**2011 - 2021 (Annualized)**
Bitcoin ($BTC)	1473%	186%	5507%	-58%	35%	125%	1331%	-73%	95%	301%	109%	20037142%	231%
US Nasdaq 100	3%	18%	37%	19%	10%	7%	33%	-1%	39%	49%	1%	541%	20%
US Large Caps	2%	16%	32%	14%	1%	12%	22%	-5%	31%	18%	5%	282%	14%
US Small Caps	-4%	17%	39%	5%	-5%	22%	15%	-11%	25%	20%	19%	245%	13%
Gold (USD)	10%	7%	-28%	-2%	-11%	8%	13%	-2%	18%	25%	-10%	16%	2%
BSE (Sensex)	26%	9%	30%	-5%	2%	28%	6%	14%	16%	0%	5%	210%	12%
Highest Return	BTC	BTC	BTC	Nasdaq	BTC	BTC	BTC	BSE	BTC	BTC	BTC	BTC	BTC
Lowest Return	US S	GLD	GLD	BTC	US S	Nasdaq	BSE	BTC	BSE	BSE	GLD	GLD	GLD

Source: Yahoo Finance

From the humble beginning of $1 in 2011, bitcoin leapfrogged to an all-time high of $55,863 (Source: Coinbase) this year, delivering a mind-boggling return of **20037142% i**n the process, as can be seen from the table above. In contrast, BSE rose by 210% in absolute terms during the same decade whereas gold prices delivered a return of only 16%. As a matter of fact, amongst all the asset classes listed above bitcoin was the **best performing asset** of the last decade.

As we progress, with more than 4,000 currencies in circulation, one thing is clear: Crypto and blockchain technology are not going anywhere, and might be the way forward.

RESEARCH METHODOLOGY

For any research paper the research methodology forms the base to translate the data into a relevant conclusion. The nature of research in this paper is

analytical. We have followed an observational method catching currencies at their prices for a specific period. Our analysis is sampled from the behaviour at large of the elements of the industry.

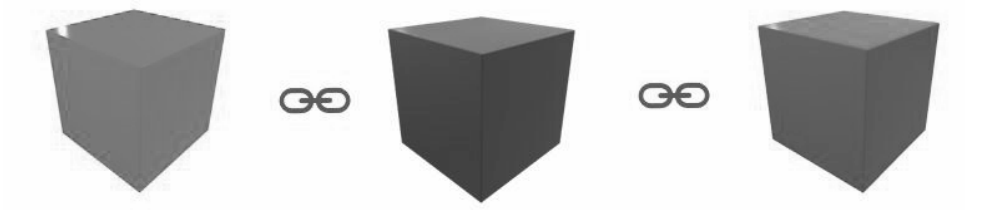
For the study, we have primarily used the relevant data that was provided by international organizations such as Dow Jones Charts, Nasdaq charts and other government reports of nations across the globe. Other reports in particular the '*Blockchain Trends 2020*' by Deloitte, '*An Analysis of Cryptocurrency Industry*' by University of Pennsylvania and '*Cryptoassets*' by CFA Research Institute have also been analysed in this academic study.

The data analysed of the past ten year's performance has been worked out to produce a timeline, tables and graphs. The data has helped us understand the network mechanism of Cryptocurrency and its working through the Blockchain Technology. It has also served as an instrument to assess the future course of action for the sustainability of the currency.

The Foundation of Cryptocurrency; Blockchain Technology

The crypto network works on blockchain technology. A blockchain is a **distributed ledger** (Exhibit 2) that is completely open to anyone. They have an interesting property of storing data and once anything is recorded in it, it becomes very difficult to change it.

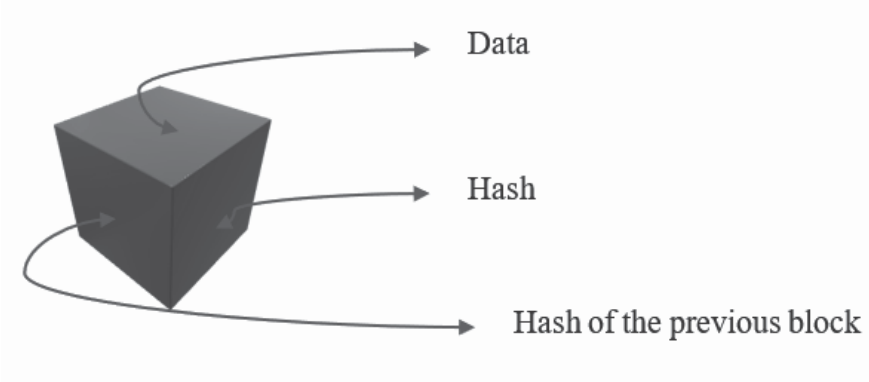
Exhibit 2: A Distributed Ledger (With 3 Blocks)



Each block contains **three** things:

1. Data
2. Hash
3. Hash of the previous block

Exhibit 3: Elements In A Block

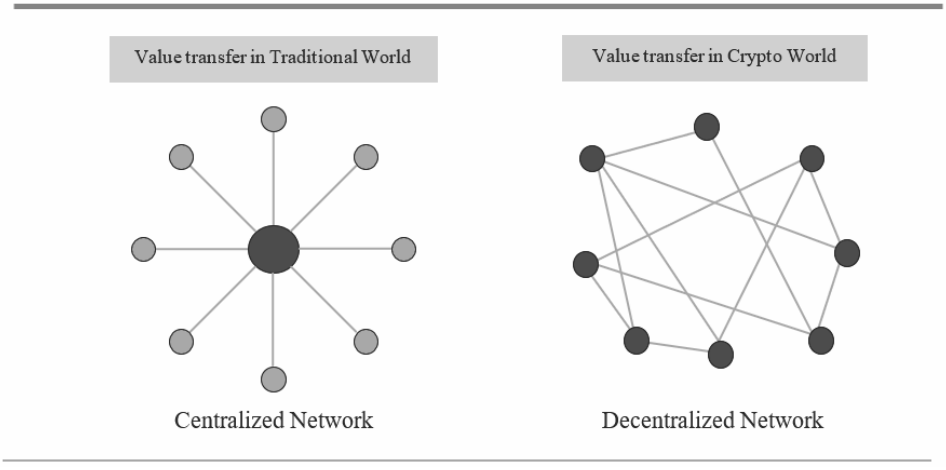


The data that is stored inside each block largely depends on the type of blockchain. For instance, the bitcoin blockchain stores the details about the transactions between the buyer and the seller, number of coins traded, and other relevant details. The block also contains a hash. The length of hashes is fixed which makes it impossible for someone to crack it and hack the system. Hashes are just like are our fingerprints, as they are unique to one-selves, so are hashes to their blocks. The third element of every block is the 'hash of the previous block', which is responsible for creating the entire chain of blocks and the technique makes the blockchain so secure.

How does it work?

The core idea behind all blockchain databases aims at creating a single distributed ledger that is accessible to everyone. However, this database is not controlled by any single corporation, government, person, or entity, unlike the traditional systems. Exhibit 4 shows how the decentralized database is structured and how values transfer directly on a peer-to-peer basis, without a trusted central intermediary. In contrast, in the existing traditional networks, a central authority is present and it validates the printing and regulation of the currency in circulation.

Exhibit 4: Value Transfer



For the validation in a decentralised network, all copies are identical and updated synchronously, every bitcoin is "a chain of digital signatures". Thus, "each owner transfers the coin to the next by digitally signing a hash of the previous transaction and the public key of the next owner and adding these to the end of the coin" so that ownership can dynamically be programmed into the coin.

All bitcoin trades can be done through this public ledger, known as the "blockchain." One important point to be observed here is that the value of bitcoin is **purely a function of demand and supply**. While there are two parties transacting throughout the planet, a special participant "bitcoin miner" is also present. Miners are powerful computers, scattered across the globe and have a significant say in the entire bitcoin network. Miner's tasks involve aggregating the groups of new transactions, which are called 'blocks', and to propose settlement for them. Miners compete with each other to attain the next trade and settle the next block. Whoever gets a chance, is rewarded with newly minted bitcoins. This is why the miners are said to be a significant part of the network. Their work is to verify the transactions and maintain the database, for which they are rewarded new bitcoins.

Blockchain is clearly the foundational stone for Bitcoin, but it has evolved beyond supporting virtual currency. One very important application of

Blockchain is smart contracts. A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. In simple words, smart contracts are contracts that are contained in a distributed decentralized blockchain network. They permit trusted transactions amongst anonymous parties without the need of a central authority or a legal system. The reason they are important is because they are digital. With that being said, there comes speed, efficiency and accuracy. Not only that, but also more trustworthiness, transparency and security in the transactions that we will be observing in our day-to-day lives.

The Underlying Network Mechanism of Cryptocurrencies:

- Proof-of-Work Network

Proof of work (PoW) is a type of **cryptographic zero-knowledge proof**. In it, one party can prove to another party that they are aware of a value without conveying any more information. Basically, the knowledge of something possessed in release without releasing any information on the same. Cynthia Dwork and Moni Naor invented this concept in 1993. It helps in deterring any denial-of-service-attacks or spams on a network. It became popular through Bitcoin. It is the first adopted application of the concept. PoW helps cryptocurrency like bitcoin to be decentralized. It is widely used in cryptocurrency mining, for validating the transactions and mining of new tokens. Every bitcoin transaction gets stored in a blockchain. The network accepts a new block every time the miner comes up with a winning proof-of-work which is in about every 10 minutes. They need to find the winning PoW to get a bitcoin for which they need to find matching computations. So, they basically try to find the matching computation by forming a hash function which is the winning PoW which will ultimately give them bitcoin.

- Proof-of-Stake Network

Proof-of-Stake (PoS) mechanism is **an alternative to POW** mechanism. In this a person mines or validates transactions on the basis of how many coins they already hold. Hence, in order to verify a transaction and receive the coin reward, a miner must own some coin himself. The mining power is given on the basis of the percentage of coins held. Hence, there are very little energy costs in this transaction. PoS systems face the challenge of how to initially

distribute the coin. Whereas in PoW the coins are distributed to the miners who add value to the network. It is more energy efficient as compared to proof-of-work.

- Hybrid POW/POS Network

A hybrid consensus basically starts with having PoW miners to create new blocks containing transactions to be added to the blockchain. After these blocks are created, PoS miners decide whether to confirm them or not. PoS miners need to purchase votes by staking a portion of their tokens. But the total vote count is not examined. The hybrid PoW/PoS randomly chooses 5 'votes' to determine the efficacy of the newly created block; if 3 of the 5 chosen votes are affirmative, the block is added to the blockchain. In exchange for these services, PoW miners receive 60% of the block reward, PoS miners receive 30%, and the remaining 10% is dedicated to developmental efforts. It brings the security of PoW and the energy efficiency of PoS together.

- Byzantine Consensus Network

A Byzantine fault is a condition of a computer system where components may fail. Also, there is imperfect information on whether a component has failed. The term basically takes its name from an allegory, the "Byzantine Generals Problem''. It was developed to describe a situation in which, to avoid failure of the system, the system's actors must agree on a concerted strategy, but some of these actors are unreliable. The server appears both failed and functioning. Basically, a consensus needs to be reached in order to decide that.

Milestones of Cryptocurrency & Bitcoin (2008-2020)

2008

The journey of cryptocurrency started with the publishing of a paper titled 'Bitcoin: A Peer-to-Peer Electronic Cash System' by a developer by the name of Satoshi Nakamoto. The paper explained applications of a peer-to-peer network to generate a system for electronic transactions.

2009

Satoshi Nakamoto mined the ***genesis block of bitcoin*** (block number 0). It had a reward of 50 bitcoins. That is how the network of bitcoin came into existence. It is estimated that around 1 million bitcoins were mined in the early days. Two pizzas of Papa John's were exchanged with 10,000 coins. Before these bitcoins were only mined and never traded; so, this was the first time a cash value was attached to a cryptocurrency.

2010

A problem, in the sense of transactions not being properly verified before including in the transaction log or blockchain, were detected. This enabled users to bypass bitcoin's economic restrictions and create an indefinite number of bitcoins. Exploiting the vulnerability, over 184 billion bitcoins were generated in a transaction, and sent to two addresses on the network. Within hours, the transaction was spotted and erased from the transaction log after the bug was fixed and the network forked to an updated version of the bitcoin protocol. This was the only major security flaw found and exploited in bitcoin's history.

2011

Bitcoin gained traction this year and was also caught up in a controversy of being used for buying guns and drugs among other things. Litecoin, was launched in the fall of Bitcoin, and gained modest success due to its modified protocol, improving the idea of day-to-day transactions. Namecoin was also launched this year, and like bitcoin, it also has a limit of 21 million coins to be traded.

2012

This year saw a lot of fluctuations in the price of Bitcoin. Following a decline of 94% in the year 2011 (falling to $2), the prices began to rise and rose to $7.20 in early January. The Bitcoin Foundation was launched in September, for "accelerating the global growth of bitcoin through standardisation, protection and promotion of the open-source protocol." In August, peercoin emerged as another cryptocurrency, which uses a hybrid of PoW technology

(used by Bitcoin) and PoS (used by Litecoin) for employing the network security mechanism. It was the first cryptocurrency to use such a hybrid model.

2013

Cryptocurrency gained a lot of momentum in 2013. A total of 5 cryptocurrencies were launched this year, the list comprising Dogecoin, Gridcoin, Primecoin, Ripple and Nxt. While Dogecoin was introduced on the famous Doge internet meme, Ripple (XRP) introduced a wholly unique model, which was not based on bitcoin. Year 2013 was also named as the **"Year of Bitcoin"**. The price of Bitcoin hit great highs at this time. A major reason for such a spike was the Cyprus Banking Crisis. This year bitcoin made headlines by reaching $1242 per coin where gold came to $1240 per ounce. This period also saw cryptocurrency exchanges mushroom in India, the list comprising companies like Zebpay, Unocoin, Koinex, Pocket Bits and Coinsecure. The month of October saw the launch of the world's first bitcoin ATM in Vancouver, BC, Canada. In December, RBI released two press statements disregarding cryptocurrencies; saying that they are not backed by a central bank and their value isn't underpinned by any asset.

2014

The competition in the cryptocurrency industry evolved since the inception of Bitcoin in 2009 and users saw nine cryptocurrencies being launched this year. Some of these were Dash, Stellar, Titcoin among others. 2014 saw scams and thefts in cryptocurrencies. Mt. Gox, one of the largest exchanges of cryptocurrencies went offline and filed for bankruptcy. Bitcoins worth $460 million were stolen or hacked. This was a messy year as people lost their coins and the exchange halted withdrawals for further investigations. Most reports concluded that the coins were directly stolen from the company wallet.

2015

This year saw the launch of the Ethereum network - that brought the concept of smart contracts to the cryptocurrency world. Ethereum was proposed by Vitalik Buterin, a programmer, and went live in July, with an initial supply of 72 million coins. It is said to have its own programming language running on a

blockchain, thereby empowering developers for running and building distributed applications. Ether had two-folded uses; traded as a digital currency like others, and also used in the Ethereum network for running applications. Another currency, launched in 2015, attaining a lot of traction was Tether. Tether claimed to have been backed by US Dollars at a 1 to 1 ratio. Due to this very reason, Tether was said to be stablecoin (value pegged by US Dollars, a fiat currency) and the most controversial cryptocurrency as well. Later in the year 2019, after various investigations, the claims made by Tether Limited (founding company of cryptocurrency; Tether) were false. They were only using these for manipulating the prices of Bitcoin.

2016

Year 2016 saw the launch of Zcash, the first to develop an open and permissionless financial system, with zero knowledge security. Zcash also aimed at providing enhanced privacy to its users. Apart from the launch of Zcash, the year 2016 saw two important announcements:

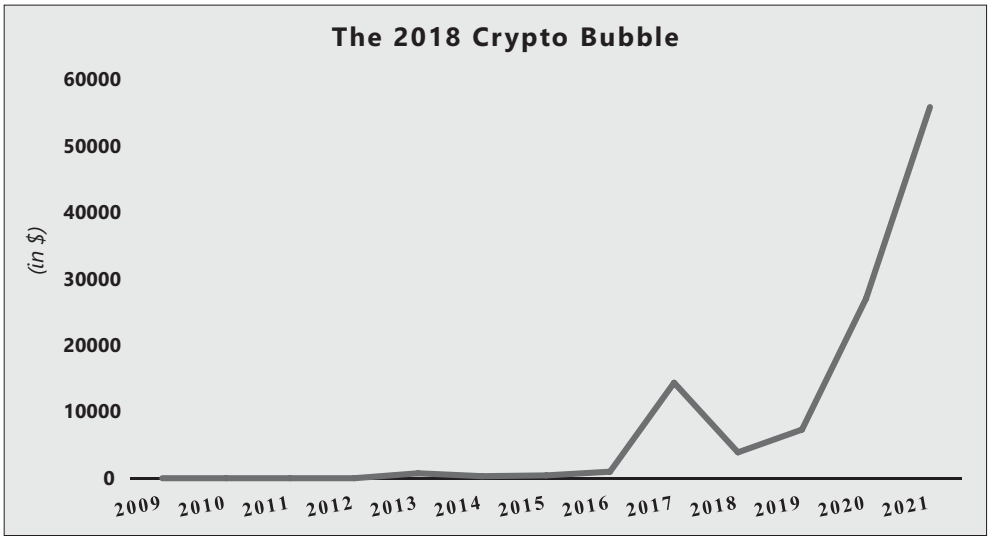
The cabinet of Japan, recognized virtual currencies as legal, and claimed them to be somewhat similar to the real currency. Bitfinex, a major bitcoin exchange, got hacked and around 120,000 BTC ($60M) were stolen.

2017

With people increasingly getting familiar with the concept, the number of enterprises accepting bitcoins continued to increase. Bitcoins gained legitimacy among the lawmakers and financial companies. The year 2017 was the turning point for bitcoin, as their prices went above $10,000. Bitcoin Cash was also launched, splitting bitcoin into two derivatives - Bitcoin (BTC) and Bitcoin Cash (BCH). Another important observation was the launch of the Bitcoin futures contract by CME, the world's largest future exchange. Despite the prices of cryptocurrencies being at their all-time highs, the Indian government with the RBI compared them to ponzi schemes. A committee was also established for studying issues revolving around cryptocurrencies and to propose actions.

2018

With an increase in investment in the crypto-market, some professional investors and amateur traders predicted a further rise in its price in the coming years. However, in the month of January & February bitcoin's price dropped by 65%. The line graph displays the drop:



While this dip was a matter of concern for a few, others saw this as a healthy point of entering in the market, as they were getting 40-45% discounts.

2019

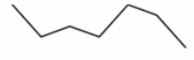
The past year proved to be nothing but a roller-coaster ride for the cryptocurrency market. From the major hacks to an exchange floor crash, some coins saw a surge in value while others floundered. The value of bitcoin spiked in value, on the news, when Facebook and other organisations were planning to launch their own cryptocurrencies. Alongside these developments, a lot of financial institutions, technology firms and other organisations, started accepting and acknowledging Bitcoin's value and potential.

2020

The year 2020, saw Facebook announcing the launch of "Libra" (now known as Diem), another cryptocurrency, which is supported by an independent authority, the Libra Association (now Diem Association). While the majority of the stock markets catered, reeling from the rapid global spread of coronavirus, cryptocurrencies progressed even worse. Prices of bitcoin dropped 50% in March. However, during December, the prices of Bitcoin went to new all-time highs reaching close to $30,000. One of the reasons for a surge in the prices was the presence of a predefined limit on the number of bitcoins to be traded globally. Investors believe that when the supply runs out, the value tends to increase.

Trends of some In-Demand Cryptocurrencies

The table below lists data of some prominent currencies in the crypto-market:

Currency	Launch Year	Current Price (in ₹)	52 Weeks Low (in ₹)	52 Weeks High (in ₹)	7-Day Chart
Bitcoin	2011	35,34,466	6,61,574	48,74,119	
Ethereum	2015	2,77,033	14,618	3,20,594	
Basic attention token	2017	93	15	123	
Cardano	2015	161	3	192	
Ripple	2012	106	12	147	
Litecoin	2013	22,338	2,920	30,076	
Ethereum Classic	2015	7,154	292	12,848	
Dogecoin	2013	37	0.17	54	
Bitcoin cash	2017	88,403	14,965	1,19,355	
Stellar	2014	51	4	57	
Tether	2014	73	72	79	
Binance coin	2017	41,768	1,135	50,696	

Note: *As on 15th May, 2021*
Source: *Yahoo Finance*

Bitcoin v/s Banks

Bitcoin and cryptocurrency kill off the existence of central banks due to their decentralised nature. The Central Bank plays a way greater role than just of printing money. It with the help of the monetary policy regulates interest rates to make acquiring money more or less expensive as the need of the country maybe. It has the power to control the amount of money circulated. Adding on to this, it purchases securities in the open market to regulates interest rates and money supply in the economy.

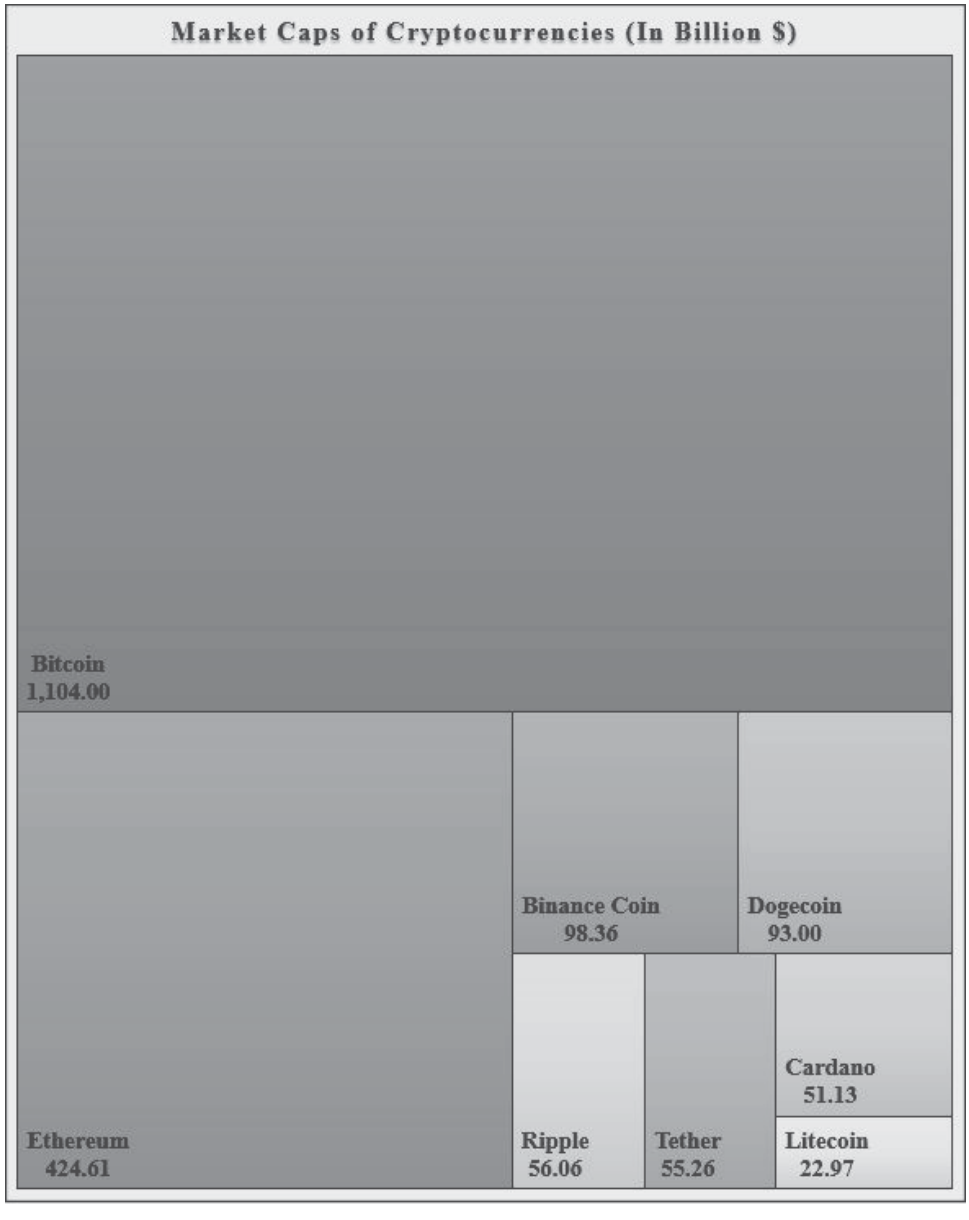
With the recent surge of interest in the cryptocurrency market, discussions on whether it is the future and if the current system of Central Banks regulating the currency should be rules out, have been very prominent. A company report discussed how the central bank can regulate cryptocurrency as well. It could regulate the supply and levy interest rates in the same manner as for fiat currencies. The report talked about a shift from the fiat currency gradually and mentioned that cross country transactions would become hassle free and their costs would be reduced drastically. This would make the cryptocurrency lose out the very essence of its structure. Also, using it for regular payments and ruling out central banks could open a huge door for money laundering as there would be no central authority controlling the money. Both sides have various repercussions and it is a long debate of which one over the other.

Key Differences:

Banks	Cryptocurrency
Set hours of remaining open	Works 24*7
Built on Know Your Customer (KYC), identity mandatory	Main essence is no identification and decentralization
Two-factor authentication and passwords are mainly a security measure. Bank as part accesses your data.	The decentralization, anonymity and encryption are the security measures. No one can access your data.

Visual representation of pre-eminent cryptocurrencies

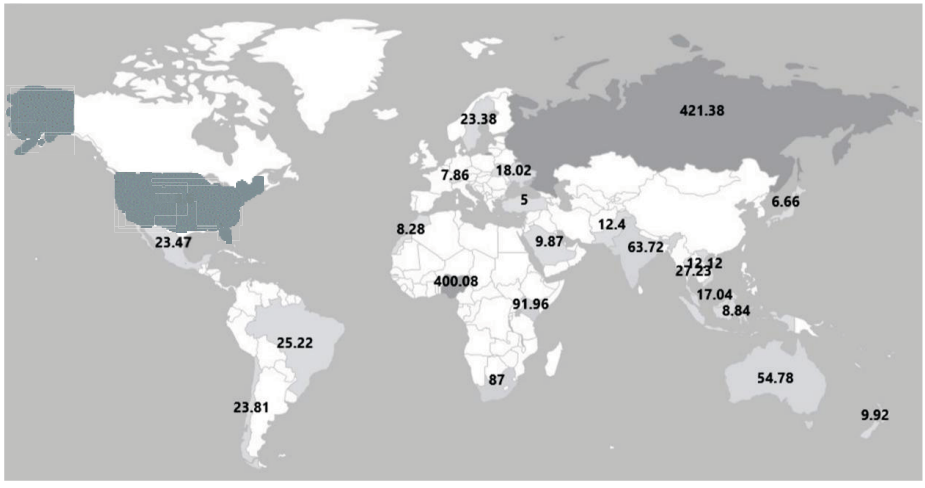
The following infographic shows the market capitalisation of various cryptocurrencies:



Note: Values as on 15 May 2021
Source: Yahoo Finance

- Countrywise Bitcoin Value (in $)

Demonstrated below is the bitcoin investment of various countries:



Note: Values as on 15 May 2021

Source: Yahoo Finance

Government Regulation in India

India has been discussing bans on cryptocurrency and it takes us back to the 1970s when there were enormous currency restrictions. What this does is open a black market of the same in the country. A whole network of computers is scattered across the world mining cryptocurrency and India currently does not have the capacity to either track or keep in check the same. Tracking of all digital and internet activity would be needed to pull off the ban which India is unlikely to be able to.

These concerns of the government come over the point of tax evasion but cryptocurrency if not impossible, is very hard to keep a track of. Another concern of the government is preventing capital flight and volatility during economic crises. Cryptocurrency would allow Indians to bypass the current restrictions on capital account convertibility and invest abroad more easily. But again, protecting Indians from global volatility by banning cryptocurrency would be like making roads safer by eliminating cars. India can actually work on the restrictions on financial transactions to solve these concerns over considering a ban.

Adding on to the government angle in cryptocurrency, the Indian Government asked all the companies to disclose their dealings in

cryptocurrency in their balance sheets. This move was to enhance transparency between the government and investors. The amount of holding along with the profit or loss on transactions needs to be disclosed. Currently the Reserve Bank of India (RBI) has appointed a committee to discuss the regulations and the possible applications of blockchain.

The following table summarizes the attempts made by various governments for defining legal parameters:

Countries	Government's Stance
India	✓ Legal
	Reserve Bank of India (RBI) along with the government is exploring for creating a state-backed virtual currency, while banning all private cryptocurrencies like Bitcoin, Ethereum, etc.
China	✓ Legal / ✗ Banking Ban
	The Chinese government banned all local cryptocurrency exchanges.
Russia	✓ Legal to mine / ✗ Banking Ban
	Not a legal tender but not banned yet.
United States	✓ Legal
	The U.S. Treasury classified bitcoin as a convertible decentralized virtual currency. Bitcoin is taxed as a property and also classified as a commodity.
Japan	✓ Legal
	Allowed to possess legally but cryptocurrency exchanges can function only if they comply with the set regulations.
Germany	✓ Legal
	The German Finance Ministry has qualified virtual currencies as financial instruments; however, the country is in the process of transposing into its domestic law.
Singapore	✓ Legal
	Government provides a balanced regulatory and legal environment for the cryptocurrency market.
Turkey	✓ Legal to trade and hold / ✗ Banking ban and illegal as payment tool.
	The Central Bank of the Republic of Turkey issued a regulation banning the use of cryptocurrencies including bitcoin and other such digital assets based on distributed ledger technology.
Finland	✓ Legal
	The government has given the Financial Supervisory Authority the responsibility to regulate cryptocurrency specifically to prevent money laundering and financial terrorism.

We discussed a couple of currencies that exist. One important factor to channel here is the application of them. Here, we talk about a few of them. Firstly, something as simple as a Bitcoin is being worked upon to be used as a value for money for buying goods and availing services. A cryptocurrency

Dash functions faster than Bitcoin. A currency Cardano is being developed to allow sending and receiving funds for minimal fees and instantly. BitTorrent is developed on the lines of enabling payments. On the other hand, Ripple can be used for asset exchanges, remittances and such other applications of the financial world. The network of Matic provides a user interface for payments to be instantly made in cryptocurrency. Ethereum is a public ledger used for verifying and recording transactions. It works on the blockchain technology therefore supporting decentralization and enhancing security.

Primarily, these currencies are being worked upon to have an actual application in our regular walks of life. Ways are being worked upon to use them in contracts, networks and so on and so forth.

What is important to understand here is, the blockchain industry is trying to modernize our ways of finance, it is looking for loopholes in the security of transactions and their privacy and trying to come up with solutions to them. This is what the whole stigma around cryptocurrencies is.

This new development has come a long way, yet has a long one to go. Countries like India are now adapting to online payments but a huge population of the country does not have a smartphone let alone being comfortable with online payments. For a traditional mindset like here, these developments still have a far road to travel.

FACTORS TO BE INCORPORATED WHILE DISCUSSING THE INDUSTRY

One of the major factors to consider is the **custody of assets** in the market. Every block has a private key but if you lose it, your data is lost forever. The two basic ways are storing it either online in your database or offline on a paper. Online storage might be riskier as data breaches are commonly heard of. Another approach is to purchase a dedicated hardware "wallet," such as a Ledger or a Trezor, which uses hardware chip design to create an offline-like experience. In fact, most retail investors use investing apps which provide all-in-one brokerage services for buying and selling crypto assets and store them for users, often in a setting that is partially online and partially offline.

TAX IMPLICATIONS IN INDIA

One very important of aspect of the cryptocurrency saga here in India is its taxation. There are many discussions on ways to tax it. So, if you are an investor, it could be taxed under short-term or long-term capital gain depending upon your period of holding. If you are a trader, it can be taxed under the head profits and gains from business and profession. And if you are someone who is into the process of mining bitcoins, you will not be taxed at all. If not these, cryptocurrency could also be declared as a digital asset and taxed in that conventional manner.

CONCLUSION

The cryptocurrency market has been growing with increased volumes of trading in the past months. But it is prone to multiple risk factors which are yet to be worked out. The foremost highlight of these currencies are their extreme volatility and instability which differ them from conventional asset classes and also makes it a risky investment. Like all rich investors say, "Invest only that amount of money which you are ready to lose."

To further the impact of volatility another thing that can be drawn out is high and uncertain returns. Currencies have risen as high as 70 lakhs from 35 lakhs and have fallen back to 30 lakhs. That is the amount of uncertainty of returns which makes it difficult to be currently adopted as a means of payment.

Having spoken of the two major highlights, one thing that is going to be inevitable is the incoming importance of the blockchain technology irrespective of whether cryptocurrencies adapted or not. Coming to the legalisation and government angle, a decision is yet to be taken. There are discussions and deliberations on the topic both against and in favour which gives us a light at the end of the tunnel.

Coming from 2008 when we talked whether or not the technology would work, we are finally at a point where the mindset has changed to, **"How can we make the technology work for us?"**

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Population Trends in India: Demographic Dividend or Demographic Drag?

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ABSTRACT

Being the world's second-most populous country, India's rapidly rising population is certainly a unique feature for the country. India's economic growth story is also of importance as it is a developing nation and one of the fastest-growing economies. While some argue that the rising population is a menace for economic growth in India due to the decline in capital per worker, this paper aims to analyse how a growing population can have a positive impact on the nation's economic growth. To facilitate this objective, the paper focuses on the demographic transition experienced by India and the various aspects through which the country can reap its demographic dividend. However, there exist certain obstacles that may convert the demographic dividend into demographic drag, making population growth a burden over the economy. The paper also takes into account experiences from across the globe in the form of empirical evidence and studies various policy implementations necessary to take advantage of the demographic dividend.

Keywords: Demographic Dividend, Demographic Drag, Demographic Transition, Economic Growth, Population Growth

INTRODUCTION

In the 1990s, several scholars and researchers used the empirical convergence models à la Barro to isolate the effect of demography on economic growth (Kelley and Schmidt 1995; Bloom and Williamson 1997, 1998). The major finding of these studies stated that there remains a strong and positive effect of demography on economic growth when the working-age population grows faster than the dependent population of a nation (Sanchez- Romero et al 2017). However, with time, the importance of demography was clearly stated in terms of the fact that changes in the age distribution affect the productivity of workers in the nation (Kelley and Schmidt 2005). Apart from this, the absolute importance of demography is three-fold. Firstly, it acts as a 'predictive tool' and ensures powerful insights about future trends. Secondly, it also helps scholars and policymakers to estimate future challenges that may be faced by a nation. Thirdly and most importantly, demographic changes provide conditions conducive to economic development, providing nations the opportunity to embark on the journey of rapid economic growth (Singh & Paliwal 2015).

Against this backdrop, it becomes pertinent to study the case of Indian demographics in relation to its economics, considering India is the second most populated country in the world. An analysis of its population and age structure becomes imperative as 'population' can be that factor in India, which can be flipped from a burden to a boon.

Before focusing on the case of India, it is necessary to understand the economic rationale behind the process of demographic transition and demographic dividend, which has been elaborated upon in section 2. Section 3 focuses on the implications for growth in the case of a demographic dividend and section 4 supports the theoretical analysis with empirical evidence of cases from across the globe. The next section has been dedicated to the Indian case of demographic transition, followed by policy prescriptions. Finally, section 7 concludes the paper.

LITERATURE REVIEW

The discussion dates back to the time of the Marx-Malthus debate, wherein Marx and Engel undertook an onslaught of the Malthusian theory, which stated that population growth was the reason behind mass poverty and hunger. Marx and Engel's problem with the theory was that they considered it to be 'ahistorical'. Marx accused Malthus of using the "external laws of Nature to explain the problem of overpopulation, rather than the historical laws of capitalist production" (Wiltgen 1998). Thus, according to Marx, the reason behind mass poverty and hunger was capitalism rather than population growth. Marx argued that in a well-ordered society, a rise in population growth would lead to greater wealth rather than misery.

This discourse has given rise to two sides of the coin based on the stance around the impact of population growth on economic growth. While citing Cassen's 1994 work, Desai observes that on one hand, the 'population pessimists' believe that rapid population growth poses a threat to economic growth and development by reducing the capital per worker and dampening productivity. There are two broad reasons due to which population might be an obstacle for the economy (Desai 2010). Firstly, low levels of per capita income and scarce resources thinly spread across a large number of people make population growth a constraint for economic growth and the improvement of living standards. The concise response to an increase in population growth is that "every mouth to be fed has two hands that can be put to work." The second reason stems from this and it can be stated that the problem of development is considered to be the challenge of "employing more workers in more productive work to yield larger surplus without depriving people of the basket of goods that they currently consume" (Chandrasekhar, Ghosh & Roychowdhury 2006).

On the other hand, "population optimists" and scholars like Kelley & Schmidt (1996) and Johnson & Lee (1986) believe that population growth can be a boon as a rapidly growing population can increase human and intellectual capital and facilitate the expansion of markets, leading to rapid economic growth. However, Desai throws light on the recent third approach wherein the population composition is more important than the population size of a country. This approach pertains to the theory of demographic dividend and

the ability of a nation to reap its benefits (Desai 2010).

- Demographic Dividend

Also known as demographic gift or bonus or demographic window, the demographic dividend is the rise in the economic growth rate due to the rising share of working-age people in a nation's population (James 2008). In other words, a 'bulge' in the working-age population, irrespective of the size of the total population, is an "inevitable advantage" called the demographic dividend, making age structure matter more than the size of population (Chandrasekhar, Ghosh & Roychowdhury 2006). However, if the growth rate of the working-age population is slower than that of the total population, the demographic dividend turns into demographic drag or burden. This happens due to a lower share of the working-age population (Gaag & Beer).

Changes in the age structure of the population of a nation lead to a period of demographic dividend, by impacting the dependency ratio of a population. Dependency ratio is defined by the United Nations as "the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old)" (United Nations 2006). Thus, in a nation with a large young population and/or a large old population, the dependency ratio will be high and vice versa. This demographic window emerges for a nation due to a demographic transition.

- Demographic Transition

Demographic transition is "a population's shift from high mortality and high fertility to low mortality and low fertility" (Blue & Espenshade 2011). The scholars state that a consequence of this is robust population growth. This feature of the demographic transition can be explained by the fact that death rates fall before a decline in birth rates set in (Chandrasekhar, Ghosh & Roychowdhury 2006). The authors, in their paper, explain in detail the reason behind this pattern of birth rates and death rates.

Initially, death rates decline due to lower infant and child mortality rates which is a result of better policy interventions pertaining to public health, water and sanitation and medical health interventions related to vaccination and antibiotics. High levels of knowledge and low costs facilitate these

factors to be taken advantage of at even low levels of per capita income in a country (Bloom & Canning 2004). With time, a reduced dependency ratio in the middle and older age groups causes the death rate to fall further and the average life expectancy increases. This reduction in the dependency ratio can be attributed to an increase in income, improved lifestyles and better medical technology. On the other hand, reduction in birth rates depends on two factors- age of marriage and fertility rate, both of which depend on a level of development. While high levels of development translate into no social norms prescribing early marriage for women, fertility rates decline due to higher child survival rates, better female education levels and labour market opportunities, reducing the desired family size. Further, the authors stated that the relationship between birth rates and death rates and development not only impacts the rate of population growth but also the age structure of the population (Chandrasekhar, Ghosh & Roychowdhury 2006).

Demographic transition consists of three phases that give rise to three unique age structures. The first phase is characterized by high fertility rates and declining child mortality rates. This leads to a larger young population, particularly below 15 years of age, causing the dependency ratio to rise (James 2008). Apart from lower child mortality rates, child survival increases, causing a baby boom (Chandrasekhar, Ghosh & Roychowdhury 2006).

The second phase experiences a rapid decline in the fertility rates, causing the child population to fall. However, due to high fertility in the past (during the first phase of the transition), the working-age population continues to increase with a high growth rate (James 2008). The lagged fall in fertility rate reverses the baby boom, causing a 'bulge' in the younger age group. This results in the working-age group rising more than it was previously or subsequently will be (Chandrasekhar, Ghosh & Roychowdhury 2006). As a result of this, the dependency ratio of the nation falls as the population consists of more working people than non-working or 'dependents'.

Gradually with time, the bulge created by the baby boom climbs up the age structure. Finally, the bulge enters the old age bracket and the third phase is characterised by a high dependency ratio due to a large old-age population (James 2008).

It is important to note that it is the second phase wherein the demographic dividend can be exploited. This is because, during this phase, the proportion of the working-age population is the highest in the total population (Chandrasekhar, Ghosh & Roychowdhury 2006).

WINDOW OF OPPORTUNITY

Scholars and economists agree on the fact that there is no element of 'automacity' or surety, empirically or theoretically, of the benefits of demographic dividend being exploited to achieve economic growth (James 2008; Chandrasekhar, Ghosh & Roychowdhury 2006; Bloom & Canning 2004). Bloom & Canning (2004) state that the transition in the age structure merely creates the "potential for economic growth" and whether it is taken advantage of or not, depends on the "policy environment" of the nation. The failure to provide conducive conditions for a nation to reap the benefits of its demographic dividend may lead to a demographic drag. A classic example of this is the case of East Asian economies in comparison to the Latin American economy. While a third of the "miracle growth" of the East Asian economies has been observed to stem from their demographic transition, the Latin American case experienced no such growth in the 1950s till the 1980s, even though its demographic trends were similar to that of East Asia. Thus, it becomes imperative to analyse the implications for growth arising from the transition as well as the practical component of realising the benefits of the demographic dividend.

Chandrasekhar, Ghosh & Roychowdhury (2006) analyse the challenge of demography from the angle of generating surpluses over consumption, needed for investment. Due to this approach, the scholars state that the dependency ratio influences the surplus available for investment after current consumption as what is produced by the currently employed is partly consumed by those outside the workforce. Thus, other things remaining constant, a fall in the dependency ratio indicates a higher surplus in the economy. Focusing on the implications for growth, the authors state that the periods with a low dependency ratio are characterized by higher growth, provided the inducement to invest surplus exists. Conversely, in the case of fewer workers in the economy, it is noted that unless the productivity increase raises the output of the smaller proportion of workers enough to neutralise

demographic deficit, economic growth cannot be achieved (Chandrasekhar, Ghosh & Roychowdhury 2006).

This lack of certainty and the conditions around realising the benefits of the demographic bonus nudges one to examine how demographic changes spur economic growth.

- Demographic Changes and Economic Growth

The first aspect to ignite economic growth is that of increased savings. Due to a lower dependency ratio associated with the demographic dividend and partly due to a rise in life expectancy savings of a nation tend to increase (James 2008). A fall in the nation's dependency ratio is associated with a rise in the average savings rate because people save the most when they are working, whereas children and older people (who are the dependents in the dependency ratio) consume more than they earn or rather only consume (Singh & Paliwal 2015). Increased savings at the household level will translate into higher savings for the economy leading to an increase in investment, an aspect imperative to economic growth.

Secondly, with a fall in fertility rates, women are more likely to enter the labour market during this stage, leading to an increase in economic activity, facilitating economic growth. Scholars mention that the reason behind this is that the major obstacle faced by women in joining the workforce was high fertility and consequently, the high amount of time spent in childcare (James 2008).

Thirdly, at the micro-level, people invest more in their own health when they have fewer children as the cost of child-rearing (in terms of the need for the child to be clothed, fed, provided healthcare services, educated and taken care of) falls. This leads to a rise in worker productivity due to better health conditions of the workers, enabling economic benefits for the household. On a similar dimension, at the macro-level, the government can spend more on productive activities because, with a fall in the number of children, public spending on education and health can be diverted by the government to more productive services that promote economic growth (James 2008).

Apart from these factors, the "demographic dividend" school of thought elaborates that there exists some degree of automacity about the relationship between demographic trends and economic outcomes of a nation (Chandrasekhar, Ghosh & Roychowdhury 2006). The authors emphasised on high savings rate being a prerequisite for economic growth and investments in the health and education sectors to ensure a better quality workforce, in terms of skills, health conditions and productivity. They stated that the policy environment of the nation is important and the country must practice encouraging export-oriented policies as a prerequisite, rather than following inward-looking policies. They further elaborated that a rise in life expectancy brings about the need to fund retirement income causing savings to increase. This helps to prove that high savings are related to demographic factors. With high longevity, the private incentive to invest in education also increases by increasing the period over which such investment may be regained. However, the importance is again laid on the government's ability to ensure a flexible economy that can absorb the rapidly expanding labour force. Therefore, it is stated that the benefits of demographic dividend depend on "good policies" which can be captured by the indices of openness of the economy as well as the quality of government institutions in the country.

EMPIRICAL EVIDENCE

Having studied the theoretical aspect of the relationship between demographic trends and economic growth and development, it becomes pertinent to support these theories by the practical component of empirical evidence. Although the relationship between demographic changes and economic development has been analysed in the context of a limited number of countries, most of the studies portray a positive association between the two (James 2008). However, based on the experience of certain countries, there also remain certain exceptions to this theory.

Firstly, an analysis of 78 Asian and non-Asian countries portrayed a strong positive effect of the growth of the working-age population on economic growth. The study contributed to the popular finding that about one-third of the "miracle growth" of East Asia was attributed to the demographic dividend (Bloom & Williamson 1998). Another study that found a powerful positive

association between the age structure pattern and various economic variables, used panel data from several countries since the 1950s to examine the relationship between the average age of the population and economic variables (Behrman et al 1999). Thirdly, a study of the Scandinavian countries that used data from 1980 also found a strong positive association between the "share of economic growth and the share of the working-age population" (Andersson 2001). Another instance that James (2008) quotes is the case of Ireland. Even though the country faced an obstacle of lagging behind in fertility transition among European countries, as the fertility rates began declining faster in the 1980s, Ireland entered a phase of augmented growth which clearly shows a positive association between demographic trends and economic growth (James 2008). Furthermore, a study using panel data of countries from 1960 to 2000 portrays a strong positive association between age structure transition and economic growth in India and China. This remains an important study for India as it states that India is expected to have higher growth prospects than China due to a sharper fall in fertility rates and a bulge in India's working-age population (Bloom et al 2003; Bloom et al 2006). These are the studies quoted to support the positive relationship between demographic changes and economic growth (James 2008).

On the other hand, in the case of several developing countries, such an optimistic association has not been observed. A study established a positive impact of the demographic transition on economic growth in south-east Asia but it failed to find a similar result in the case of South Asian countries (Navaneetham 2002). Another popular instance is that of the experience of Latin America. Its age structure transition is reported to have failed to spur economic growth (Bloom et al 2003). Apart from this, studies focusing on the Indian case state that the demographic transition is not sufficient to augment Indian economic growth (Mitra & Nagarajan 2005; Chandrasekhar et al 2006).

However, it is important to note that even pessimists of demographic dividend do not deny the benefits of it but are only concerned about the institutional bottlenecks existing in countries that may not let the benefits be exploited. For instance, in the study conducted by Navaneetham (2002), the author states that the absence of a clear association between demographic changes and economic growth in South Asia is due to a lack of openness to

trade as compared to south-east Asia, with relatively more openness to trade. Similarly, Bloom et al (2006) mention that the age structure changes create the potential for economic growth but whether it is realised or not, depends on the policy environment, especially openness to trade. In addition to this, Chandrasekhar (2006) also quotes the bottlenecks related to education and health in India that stop the country from ensuring a quality workforce, an important aspect of economic growth (James 2008).

Even though there are studies that do not portray the positive association between demographic changes and economic growth, those studies focus on the bottlenecks in the countries that constrain the beneficial demographic dividend. Therefore, the positive association between age structure transition and economic growth in a nation is supported by sufficient empirical evidence.

Having studied the theoretical and the empirical aspects of the concept, the paper now focuses on the case of India.

THE INDIAN CONTEXT

Being the second most populous country in the world, India had a population of 136.6 crore or 1.366 billion as of 2019 (United Nations 2019). In addition to this, as mentioned earlier, growth prospects for India have been estimated to be better than that of China, the most populous country of the world. These factors make it pertinent to study India's growth story and analyse the role of demographic changes in India's economic growth.

- Demographic Transition in India

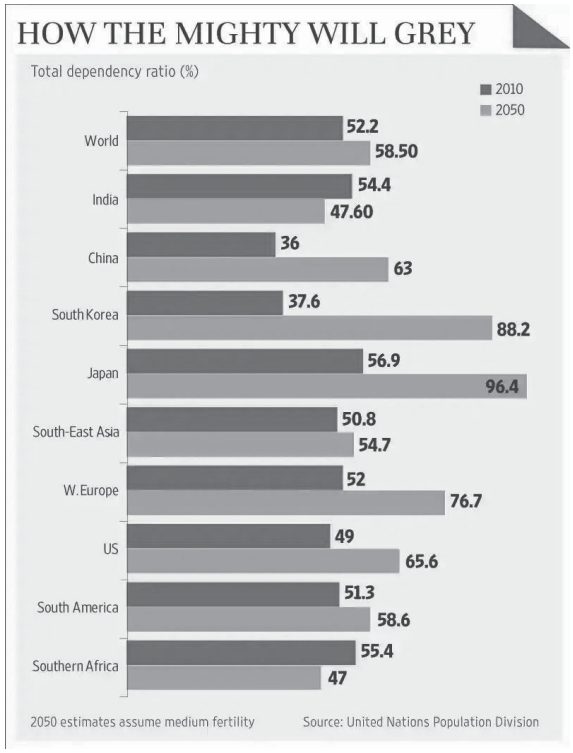
For the first two decades of development in the country, post-independence, the infant mortality rate started declining but the fertility rates remained somewhat stagnant. This would have led to a rise in the population of young people due to higher child survival. During the next three decades, the fertility rate and the infant mortality rate dropped sharply in India. This had a similar effect on the population as stated above. The ramification of this, complemented by a fall in mortality in the higher age groups as well, was a sharper decline in crude death rates than birth rates in the country. Thus, due to a bulge in the working-age population, India got its window of

opportunity in the mid-1970s or early 1980s, as per this study. This demographic dividend was expected to extend till 2025 due to a projected low dependency ratio of 48. Thus, as the dependency ratio in India fell from 79 in 1970 and the baby boomer generation transitioned into the working-age population, the country entered the phase of demographic dividend in the 1970s (Chandrasekhar, Ghosh & Roychowdhury 2006).

As per the World Bank estimates, India's population of 15-59 years is expected to increase dramatically from 757 million in 2010 to 972 million in 2030, causing the addition of over 200 million workers in the economy. This will also lead India to contribute immensely to the global workforce by increasing the global labour supply. During this period, the working-age population is expected to fall in most developed regions of the world, including China (a decline from 913 million to 847 million workers) (Thomas 2014). Similarly, as per the UN projections for 2050, India's dependency ratio falls to 47.6% but China's ratio spikes to 63% and Korea's ratio increases to 88.2%. In the developed world, the US will have a dependency ratio of 65.6%, Western Europe's will be as high as 76.7% and Japan's ratio will increase to a staggering 96.4%. Figure 1 shows the estimated dependency ratios for various countries for the years 2010 and 2050, to compare. Thus, with the world's dependency ratio being 58.5%, India among the only handful of other countries will remain with a dependency ratio below 50%. Thus, while India's demographic dividend provides the economy an opportunity to benefit from it, most of the economies in the world "turn grey".

Thus, this will not only help India reap the benefits of its demographic bonus, but also give the country an edge over other superpowers and developing countries by being a major labour supplier in the global markets (Chakravarty 2014).

Figure 1: "How the mighty grey": Dependency Ratios of India and other countries



A Comparison with China

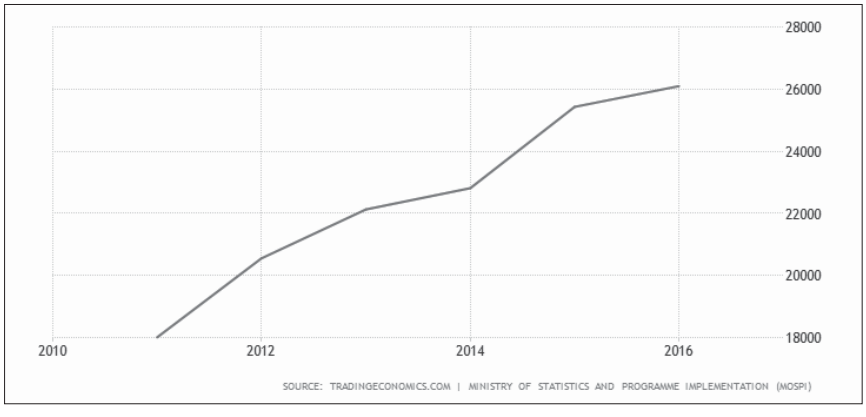
A comparison between China and India is imperative concerning this as being the most populated country in the world and portraying a faster rate of economic growth than India, the Chinese experience can teach lessons to India for its growth story.

The first aspect of comparison between the two countries is the dependency ratio. A higher dependency ratio indicates that the working population is low and the overall economy faces a burden of supporting and providing social services for children and older people who are economically dependent. As mentioned earlier, by 2025, India's dependency ratio is expected to fall to 48% due to continued fall in child dependency and only increase to 50% by 2050 due to an increase in the old-age dependency ratio. On the other hand, China's One Child Policy seems to have created a disproportionately large

elderly population. This is expected to pose a burden for China around 2030 with a staggering 400 million people aged above 60 years. Thus, while China expects to face hurdles due to a large old age population in 2030, during the same time, India is set to experience high economic growth with an increasing young population, giving India an edge over China (Singh & Paliwal 2015). Figure 1 throws light on this more clearly, showing that by 2050, while China's dependency ratio will become as high as 63% (large old age population), India's dependency ratio will remain lower than 50%, setting India at an advantage (Chakravarty 2014).

Secondly, the savings rate is the factor of comparison. This is because, with a fall in the dependency ratio, as in the case of India in the future, the average savings rate of the nation is observed to rise. India's saving rate has been rising since 2003. Increasing from 29.5 in 2011 to 33% in 2015, India's saving rate is comparable to that of the 'Asian Superpowers', where most countries save above 30%. Even though China's saving rate was 40% in 2015, people are less willing to spend due to limited social safety nets. However, the reason for India's saving rate increase is not mere unwillingness to spend, but it is due to significant improvements in the government's fiscal conditions and high corporate savings. However, scholars state that even in the absence of these factors, India is expected to increase its savings rate above the 30% benchmark in the next 25 years due to its falling dependency ratio (Singh & Paliwal 2015). Figure 2 throws light on the rise in personal savings in the country to Rs. 26099.21 billion in 2016.

Figure 2: Increase in Personal Savings in India (2010-2016)



Along similar lines, the third basis of comparison is the investment to output ratio. Even though India's investment to output ratio was 31% in 2015 as compared to China's 48%, India is expected to raise this ratio significantly in the future (Singh & Paliwal 2015).

Thus, the aforementioned arguments by Singh and Paliwal (2015) show that India's dependency ratio is expected to decline sharply as compared to China. The scholars state that this an important implication for Indian economic growth as India is believed to enter its "Goldilocks" period, while that of China is over. India seems to have this advantage over China because India's dip in the dependency ratio is 'more gradual and longer lasting' than that of China, as per the scholars.

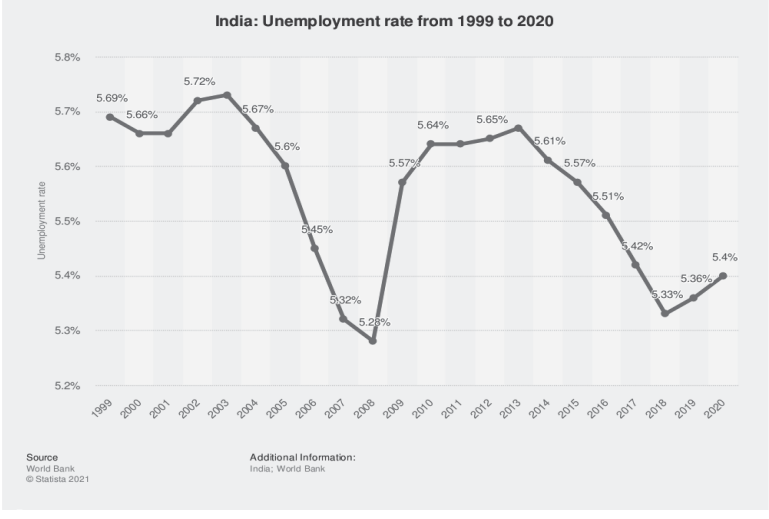
Limitations to India's Demographic Dividend

Even though the previous section throws light on the growth prospects of India and compares them to be better than that of China, in reality, there exist certain factors that limit the potential of benefiting from the demographic dividend in India. Rather, these factors, if not amended or focused on, may cause a demographic drag. The paper analyses these factors and their implications, one by one.

Unemployment in India

The first and foremost obstacle is that the extent of growth that has occurred in India is not enough to absorb a rapidly rising workforce, generated by the demographic dividend. Between 1993 to 2000, employment generation in India experienced a drastic deceleration, with the lowest rates of rural employment growth post-independence and urban employment generation falling as well. It has also been stated that despite employment growth, unemployment levels rose in India. As of 2006, an 8% increase in unemployment was recorded for urban and rural males and a 9-12% increase for the female labour force (Chandrasekhar, Ghosh & Roychowdhury 2006). Subsequently, in 2019-20, the total unemployment rate in the country was 39.4%, indicating the health of the Indian economy (Sharma 2020). Figure 3 shows the fluctuations in the unemployment rate in India from 1999 to 2020.

Figure 3: Unemployment rate from 1999-2020 in India



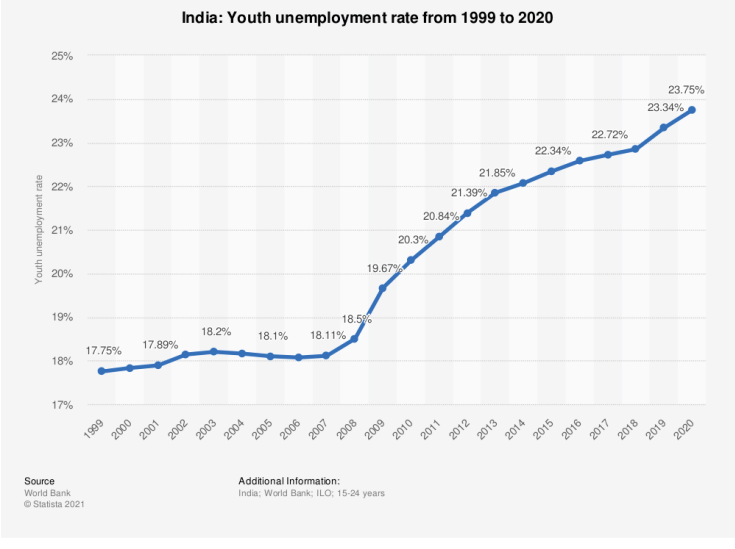
Apart from this, there was also a significant change in the pattern of employment. Along with a fall in wage employment of the country (Chandrasekhar, Ghosh & Roychowdhury 2006), the most significant change has been observed in agricultural wage employment (Chandrasekhar, Ghosh & Roychowdhury 2006; Thomas 2014). Between 1999-2000, agricultural wage employment fell at a rate of more than 3% per year (Chandrasekhar, Ghosh & Roychowdhury 2006). Subsequently, the share of agriculture and allied activities in India's GDP fell from 35.1% in 1983 to 14% in 2011-12. The ramification of this was a fall in the total employment in the sector, from 68.2% to 47.5% during 1983 to 2011-12 (Thomas 2014).

Youth Unemployment in India

The young population of a developing country like India creates a window of opportunity to improve revenue from services, increase labour productivity, increase domestic production and savings, reducing the burden of old people on the working-age population (Singh & Paliwal 2015). However, the second constraint to India's demographic dividend arises from the declining and/or stagnant labour force participation rates for the youth in the country. Even though the aggregate labour force participation rates have increased, the same is not the case for the Indian youth. In rural areas, while the male rural youth experienced a fall in labour force participation rate, the female

rural youth experienced a somewhat stagnant labour force participation rate. However, the female youth in urban areas aged between 20 to 24 years experienced a rise in the labour force participation rate from the 1999-2000 levels. The shocking fact is that despite no significant growth in the labour force participation rates for both genders, across rural and urban areas (except for urban women between 20-24 years of age), the rate of open unemployment among the youth has increased over time. One of the reasons for a rising unemployment rate among the youth is the 'delayed entry of youth into the workforce due to extension of years of education'. However, this cannot be the dominant reason as an increased level of education is a positive sign of a greater degree of skill formation for the young labour force. Such declining labour force participation rate along with increased unemployment rates among the young workers causes two adverse ramifications. Firstly, it may lead to the country missing its window of opportunity as the economy is unable to produce enough suitable jobs to employ the young population productively. Secondly, the concern that arises is the negative social impact of an increased number of young unemployed, including educated and skilled unemployed (Chandrasekhar, Ghosh & Roychowdhury 2006). Figure 4 portrays the ever-rising levels of youth unemployment rate in India from 1999-2020, spiking from 17.75% to a staggering 23.75%.

Figure 4: Rise in Youth Employment Rate from 1999-2000



Gender Bias

In India, there exist enormous disparities in the areas of education, literacy and employment between women and men. These differences not only occur in the opportunities provided to men and women but also in terms of attitudes and outdated social norms that prescribe women to not take up jobs, not complete their education and other issues rooted in family responsibilities (Chandrasekhar, Ghosh & Roychowdhury 2006). A classic example of this is the fact that urban males benefited disproportionately from the growth of non-agricultural employment, other than construction, as compared to women in urban areas, during the period of 2004-05 to 2011-12 (Thomas 2014).

Apart from this, a bigger hurdle is the problem of low women's labour force participation rate in India. In a comparison study with China, there seems to exist huge differences between the women labour force participation rates of the two countries. As per estimates of the International Labour Organisation, for women aged 15 years or above, 68.9% of Chinese women are in the labour force as compared to a mere 34.2% of Indian women in the Indian workforce. The author attributes this to the fact that in India, home-based activities for women are not accounted for in the labour market statistics. Furthermore, a comparison of work participation rates of Chinese women and Indian women shows that Indian women of all age groups lag behind Chinese women. The study further discusses that when the Indian dependency ratio is looked at from the angle of non-working age to working-age population, India's advantage is clear with 0.48 in 2030 as compared to China's dependency ratio of 0.50. However, when the women work participation rate is taken into account to estimate the dependency ratio, India's dependency ratio expected in 2030 is way higher at 1.26 than that of China's at 0.89. Thus, the author claims that there exists no reason for India to reap its demographic dividend as compared to China (Desai 2010).

Health

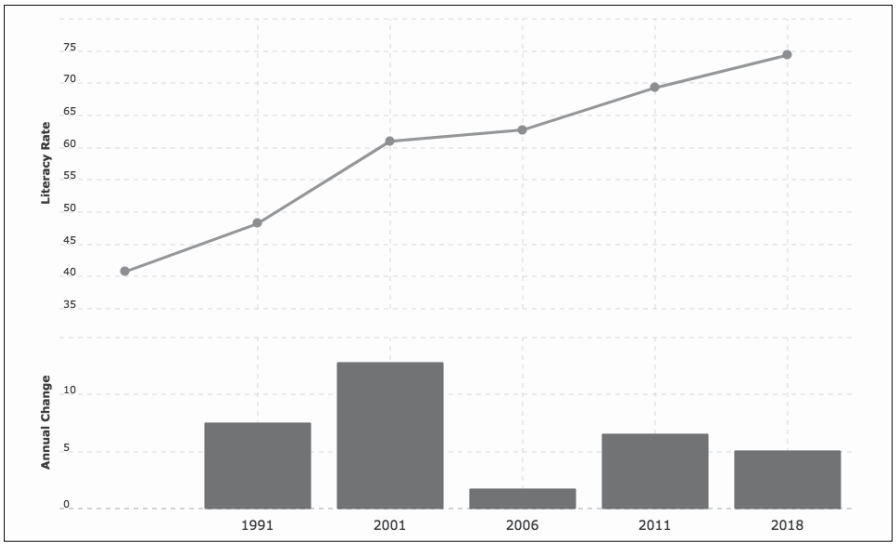
The next field wherein India experiences a deficit is the health sector. Changing age structure can lead to a rise in the supply of workers in the country but that is not enough to reap the country's demographic dividend till significant improvements are ensured in the health status of both the

working-age population and non-working-age population. This is because, with bad health conditions, there will neither be an increase in labour productivity nor a decline in worker absenteeism. Also, lack of proper health services and improvement in health indicators may even refute the savings-growth causality such that increased longevity may not be accompanied by higher savings of the working-age population due to a rise in disease burden across all age groups, causing increased healthcare expenditure. While some health problems like asthma and tuberculosis may be concentrated to the younger and/or older age population and others like malaria and jaundice are evenly distributed across age groups, reproductive health problems, HIV/AIDS and mental health issues are likely to affect the bulge in the working-age population. As a result, maternal mortality and child and infant deaths must be worked upon to reduce, through investment in infrastructure and advocacy in India (Chandrasekhar, Ghosh & Roychowdhury 2006).

Education

This is another sector where the country faces a deficit. The quantity, quality and relevance of education is important as it determines the quality and skills of the future workforce of the nation. Literacy and education in India suffered setbacks during the period of liberalisation due to an ignorance of the importance of the two in determining the degree of economic growth and development of the economy. The spread of literacy rates over the years of globalisation till 2004-05 remained slow. As of 2004-05, only 21.2% of rural males and 10.2% of rural females aged 15 years or above possessed the minimum education of secondary school or more. The corresponding figures for urban areas were 48.3% and 35.6% respectively. The added problem to this was that even the educated of India found it difficult to get jobs, appropriate to skills or otherwise along with little to no vocational training in the country (Chandrasekhar, Ghosh & Roychowdhury 2006). Figure 5 shows the literacy rates in India since the period of economic reforms in 1991 when the education sector was neglected to as recent as 2018. It can be imputed from the chart that even though the literacy rate in India has been rising over the years, the annual changes since 2001 have not been very significant.

Figure 5: Literacy Rates in India from 1991 to 2018



Source: World Bank; Macrotrends

India's IT & ITES sector

The next hurdle to India's demographic bonus is related to the IT sector of India. Scholars state that India's demographic dividend can be encashed through the growth of the IT-ITES sector in the country as it accounts for a huge share of the country's GDP and industries. The sector enjoyed a rapid growth rate (compounded annually) of more than 30% between 1998-99 to 2004-05. It is important to note that this quick expansion of the sector can be attributed to external demand or the exports of software and ITES, which rose at an annual compound rate of 38% p.a. since 1997. While the growth of this sector is impressive, the obstacle it poses is its minimal contribution to employment despite such high growth levels. As of 2006, it was found that the sector only employed a bit more than 1 million workers out of a total workforce of more than 415 million in India (Chandrasekhar, Ghosh & Roychowdhury 2006).

POLICY PRESCRIPTIONS

The aforementioned constraints on economic growth as a result of

demographic dividend and the claims of the policy environment being a determinant of the benefits of demographic dividend in a country, make it imperative to study various suggestions and policies that need to be undertaken.

Firstly, Chandrasekhar, Ghosh & Roychowdhury state certain general suggestions which can enable a country to reap the benefits of its demographic dividend. The experts suggest that the dependency ratio should be defined as the ratio of actual non-workers to workers rather than the ratio of non-working age population to the working-age population. This will take into account the problems of unemployment and underemployment leading to better policy-making for employment generation. Their second recommendation states that even in periods with a bulge in the working-age population, large-scale unemployment and low expenditure on education, both by the governments and households, erodes the ability of a country to exploit the demographic dividend as and when it emerges (Chandrasekhar, Ghosh & Roychowdhury 2006).

While the aforementioned recommendations are in general for countries to reap the demographic dividend, the next set of policy prescriptions is specifically for India's growth story. Firstly it has been identified that there exists a deficit in the areas of education and health in India. This needs to be resolved by increasing and improving education at the primary and secondary levels, especially in the less developed areas of the country. Similarly, higher public spending in health is also required to curb the deficit in the health sector. As observed earlier, another obstacle faced by the Indian economic growth is that many women in the working-age population choose not to take up jobs due to personal or family responsibilities. Scholars elaborate that household work must be reduced with the help of appropriate technologies and women must be empowered by reducing gender disparities in society. In order to do this, it is suggested that narrow mentalities and social norms should be broken down through proactive policies and interventions. An instance of such intervention is the reservation of positions for women in the public sector jobs and higher grade positions. Furthermore, a 'gender-equitable environment' is emphasized upon so that women are free to access and use family planning methods without any social or physical barriers. Implementation of policies needs to be undertaken that

help women improve their education and equip them with skills to compete for higher-paying jobs. Proactive policies should ensure that women have equal access to mass media and technology. This will be an important step towards enabling women to make more informed decisions for themselves as well as their children. Finally, the most important aspect of employment, without which economic growth cannot be achieved, has been focused upon. The authors identify the need to create "remunerative and productive employment" for new entrants into the workforce by ensuring mobility of labour both from rural to urban areas, and across and within sectors of the economy. This in turn requires a 'smooth functioning labour market' and availability of skills that are in demand along with better-educated and skilled workers, earning higher incomes. Apart from this, it is also necessary to create jobs in the 'knowledge-intensive sector' of the country by adding more value to it as the level of education in the country increases. The experts conclude by saying that in addition to this, the reaping of the benefits of demographic dividend depends on whether the public and private sector of the economy have the "political will and foresight" to not only create new jobs but also honour them with quality training to the new workforce, encouraging trade, reforming the education system, raising capital to support innovation and implementing policies that instill a sense of confidence in the nation regarding the economy (Singh & Paliwal 2015).

CONCLUSION

With regard to the aforementioned arguments, it is clear that India's growth prospects in alignment with its demography look optimistic. However, the factors discussed that cause obstacles in the economic growth, may lead the population growth to be a burden on the economy or the case of demographic drag, rather than reaping the benefits of the demographic bonus. Thus, it is pertinent for the government to work on policies in the areas of education, health, women empowerment and creating a more gender-equitable environment. This will ensure that the bottlenecks in the way of India benefiting from its demographic dividend are reduced and removed, setting India's path towards a high economic growth rate due to a bulge in the working-age population of the country.

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An Analysis of Thrift Industry in India

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ABSTRACT

Growing concerns about worsening climatic conditions have created a need to revolutionize the way industries have been working traditionally and in the wake of this fashion industry has undergone a major change too. The inclination towards thrift culture is increasing across the globe and the same prompts this study. It focuses on the emergence of thrifting practices and assesses the scope of its future in India. The paper analyses the existing and potential demand and supply aspects of the thrifting industry by conducting a survey, and the theoretical and business models further support the observations. It also involves understanding the marketing practices, sourcing strategies, and plans adopted by various budding second-hand retailers to lead their business.

The research concludes by highlighting the existing challenges in the industry and recommendations for overcoming those challenges. This paper focuses on understanding customer/seller psychology through conducting primary research in the form of questionnaires and interviews.

This study also inspires and encourages other researchers to conduct future studies by utilizing the findings from this study.

Keywords: Thrifting, Second-Hand Markets, Shopping, Sustainability, Fashion Industry, Pop Up Stores

INTRODUCTION

The fashion industry has been growing at an insurmountable rate, and it expects to become a $3.3 trillion industry by 2030. But at what cost? Is it the 92 million tons of waste annually generated or the excessive consumption of natural resources during the production? The paper starts by giving a brief overview of the fashion industry and its societal costs, ultimately leading to a thrift culture.

Exploring, Experimenting and Adopting have become new normal for all of us. The fashion industry is no different from this. Earlier, the collection of fashion stores changed according to the seasons. However, now with trend-centric collections, the frequency of change has increased to about 50 times a year, implying that a piece of cloth becomes trendy and goes out of fashion almost instantly. Following these trends has led to the emergence of numerous fast fashion stores, which in turn proved to be detrimental to the environment. Sustainability being the center of concern for the fashion industry and rising consumer awareness has led to the evolution of the 4Rs of the fashion industry- Reduce, Reuse, Repair and Recycle. Thrift stores are a culmination of the need to combat this huge global fashion consumption problem. Selling old clothes is an invention for the age-old textile industry, but it is gaining rounds due to its huge value creation for socially responsible customers. Over the past decade, we have seen thrift stores going from rags to riches, quite metaphorically as well as literally.

Thrifting is a popular concept in western counterparts globally; however, India is still exploring potential opportunities. This paper extensively explores the emergence of the resale industry in India in the wake of the above-stated reasons and further analyses its prospects and success.

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[1] Boston Consultancy Group. (2019). *Pulse of the Fashion Industry.* Retrieved from http://media-publications.bcg.com/france/Pulse-of-the-Fashion-Industry2019.pdf

[2] BBC. (2020, 7 13). *Why clothes are so hard to recycle*. Retrieved 2020, from https://www.bbc.com/future/article/20200710-why-clothes-are-so-hard-to-recycle

OBJECTIVES

1. To understand the constraints in the development of thrifting in India.

2. To analyze the needs and requirements of the target market.

3. To assess the future of thrifting in India.

REVIEW OF LITERATURE

The literature review and theoretical frameworks served as a basis for generating research questions used to provide focus and guidance during the study. Several studies have taken place that shed light on several aspects of thrifting.

Jinhee Han (2013) conducted a study to understand second-hand retailing where he examined unidentified second-hand retailers' business practices and marketing strategies leading to business successes. It was found out that although all types of thrift stores have similarities in terms of dealing with used items, however, there are several participants like consignment and vintage store owners who operate for profit. At the same time, many others run as non-profit organizations and contribute to their neighbors and communities. The study also presented findings of second-hand retailers' unique resources by classifying them into "physical capital resources", "organizational capital resources", and "human capital resources". The study also discusses the Product strategy, Price strategy, Promotional Strategy, and Customer relationships strategy to understand the marketing and management plans.

The students of the NIFM, Mumbai, conducted an interesting study, which assessed the feasibility of thrift stores in College Campuses in Kharagpur. Their results indicated that approximately 37.2% of consumers were only ready to convert into 100% thrift store customers. Hence, the future of the concept seems dubious. They also concluded that the consignment model of business is a successful model with low investment as nothing is paid for inventory until sold, making thrifting an excellent startup idea.

To analyze the scope of the thrift industry in future, it is essential to study the

factors impacting the customers' behaviour (Darley & Lim, 1999) examines the effects of store image and general attitude toward second-hand stores on "shopping frequency'' and "distance travelled''. The results of the study depicted that the more frequent the shopper is, the higher is the inclination towards the specific store and its merchandise quality. Favourable quality perception and store image also convince the customers to drive the extra distance to patronize their stores. Concludingly, managers must ensure a broad-based level of awareness among the target audience about the changing face of second-hand goods stores, hereby enhancing their general attitude toward second-hand stores.

EMERGENCE

Since its inception, the second-hand apparel industry has seen growth and potential, estimated to reach a $51 billion mark by 2023.

While traditional methods of shopping burdened the pockets of the growing middle class and had catastrophic impacts on the environment, there was a need to find an alternative, and hence it led to the emergence of the second-hand market or what we now call "thrifting". **THE SALVATION ARMY** and **GOODWILL INDUSTRIES** were the two pioneers of the industry. During 1889, these non-profit organizations conceptualized thrifting to mobilize the impoverished people and to recycle unused and unwanted clothes. Despite the financial crunch faced by a vast majority of the population during the great depression, thrifting enabled them to afford fashionable clothes at reasonable prices. The concept of thrift stores further intensified in the US, due to widespread endorsement by celebrities such in programs like America's next top model. Over the period, the industry has attracted global attention across all countries, including India. Lately, the Indian second-hand apparel industry has transitioned from street-side pop-ups to online thrift stores and has now become a secondary source of income for many. However, the concept is still in its nascent stage in India.

5.UNDERSTANDING THE DEMAND & SUPPLY SIDE OF THE THRIFT INDUSTRY

This section talks about the demand and supply mechanism of the thrift industry and presents the rationale for engaging in thrifting.

Demand

The growing popularity of thrifting among the masses is due to a plethora of reasons. First of all, the increasing appetite for fashionable and trendy clothing has led to fast fashion stores' evolution. These stores mass-produce the clothes at low cost in response to the latest trends that will be going out of cycle the next week, and this business model itself is detrimental to the environment. Hence, due to the enormous production amount, the apparel industry's carbon emissions might cross 60% by 2030.

The second-hand apparels provide a solution to the disastrous environmental impact created by the textile industry from its production to its disposal. According to the World Wildlife Fund (WWF), 2700 litres of water is required to produce the cotton needed to make a single t-shirt thereby consuming millions of gallons of water and tons of harmful pesticides. The thrift industry facilitates sustainability by exporting used textile, which results in estimated annual savings of 190000 tonnes of Co_2[3] and reduces water consumption by 18 billion gallons. Access to a wide variety of cheap clothing has led the consumers to shop more frequently, but each garment is kept half as long as it used to be, and as a result, 57% of all discarded clothing ends up in a landfill. Though the foundations of thrifting lie in environmental sustainability and reusing and recycling, it has now gained popularity among Gen Y and Gen Z because of their desire of owning a vintage collection, exclusive celebrity and designer clothing at affordable prices. For whom shopping is a therapy, thrifting has proven to be a blessing. Hence, ranging from being pocket-friendly to environmentally sustainable and satisfying the longing of vintage closets, thrifting seems to be the resort to all the inefficiencies of the fashion industry.

Supply

Thrifting is not just benefitting the consumers, but it is also an attractive proposition for aspiring entrepreneurs to enter this industry. Many people usually have some extra clothing in their wardrobes that is left unused over years even though they are in good condition, though donating is a lucrative

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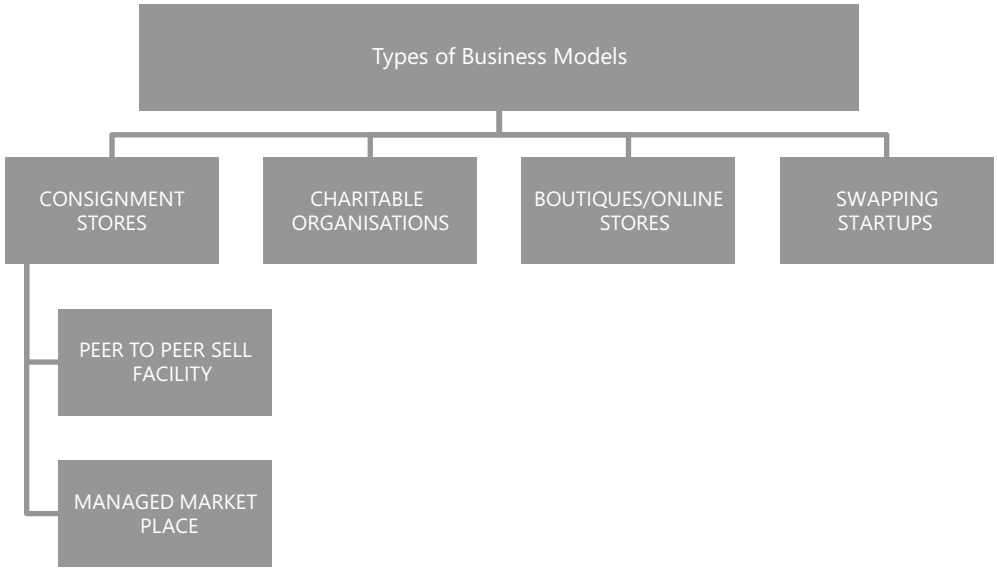
[3] Planet Aid. (2017, January 20). Retrieved from Benefits of the Secondhand Clothing Industry: https://www.planetaid.org/blog/benefits-of-the-second-hand-clothing-industry

alternative to many, making money out of it is an attractive business idea as well. What further prompts these young minds to give wings to their aspirations are the favourable market entry conditions. Lower initial investment due to the nature of the product sold, low operational costs due to the digitization of the marketplace and more or less healthy returns have resulted in an uptrend in the industry. The Pandemic has helped them leverage everybody's digital presence to their advantage by helping them to reach out to thousands and generate a secondary source of income while sitting back at home. Being stuck up during lockdown provided them with an opportunity to harness their creativity, leading to a rapid upsurge in the number of online thrift stores even while maintaining a healthy competition among themselves. Oakark and First Second-Hand are examples of online thrift stores that started during Pandemic only.

BUSINESS MODEL

While in the USA, the market has become highly organized and formalized through brands like Poshmark, Depop, The Realreal and ThredUp; a similar trend is also observed in India where people are just starting to consider thrift business their full-time occupation rather than a temporary muse/hobby. There are different kinds of business models existing in this innovative industry. The four major categorizations of operating business models are-



A. CONSIGNMENT STORES: These stores provide a platform for sellers to sell their used goods to buyers and earn a percentage of sales revenue. Such stores operate either on a peer to peer sell facility or as a managed marketplace.

i. Peer-to-peer sell facility: Such stores do not maintain any inventory of their own and merely act as facilitators of transactions by providing a platform to upload goods on the website from where the buyers can browse the required items.

Examples-Poshmark, Tradesy, Goat, Grailed. These companies might intervene in the transaction by performing certain quality checks on the products sold under particular circumstances. For example-A brand named Poshmark provides authentication services for articles sold above $500.

ii. Managed marketplace: These stores collect second-hand clothing from various sources and perform significant quality control and inspections, ensuring only standardized goods are available to their customers.

Examples- Thredup, Fashionphile, TheRealReal and Rebag

B. CHARITABLE ORGANIZATIONS: Several non-profit organizations fund their services not through grants but also by earning revenue through alternative means such as by operating a thrift store. Such stores usually establish independent stores at diversified locations where they collect donations in-kind, serving as its inventory.

Example-Goodwill Industries International, "Out of the Closet", etc.

C. BOUTIQUE/ONLINE STORES: Such unorganized stores dominate the Indian thrift market. These stores usually source their inventory from rag shops, vintage fair, swap-meets; however, in India, they are majorly dependent on their own overfilled wardrobes or reach out to their close friends and relatives to generate supplies.

Example- "First Secondhand"-an Indian thrift store that is also operating

through social media platforms.

D. **SWAPPING STARTUPS**: There is a peer-to-peer service available in this mode, which helps people swap their closets by providing a sharing platform.

Example -This for that, a one of its kind India-based startup is a "place for like-minded women to share their closets, tastes and trust.

OPERATION CYCLE

Even the most informal form of thrift stores follow a step-by-step process to enhance their sales right from decoding pricing strategies, upscaling supplies and managing customer grievances. Every kind of store has its specific approval process to decide which goods they shall pass on to their customers, ensuring that only authentic goods reach out to them.

While managed marketplaces have a standardized policy to serve only newish second-hand clothes to customers, the local thrift stores also do not leave any stone unturned to gain their customer's trust by ensuring proper fixing and mending of even slightly damaged cloth. In the wake of the Pandemic, the need for proper sanitation has even enhanced. After upscaling, certain factors like original MRP, life, usage and condition of the product are kept in mind while pricing the goods. Other brands that even refurbish or redesign the goods before selling them also consider its costs to determine final prices. After determining these prices, the final sale is either made at these predetermined rates or through an auction-based model (where the highest bidder becomes the lucky winner of that clothing). However, this sale is not as smooth as it appears to be and comes up with various customer queries and grievances that these thrift store operators need to look after personally. The way they tackle the grievances varies from store to store.

COMPETITION

Since the market is fragmented in small business units, they provide tough but healthy competition to each other. This increase in the number of sellers also helped in the rapid expansion of thrifting. E-commerce websites pose

heavy competition to these thrift stores by their aggressive discounting policies and making their new products available to customers at similar prices to that of thrift stores. However, thrift store owners believe that the personalized nature of thrift stores will always have the edge over the generic goods of e-commerce websites in the consumers' minds. They also believe that people will always give preference to this ethical and sustainable slow fashion. The study by YouGov further backs this belief as its recent survey shows that 83% of people emphasize sustainability while buying fashion items. However, the material, fit, design and price also have a more controlling influence.

RESEARCH METHODOLOGY

The data collected through both primary and secondary sources has been analysed using quantitative as well as qualitative approaches. To analyze customers' points of view, the researchers conducted a questionnaire survey (google form) for a sample size of 236 well-diversified respondents. Though the respondents majorly belonged to Gen Z and includes disproportionately more females but it depicts actual shopper practices. The questions included were based on the studies conducted by the students of the NIFM and Darley and Lim,1999. The google form aimed to analyze consumer behaviour and the factors impacting shopping practices. The data collected from questionnaires has been worked out to produce graphs which are further analyzed to derive observations.

Further to understand the thrift store operators' views, two telephonic interviews with the founders of "First Second Hand" and "The Thrift Shop" and a google form-based interview of the founder of Oakark were also conducted. The discussion revolved around understanding their business models, customer demographics, challenges in the industry and growth prospects of the industry.

Secondary research was also done based on the literature review of various academic journals, research papers and articles written on the topic of thrift shopping and ideas surrounding it, which helped us analyze the prospects of this segment of the fashion industry.

DATA ANALYSIS

A descriptive analysis of primary data collected through questionnaires and interviews-

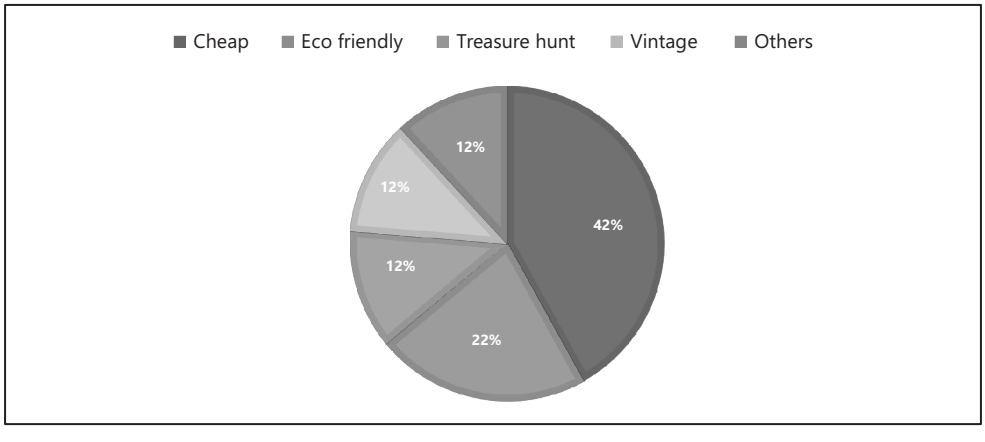
A. QUANTITATIVE RESEARCH

The data analysis is based on the information gathered from the responses collected through the Google forms (e-survey) portal. The results are then presented in the form of graphs and charts.

The researchers collected the data through questionnaires that were filled manually across the country and then analyzed.

Based on the responses of the survey conducted-

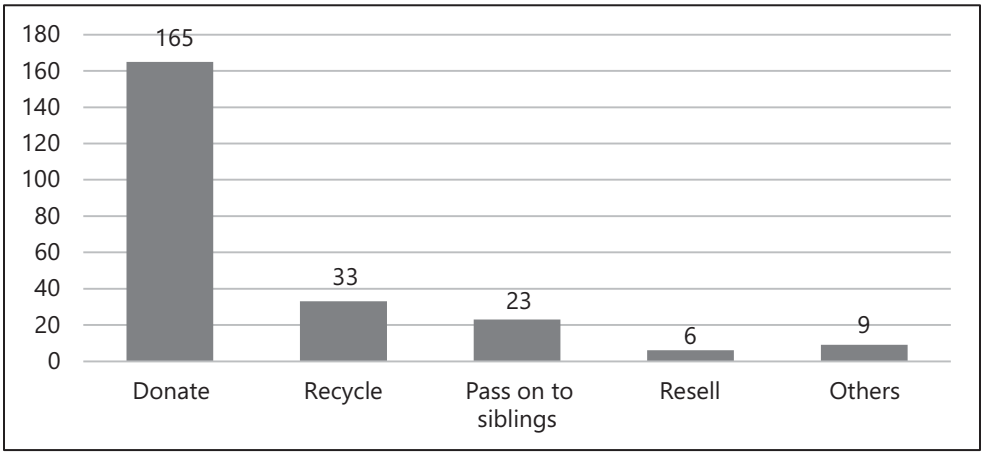
Figure 1- What comes to your mind when you see the word thrifting?



This shows that approximately 42% of respondents (99 out of 236 respondents) merely relate thrifting with cheap shopping.

Note: Others include views like Changing, unusual, limited use, no idea, sale, and many more.

Figure 2- What is/are the preferred mode(s) of disposal of clothes that you no longer use/ require?



Though it is great to find that most people donate their clothes and promote social welfare behaviour, but these statistics also reveal that reselling in India is still at a very nascent stage as just 2.5% of people resell their clothes after using them.

Note: Others include responses like giving it to the housemaid or keeping it in the wardrobe only.

Figure 3- How much is branding important to you?

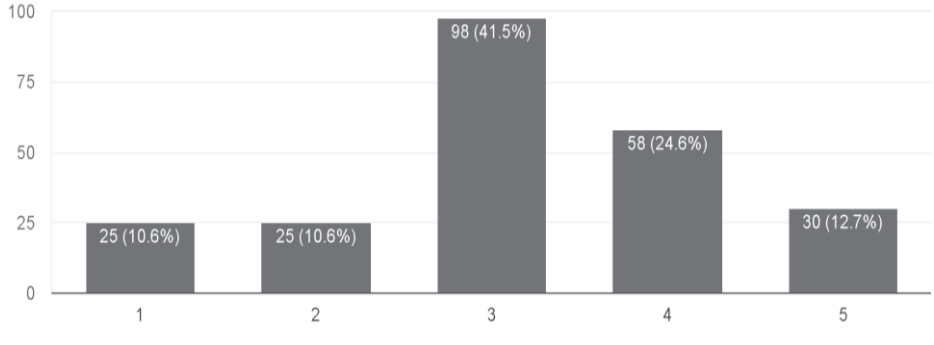
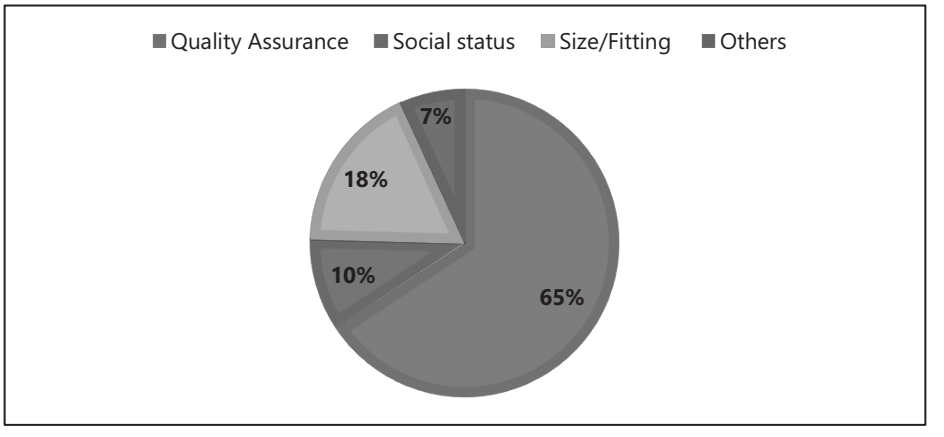


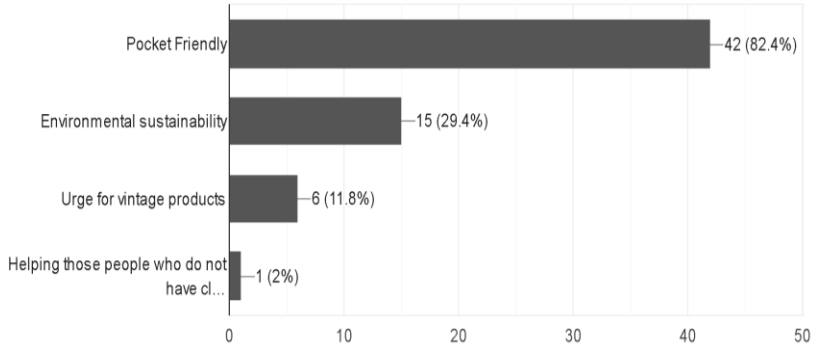
Figure 4 – Why is branding important to you?



Others here include reasons like – Variety of colours , trendy outfits, or branding is not at all important to them.

The charts placed above clearly indicate that a considerable chunk of people opt for branded goods because of quality assurance. However, thrifting in India lacks branding and recognition, which could assure the customers that these products have been inspected and upcycled properly and are safe to use.

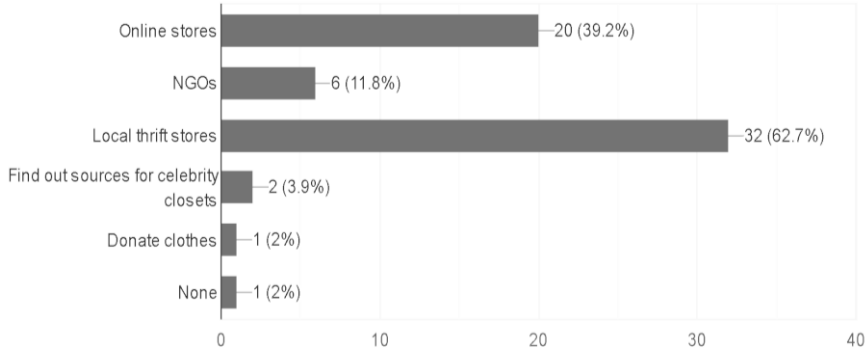
Figure 5- What convinces you to get involved in thrifting?



The survey indicates that only 21.6% of total respondents were practising thrifting for genuine reasons, and 82.4% of them were doing it just to reduce the heavy burden of expensive clothing from their pockets. Though it should be noted that what arises out of need might die sooner or later however what

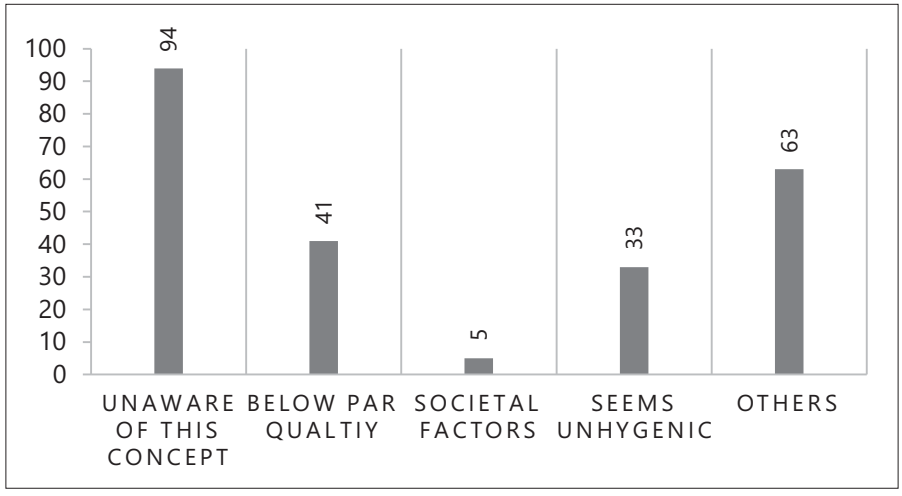
arises out of desire lasts long.

Figure 6– What mode of thrifting is usually adopted by you?



Out of 51 respondents who practice thrifting, the chart above replicates that thrift shop owners are available through various mediums to their target customers like online stores, NGOs, local thrift stores, and even avenues for celebrity closets.

Figure 7– Why don't you engage in thrifting?



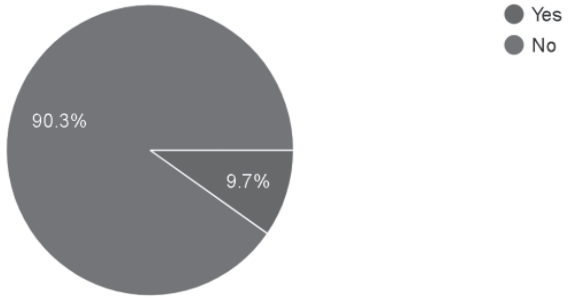
Others include reasons like -Lack of belongingness, Uncomfortable in wearing them, Lack of availability of thrift stores, no particular reason.

While assessing the future of thrifting, it is vital to assess the reasons that stop people from getting involved in thrifting?

As per our respondents, the major reasons revolved around:

1.Unawareness

Figure 8– Did you ever participate in any thrift drive or renewal workshop?

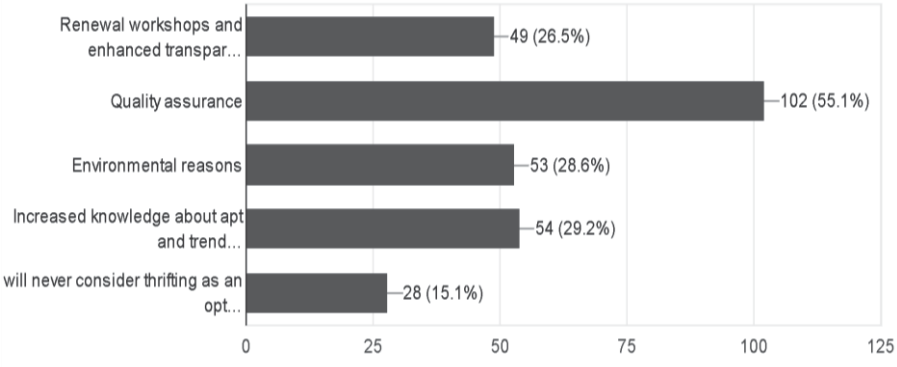


As the statistics show that out of 185 respondents who are not currently involved in thrifting, 90% of them have not attended any renewal workshop where they could have learned about the realities of thrifting.

2.Hygiene issues

3.Doubtfulness about quality

Figure 9– What factors would lead you to involve in thrifting?



If we aspire to make thrifting one of the pioneers of India's fashion industry, the thrifting shop operators must satisfy the needs and requirements of doubtful and hesitant shoppers. Hence, they must try to

1. Provide quality assurance to their target customers.

2. Conduct workshops and try to enhance transparency about the upcycling process.

3. Increase knowledge about apt and trendy use of thrift products.

B. QUALITATIVE RESEARCH

The research is based on three interviews conducted with the founder of several thrift stores.

Interview with founders of The Thrift Shop, Oakark, First Second Hand

A telephonic interview was conducted with the founders of "The Thrift Shop' and "First Second Hand" and a google form-based interview was conducted with the founder of "Oakark". Following were the insights-driven from three conversations-

All the initiatives started with the realization of the abundant unused stock of clothes they had not used for long. Vinayak and Rupa, the founders of "The Thrift Shop" initially started by making a WhatsApp group with their friends where each one of them could purchase each other's clothes at highly nominal prices. Whereas now all these thrift shop owners are operating an Instagram-based store. Muskaan and Stuti, the founders of "First Second Hand" believe that Pandemic induced lockdown led to the emergence of many Instagram based thrift stores that enabled many to instigate their entrepreneurial spirits and unleash their creative potentials.

BUSINESS MODEL

Most of these thrift-store owners started by selling surplus pieces from their own closets and after exhausting the same, different thrift store owners adopted different means of sourcing their supplies. For instance, at "The

Thrift Shop" they reach out to general people having surplus clothing, willing to sell it while the founder of "Oakark, Ishita Singh" is reaching out to dealers and vendors for creating inventory and the founders of "First Second Hand" also plan to do the same. For "The Thrift Shop", their customer base includes both the sellers (Ones with unused clothes in their closets & willing to sell) and buyers (who are interested in buying those second-hand clothes) and have majorly women as the customer base.

At "The Thrift Shop", they frequently announce that they are open for collections and through which people can tell the founders about the clothing they are willing to sell. The founders arrange a pickup facility for the stuff if they find the product to be in a resalable condition. After assessing the quality and managing the upcycling of received clothes, they approve the product and reach out to the customer to ask about specifications like frequency of usage, original MRP, etc and accordingly decide a resell price. If the product gets sold, they send the decided amount to the selling customer and keep back a specific amount as a return for the convenience services like dry-cleaning and shipping. They even add a small note to the clothes while shipping them to customers to add a personal touch and make the customers feel proud because of the eco-friendly approach of shopping they opted for.

Unlike "The Thrift Shop", the founder of Oakark takes the help of her mother for mending, fixing, sanitizing and packing all the products and decides the prices on her own.

At "The Thrift Shop" they keep monitoring their products, and if there is any particular product that could not find a buyer within 45 days of uploading, then founders get back to the selling party to discuss a price reduction or to upcycle it into scrunchies, bags and other products.

CUSTOMER GRIEVENCES

All these thrift stores handle customer queries and grievances via Instagram DMs themselves. If a complaint arises, they provide their customers with a return policy or compensate the customers for the mending and fixing. Hence, a disciplined after service is being provided to customers

COMPETITION FROM E-COMMERCE SITES

The founders of "The Thrift Shop" believe that in the long run, thrifting is sustainable only if more people spread awareness about its benefits and the positive impact it creates on society. While the founder of Oakark mentioned that she believes fast fashion stores are not a competition to the thrifting community as people who thrift know what good they are doing to the environment by choosing slow fashion. Also, the quality of items sold in thrift stores is generally better than the ones found at cheap e-commerce websites that do not care about their workers' rights at all. Hence the founders were highly optimistic about the future of thrift industry.

TO ENHANCE AWARENESS

The owners of "The Thrift Shop" believe that other operators should collaborate to open up certain pop-up shops/live stores so that these thrift store owners could even reach out to customers who are not active on Instagram but might be interested in such products. Other than this, Rupa, the founder of "The thrift Shop" believes word-of-mouth marketing is one of the most potent weapons that thrift shop owners all over the nation could use to make people aware of this concept. Founders of "First Second Hand" believe that promotional drives should be oriented towards convincing people to ignore societal factors that are a hurdle in thrifting for a long time. They also mentioned the regional disparity thrifting is facing, as it is pretty trendy in northeastern areas of India but has not gained much popularity in the other parts of the country, especially northern India

MAJOR_ISSUES_FACED

Since both the founders of "The Thrift Shop" already have a full-time job, managing a complementary business along with it becomes a hectic job to perform. Since they both are the only operators of the store, meeting the urgent deadlines or immediate delivery demands becomes difficult to manage and at times results in bearing extra costs.

While the founders of "The Thrift Shop" are facing an operational challenge, Ishita Singh on the other hand is facing difficulty to curb down the prevailing social stigma and make people realize that thrifting does not mean clothes

that are all worn out or unhygienic.

REPURCHASES

Approximately 44% of customers of "The Thrift Shop" engage in repurchasing. The high repurchase rate is a testament to the sanguine future of the thrift industry.

Overall, these thrift shop owners have a long way to go to establish their stake in the industry.

INDUSTRY_CHALLENGES

1. Compared to well-established e-commerce websites, which offer products on a similar pricing scale as thrift stores, the customer base of these thrift stores is less in number and only a few customers engage in repurchasing. These thrift stores in India still **lack the credibility and loyalty** in the minds of people that sites like Flipkart, Amazon and Myntra have successfully established.

2. The thrift stores have enormous potential to establish themselves as a significant part of the fashion industry, but it is currently underutilized due to **low scale of operations**, **lesser capital investment** and a **highly disorganized market**. Since most of the Indian thrift stores have been initiated by the middle-class millennials inspired by their huge piles of unused clothes in the closet, therefore they face the problem of limited variety and quantity, narrowing their customer base.

3. Due to their **conservative approaches to marketing** (social media or word of mouth only), potential customers are still unaware of the latest trend prevalent in society. As deduced in our interview with the founders of First Second Hand, thrifting also faces regional disparity. Though it has been able to mark its footprints in the country's northeastern region, the northern region is far behind in the race.

4. The expansion of the second-hand industry is challenging and limited until people keep it viewing as a **secondary source of income** despite finding avenues for making it a full-time business.

5. **Absence of a standard return policy** makes first-time shoppers hesitant to make the purchase. For first-time purchasers, this acts as an entry barrier. The primary concerns revolve around size and quality, which they cannot be assured of while making online purchases. Since they are already used items and not too many sizing options are available, it becomes difficult for the customer to find the perfect size. Therefore, a proper return mechanism should be in place to make it a pleasant experience even if the customer is not satisfied with the product

6. Another major potential threat to the industry might be the **unsold items** left with these thrift stores, and if not appropriately treated, then we will be back to square one and the problem of increasing landfills will continue to persist, as has been observed in the relatively more established US thrift industry.

RECOMMENDATIONS

1. CAMPUS THRIFT STORES

One such way to create traction for thrift stores among the millennials is to organize campus thrift drives. These thrift drives have multifold benefits: ensuring sustainability, spreading awareness and nurturing entrepreneurs out of young minds. Campus thrift stores usually reach out to their campus students for donations of laundry, stationery, furniture, household items and kitchenware. These donated items are purchased by the college students only, and the revenue generated can be used to provide scholarships and help needy students. Two such examples are the St. Lawrence University ReCellar and the campus thrift store at Western Michigan; however, the concept is still unintroduced to India.

2. Since an individual thrifting unit is too small to become a significant contributor to the fashion industry, **consolidation of distinct units** to become a bigger corporate unit is necessary to establish their distinguished position in the market. To make it more appealing, thrift store operators can also collaborate with well-recognized retailers to distribute discount coupons in exchange for used clothes of that brand to their customers.

3. To keep up with the increasing trend of theme-based parties like Halloween, Christmas, marriages, these thrift stores can attract such shoppers. Since these items are meant for just **Event-specific use**, hence people do not want to spend much on them and shall opt for thrifting.

4. Celebrities to keep up with the fashionable trend usually have the most expensive closets abundant in rare and exclusive designer pieces, which is over the budget for a middle-class consumer to afford, hence thrift stores could act as a **mediator to make celebrity fashion more sustainable** along with simultaneously satisfying the craze of a middle-class consumer at affordable and economical rates. Emerging thrift stores like Coutloot are already finding opportunities in this direction.

5. After establishing a presence on various social media platforms, thrift stores should try to expand their horizon in a more **formal and organized manner,** such as by building up a website, launching an app for reaching out to more customers to source inventory, and being more diligent with industry standards. They can further expand through fundraising and increasing their investment opportunities. To expand in a scalable manner, they should send email alerts to their consumers whenever new inventory arrives to keep their customers intact.

6. Thrift stores should try that even the **unsold inventory** is not doomed to the trash, and such products should be recycled and repurposed to enhance their utility. Since the forms operating in a managed marketplace do not have their inventories, they do not have to worry about dispensing with the unsold inventory. However, firms that follow other business models apply various methods of disposing off the unsold inventory, which are as follows-

    a) If the ownership of unsold items lies with the thrift shop operator, which usually happens either with large-scale charitable organizations like Goodwill or with the nascent stage stores, the owners could donate these products.

    b) However, if the thrift store owner does not own the product, they could negotiate the further course of action with the actual owning party before taking any decision on their own for the product.

7. For **physical expansion**, these online thrift stores can also set up their pop-up stores in fests and carnivals and avoid the enormous fixed costs and long-term commitments simultaneously. They can even conduct workshops, campaign and publicize themselves to spread awareness about the concept of thrifting and its benefits. Such initiatives can help the thrift store make its potential customers comfortable with the concept of thrifting which is relatively new and difficult to adapt in case of online presence only. A chain of physical thrift stores running under a single brand name having a pan-India presence will catch the attraction of many.

CONCLUSION

Over the period, we have seen a surge in the number of thrift stores all over the globe, but how far will the thrift stores be able to retain their growing popularity? Will the urge to adopt a cost-saving mode of fashion ever overcome the social stigmas and taboos associated with second-hand purchasing? Though Pandemic has already been successful in creating a craze in mind for many for thrifting in the short run, reports cited by ThredUp also suggest that the Second-hand market will hit $64bn by 2024.

Thrifting is still a small fish in a big pond of the fashion industry constantly competing with dominant and technocratic retailers. Moreover, these thrift stores need to innovate and bring some major transitions to their existing business models to survive.

Thrifting is a road that is not explored thoroughly, and there are still many untapped opportunities that, if taken care of, then thrifting has a booming future ahead. According to our survey,

1. Out of all those, who were currently not involved in thrifting, 84.9% of the respondents were ready to change their views and start thrifting if provided with necessary information and conditions.

2. Approximately 55.1% believed that if convinced of the quality of the goods, they would also be willing to thrift. To establish assurance about quality, these brands should develop their brand value by engaging appropriately with the target customers, making the upscaling process

more transparent, offering something more valuable than competitors to your customers and designing a mission statement that is a replica of your values of carrying out business. This brand value can also help eliminate the social stigma which is often associated with second-hand shopping.

Thrifting is no longer just about the money, but about the value it creates. Conventionally these thrift stores were conceived to be not so presentable, dark and damp filthy stores. However, if continued in the same manner, these thrift stores would never be able to face the competition exerted by the fancy and innovatively designed retail stores. Currently, only a limited number of customers engage in repurchasing at these thrift stores. Until people keep associating with thrift just for one-time purchases, it will not ensure a secured future for the thrifting industry. Thrifting stores need to establish more long-term and strong relationships with their customers, keeping in mind the sellers' perspective.

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Discussion of the Link Between Air Pollution and Economic Growth in Indian States

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ABSTRACT

The paper discusses the global scenario of environmental pollution and its impact on society. It builds the link between environmental pollution and economic development by reviewing the existing academic literature. Further, we discuss the level of air pollution in India, particularly PM_{10} concentration, and its effect on the states' economic activity using panel data regression. The paper concludes that the increasing PM_{10} concentration has a negative impact on the state net domestic product, thus on the states' economic activity.

Keywords: Environmental Pollution, Economic Development, PM_{10} Concentration, State Net Domestic Product

INTRODUCTION

Environmental pollution is one of the most significant problems facing humanity today, even when it is certainly not a new phenomenon.

It refers to the contamination of the physical and biological components of the earth or atmosphere system to such an extent that environmental processes are adversely affected. There are three significant primary forms of pollution: air, water, and soil pollution, whereas other recognised forms include radioactive, noise, light, and thermal pollution.

The causes of environmental pollution are industrialisation, urbanisation, population growth, mining, and exploration. Additionally, transboundary movement of pollutants, for instance, non-functional electrical and electronic equipment, contribute significantly to air, water and soil pollution. Furthermore, gaseous pollutants, toxic metals, and particulate matter (PM) into the atmosphere trigger air pollution. The release of industrial effluents, agricultural run-offs, sewage, and dumping of electronic waste contaminates water. Lastly, activities such as mining, deforestation, illegal dumping and the creation of landfills are responsible for soil pollution.

Of all the forms, air pollution is the most prominent threat to health and the environment. It develops in two contexts, indoor or household air pollution and outdoor air pollution and is a significant negative externality as it imposes an external cost to people who are external to the transaction of polluting product. The existing figures on its impact on society reinstate the claim. According to World Health Organisation (WHO) estimates, 9 out of 10 people breathe air that exceeds WHO guideline limits containing pollutants' high level. In contrast, more than 50 per cent of the people reside in areas that do not fulfil the least stringent air quality target set by WHO. Globally, it is the low and middle-income countries that have the highest exposure to contaminated air.

Outdoor air pollution is reported to cause approximately 4.2 million deaths. Combined with household air pollution, it results in around 7 million premature deaths every year. The impact is even more severe among low-income earners, children and other vulnerable groups, mainly in developing nations. The fact above depicts the daunting state of the environment and its consequences at a global level, which necessitates the focus on the impact of air pollution.

The paper therefore aims to analyse the impact of air pollution on the economic activity of India.

- AIR POLLUTION IN INDIA

The world's sixth-largest economy by nominal gross domestic product (GDP) and third-largest by purchasing power parity (PPP), India currently struggles with tackling the extent of pollution across the nation. According to the World Air Quality Report (2020) published by Swiss organisation IQAir, India is the third most polluted country globally. The report finds that 22 of the 30 most polluted cities globally are in India, with Delhi ranking as the most polluted capital city in the world. The situation is no different in the case of water pollution. It is reported that nearly 70 per cent of India's surface water is contaminated and unfit for consumption. According to a report published by World Bank, poor water quality impedes economic progress, stymies human potential, and reduces food production.

Air pollution is an important cause of premature deaths and several related diseases. The high incidence of deaths and illnesses associated with this menace and its adverse impact on the Indian economy through reduced productivity and decreased labour supply, added health expenditures, and lost welfare can impede the nation's aspiration to be a 5 trillion dollar economy by 2024. In 2020, India was reported as the third most polluted country globally with a $PM_{2.5}$ concentration, five times above World Health Organisation (WHO) exposure recommendation.

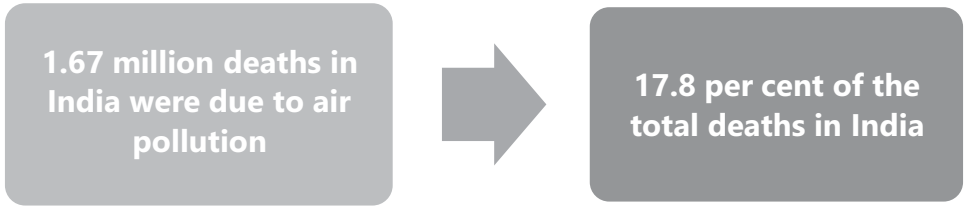
A few significant causes of air pollution in India are unchecked growth of human population, industrialisation, urbanisation and uncontrolled exploitation of nature. Air pollution is further aggravated by increasing traffic, rapid and unsustainable economic development, and burning of fossil fuels. Carbon monoxide released due to incomplete combustion of carbon-based fuels slows human reflexes. Vehicular emissions are the largest anthropogenic source of Carbon monoxide. The greenhouse gases, ozone, methane, carbon dioxide and nitrous oxides released from industries, vehicles, fossil fuels further lead to the Greenhouse effect that causes climate change.

Transportation air pollution, caused by automobiles, has seen a great rise in India. The number of motorised vehicles in India has increased 29 times in the last few decades, from 1.9 million in 1971 to 55.0 million in 2001, as shown

in Figure 1. This increase was not consistent across all vehicle types: buses had a 7-fold increase; trucks saw a 9-fold increase; cars, Jeeps, and taxis saw a 10-fold increase; and two-wheelers witnessed an astounding 67-fold increase. Further, the quality of fuel and lubricating oil has also had a key role in India's transportation air pollution. Indian gasoline has high volatility and vast majority of gasoline automobiles in India are carbureted. These characteristics, together with India's high ambient temperatures, raise the potential production of ground-level ozone.

Consequentially, studies have shown that the adverse effects of air pollution on health have been growing in India. It has been observed that short-term and long-term exposure to polluted air is associated with a higher disease burden and mortality, as shown in Figure 1.

Figure 1: Deaths due to air pollution

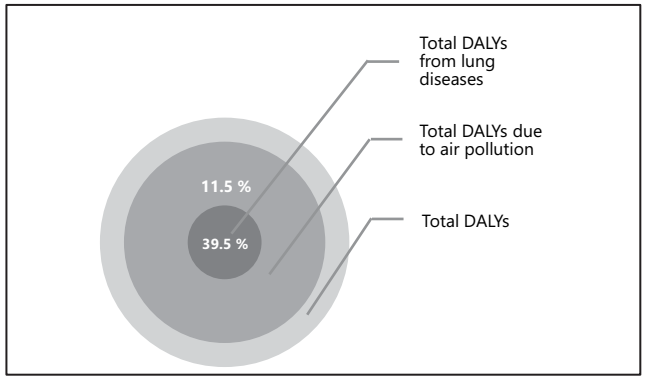


Source: The India State-Level Disease Burden Initiative as part of the Global Burden of Disease Study (2019)

Another impact of the high air pollution levels is the overwhelming increase in chronic respiratory diseases, contributing to the total disability-adjusted life-years (DALYs), as highlighted in Figure 2[1].

[1] DALY is a composite metric that combines the years of life lost due to premature death (YLLs) and the years lived with disability (YLDs).

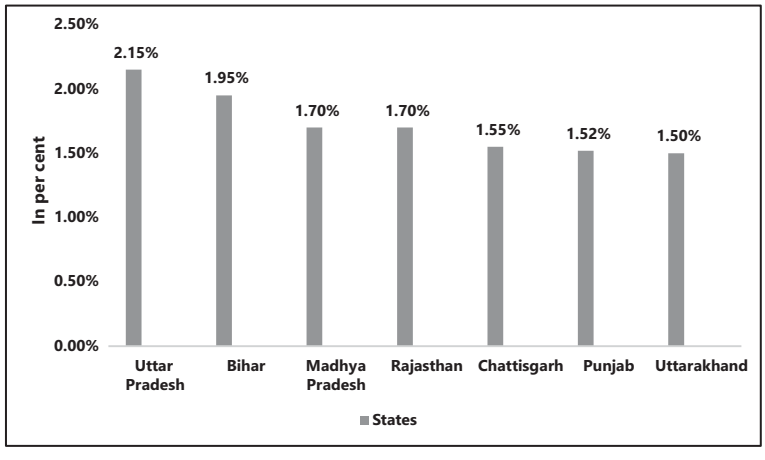
Figure 2: Chronic respiratory diseases due to air pollution



Source: The India State-Level Disease Burden Initiative as part of the Global Burden of Disease Study (2019)

The Global Burden of Disease Study (2019) estimated the economic loss of US$ 28.8 billion due to lost output from premature deaths and US$ 8.0 billion due to morbidity due to air pollution. This loss is equivalent to 1.36 per cent of India's GDP in 2019. The per capita economic loss due to air pollution in India was 26·50 dollars. Among the Indian states, the economic loss attributable to air pollution as a percentage of state GDP varied from 0·67per cent to 2·15 per cent. Figure 3 (below) illustrates the states which experienced high losses.

Figure 3: Economic loss attributable to air pollution as a percentage of state GDP



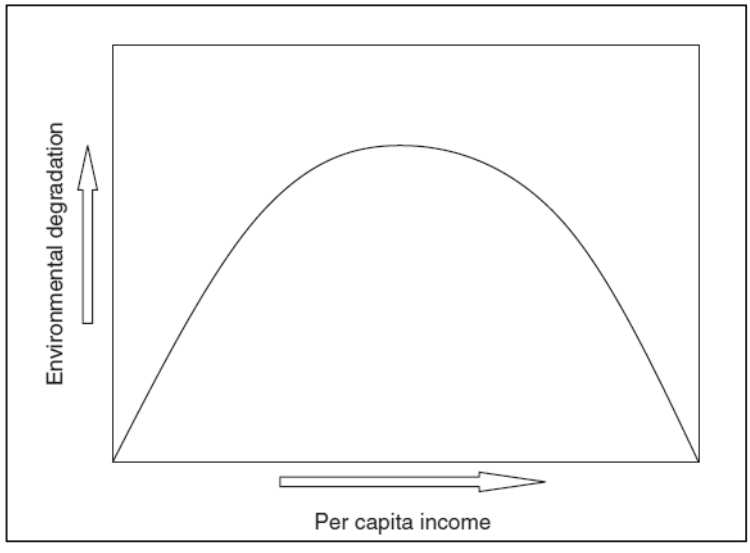
Source: The India State-Level Disease Burden Initiative as part of the Global Burden of Disease Study (2019)

LITERATURE REVIEW

In today's highly globalised world with countries integrating various dimensions, economic growth is often accompanied by its harmful effects. One of the most conspicuous of these effects is environmental degradation. It is often discussed that there exists a two-way relationship between economic growth and environmental pollution. While focusing on economic growth leads to higher levels of pollution in the environment, pollution and pollution reduction measures adversely impact economic growth and development. This section aims to review the existing academic literature in understanding the link between the two.

Over the years, it has been a widespread belief that rich nations pollute the most. Grossman & Krueger (1995) contradicted this widely held notion by introducing the concept of Environmental Kuznets Curve (EKC) in their study on the potential impacts of North Atlantic Free Trade Agreements, popularly known as NAFTA. It is an inverted U-shaped curve that hypothesises the relationship between various indicators of environmental degradation and per capita income.

Figure 4: The Environmental Kuznets Curve



Source: MacDermott et al. (2011)

As depicted in figure 4 above, the pollution levels increase with the increase in per capita income and declines after crossing a threshold of income. The low-income countries with low levels of industrialisation and consumption rely heavily on agriculture and have relatively more minor environmental degradation. As the development begins and industries dot the economy, the emission of pollutants increases. However, as the process continues and wealthy nations become service-oriented, more resources are used to adopt cleaner technologies, leading to a fall in pollution levels.

Over the years, several pollution measures have been employed to demonstrate the inverted U-shape of the Environmental Kuznets's Curve. Sulphur dioxide emissions, toxic wastes, and water pollution appear to rise and then decline with per capita GDP. However, the researchers do not observe this pattern in all pollution measures (MacDermott et al., 2011).

Shafik (1994) also claimed that urban waste and carbon emissions also fail to show an inverted U-shaped relation with per capita income. Plausible reasons might be that the turning point has not reached yet or maybe that the threshold has already been crossed. Therefore, the universal validity of the Environmental Kuznets Curve is dubious. The relationship might hold for some countries or some pollutants whilst failing for others.

Environmental pollution and economic development affect each other in three ways.

The first aspect in the relationship between the two is the role of economic development in environmental degradation. It can play out in two ways: first, the development of infrastructure using the existing resource base and second, the increased use of pollution-intensive resources, and an outcome of increased disposable incomes (Ali & Puppim de Oliveira, 2018). Infrastructure development, in particular, has remained to be one of the direct determinants of pollution in absolute terms. Even though infrastructure structure leads to positive social development, roads and transport infrastructure construction are also considered channels for other forms of pollution-intensive infrastructure development.

Muyibi et al. (2007), in their paper, have discussed the impact of economic development on water pollution in Malaysia using econometric analysis

tools. Development in terms of industrialisation, urbanisation and population growth accounts for various changes in the yearly level of pollution in rivers in Malaysia. For instance, GDP per capita accounted for 81% variances in rivers' pollution episode over the period under consideration. Population, accounted for 74% of total pollution in rivers, and industrial production accounted for 78%.

Davis (2012) hypothesised that economic activity significantly impacts exposure to air pollution and, ultimately, human health. Using county-level employment statistics in California (1980–2000), along with significant regulatory periods and other controlling factors, to estimate local concentrations of the coefficient of haze, carbon monoxide, and nitrogen dioxide using a mixed regression model approach, Davis found that the relationship between employment measures and air pollution was statistically significant, suggesting that air quality improves during economic downturns. Additionally, major air quality regulations significantly reduced air pollution levels over the study period.

The second way is the direct impact of environmental pollution on economic development by hindering the process itself. The report published by OECD, 'The economic consequences of air pollution policy highlights', focuses on projected economic consequences of outdoor air pollution for the period 2015-2060. It assesses the market costs of air pollution, which includes labour productivity, health expenditures, and changes in crop yields. It also discusses the non-market health impacts of outdoor air pollution, i.e. increased mortality and morbidity. Rising emissions of air pollutants are projected to increase the concentration of particulate matter and ground-level ozone. The report finds that countries of South and East Asia, especially China and India, witness a high average population-weighted concentration of these pollutants. The most dangerous consequence of this is the rising number of premature deaths. The projections reveal that the number of premature deaths will increase to 6-9 million annually in 2016, in line with the latest Global Burden of Disease estimates. This implies more hospital admissions, additional health expenditures, and a high number of lost working days.

Consequently, the market costs of air pollution are projected to lead to global annual economic costs of 1% of global gross domestic product (GDP) by

2060. On the other hand, the non-markets costs are projected using estimates of the individual willingness-to-pay to reduce the risk of premature death and the annual global welfare costs associated with pain and suffering from illness. These numbers are projected to be around USD 18-25 trillion and USD 2.2 trillion in 2060, respectively. It is evident from the above estimates that pollution can have a severe negative impact on the global economy.

The third way in which environmental pollution and economic development interact with each other is through abatement policies. Environmental damage is the opportunity cost for initial development, which later subsides through self-correcting mechanisms. Stringent environmental regulations have led to better outcomes lately. Rich nations are more environmentally conscious while poor are more environment-friendly (Martinez-Alier, 2003).

It is contested that expenditure incurred on pollution abatement has a low cost-benefit ratio. A detailed study on the impact of pollution abatement costs on plant-level productivity in the U.S. shows unpleasant results. It was found that an increase in abatement costs has led to a decline in productivity in various sectors (Gray & Shadbegian, 2003).

Resources to be spent on infrastructure investment and R&D are now being diverted towards environment conservation. However, public benefits in the long term tend to surpass the private costs incurred. The productivity of workers is enhanced, and new cost-effective technologies emerge. Inclination towards cleaner and greener environments helps in building sustainable economies. Studies show that pollution tax helps achieve the dual objectives of reducing pollution while spurring economic growth (Fisher & Van Marrevijk, 1998). Therefore, the impact of environmental regulations varies across different governance structures and economic systems.

RESEARCH METHODOLOGY

Description of data

This section aims to analyse the relationship between the level of air pollution in India and its impact on the state net domestic product. This study compiles

a panel dataset from larger datasets provided by the Government of India[2]. The dataset includes twenty-two states of India for the period 2013-2019[3]. Table 1 describes data on the dependent, independent and controlled variables.

Table 1. Summary statistic of the variables

Variable	Type	Source	Mean	Standard Deviation	Minimum	Maximum
State Net Domestic product (SNDP) (in Rs Lakhs)	Dependent variable	Handbook of Statistics on Indian States (RBI)	4.78e+07	3.69e + 07	1.98e+06	1.91e+08
PM_{10} Concentration (in µg/m3)[4]	Independent Variable	National Ambient Air Quality Monitoring Programme (NAMP) Data Year Wise (Central Pollution Control Board)	121.0739	47.48193	43	278
Fertility Rate	Control Variable	Sample Registration System Statistical Report(Office Of The Registrar General & Census Commissioner)	2.072251	0.5067045	1.446667	3.4
Consumer Price Index	Control variable	Handbook of Statistics on Indian States (RBI)	4.695498	1.287844	.5	7.42
Invested Capital (in Rs Lakhs)	Control Variable	Handbook of Statistics on Indian States (RBI)	1.80e +07	1.96e+07	6.16e+04	1.09e+08

Source: Authors' Estimates

[2] *Panel data, also known as longitudinal data, contains observations about different cross-sections across time. Regression models based on such data are called panel data regression model*

[3] The missing data in the compiled dataset has been projected using appropriate statistical software.

[4] The data for PM_{10} concentration is available at district level which has been converted into aggregate PM_{10} concentration for states.

The expected sign of the variables is depicted in Table 2 below.

Table 2. Expected sign of the variables

Variable	Expected Sign	Reasoning
PM_{10} Concentration (in µg/m3)[5]	Negative (-)	With an increase in PM_{10} concentration, the level of air pollution increases.
Fertility Rate	Negative (-)	The population-level increases with the increase in fertility rate, which depresses economic growth.
Consumer Price Index	Negative (-)	An increase in inflation levels will lower the real net domestic product.
Invested Capital (in Rs Lakhs)	Positive (+)	An increase in the level of invested capital boosts the overall productivity in the economy

Source: Authors' Estimates

Estimation

Our panel data regression model takes the following form:

$$y_{it} = a + bx_{it} + e_{it}$$

where, y is the dependent variable, x is the independent variable, a and b are coefficients, i and t are indices for individuals and time, respectively. e_{it} is the random error term and it holds immense importance in our analysis. Assumptions about the error term determine whether fixed effects or random effects will be considered/of consequence.

The econometric analysis uses Hausman test to choose between the above mentioned two estimation techniques for analysing the panel data, the chi-squared statistic for 3 degrees of freedom has been estimated as 4.12 with a p-value of 0.2493. Therefore, following the test, the null hypothesis, stated as FEM and REM not differing substantially, is not rejected at a 5 per cent level of significance. Thus, we choose the random effect model (REM) for our panel

[5] The data for PM_{10} concentration is available at district level which has been converted into aggregate PM_{10} concentration for states.

data regression analysis. As per the results of the Hausman test, REM will be used.

The Hausman test and Random Effects Model (REM) estimates are provided in Table 3 and 4, respectively.

Table 3: Estimates of Hausman test

H0: difference in coefficients not systematic	
Chi-squared (3 df)	4.12
Probability> Chi-squared	0.2493

Source: Authors' Estimates

Table 4: Estimates of random effects model

Dependent Variable = SNDP	**Random Effects Model**			
Independent Variable	Coefficient	Standard Error	t-statistic	p-value (p > | t |)
PM_{10} Concentration	-63483.24	35316.14	-1.80	0.072**
Consumer Price Index	-1188494	514046.4	-2.31	0.021**
Fertility Rate	-1.60e+07	4376619	-3.65	0.000*
Invested Capital	0.9917546	0.1190215	8.33	0.000*
R^2	0.5093 (within)			
	0.4420 (between)			
	0.4459 (overall)			
Note: '*' signifies a 5 per cent level of significance; '**' signifies a 10 per cent level of significance				

Source: Authors' Estimates

ANALYSIS

Table 4 depicts above the findings. Column 1 of the table shows the variables used in the analysis, while the second column shows the estimates calculated.

In the random effect model thereafter, all the coefficients for the control variables in table 4 are statistically significant, and the signs align with our expectations. The coefficient of the independent variable under consideration, PM_{10} concentration, is statistically significant at a 10 per cent level of significance. The sign of the coefficient of PM_{10} concentration is negative, implying a strong negative impact of air pollution on the dependent variable, state net domestic product (SNDP). The overall R-square of the model is 0.5093, signifying that approximately 51 per cent of the variation in our dependent variable, SNDP, is explained by variations in the independent variable, PM_{10} concentration.

To summarise, the PM_{10} concentration, a major air pollutant, has a strong negative impact on the state net domestic product (SNDP), which signifies the level of economic activity in the various States.

CONCLUSION

The World Development Report (1992) on the theme of 'Development and the Environment', explicitly acknowledged that economic growth and environment are intricately linked and cannot be considered as exogenous to each other.

Environmental pollution has been around for ages now and continues to disrupt economic progress at a global level. The three aspects in which economic growth and environmental pollution influence each other have been discussed.

The most prominent form of pollution observed globally and within India is air pollution. Various studies prove that long-term and short-term exposure to contaminated air leads to reduced productivity, decreases labour supply and, adds to health expenditures. Building on this argument, we have further elaborated on the air pollution scenario in India and the initiatives being undertaken to check the ongoing degradation of the environment.

We have performed a panel data analysis using the data for state net domestic product (SNDP), PM_{10} concentration, invested capital, fertility rate, and the consumer price index spanning 22 states for 2013-2019. The estimates show a strong negative relationship between PM_{10} concentration

and SNDP when controlled for other variables. It implies that air pollution negatively influences the level of output produced across the states in India.

There is a direct linkage between rising pollution levels in Indian cities and expanding urbanisation. Several notable initiatives and policies have come into force in recent years to fight this menace.

The step to launch the National Clean Air Programme, 2019, is laudable. The programme aims to reduce the particulate matter concentrations to 20%-30% by 2024, keeping 2017 as the base year. The scrapping policy of vehicles announced in February 2021 will help combat the problem of air pollution and provide impetus to growth.

Another significant initiative was the launch of Decarbonizing Transport in Emerging Economies project in India by Niti Aayog, jointly with the International Transport Forum of OECD. The project will help India to turn its climate ambitions into reality. As estimated, CO2 emissions are likely to increase to 6% annually in India by 2030. The Decarbonisation project will help remove the legacy of obstacles that lie in the pathway of zero-emission targets and create a cleaner, healthier and more affordable future for everyone through improved design planning systems and more investment in clean energy infrastructure.

While these policies exist, certain loopholes need to be addressed. For example, The National Clean Air Program suffers from severe challenges. In a study conducted by Council on Energy, Environment and Water (CEEW) and Urban Emissions, there is no legal framework for reviewing and updating plans and a lack of clear delineation of responsibilities. A second drawback is the city planning approach that limits the scope. Roughly 30 per cent of air pollution is by sources outside the city. The system, therefore, should be inclined towards regional coordination among cities and states. Most of the pollution control measures focus on transport emissions. The International Energy Agency predicts that India's future emissions will mostly come from transport infrastructure, industry and buildings and points out the opportunity to grow green. However, there are substantial local differences in the contribution of each polluting source which the planners fail to capture. Further, only 25 per cent of the city plans have access to data on the local emission sources, which points towards the limitation of missing data. India is

yet to address the problem of data gaps which is essential to meet the legal requirement of air quality trend reporting and compliance.

Lastly, the low budgetary allocation limits the planning abilities at local levels. In 2019-20, the central government approved an initial budget of Rs 300 crore, which is too little against the financial requirement across states. For example, the city of Dimapur in Nagaland needs an allocation of Rs 90 crore for its plan.

Therefore, even though awareness about the causes and consequences of pollution is paramount to dealing with the menace, the inaction towards the matter makes the scenario even more grievous. Without a proper balance between human needs and nature's healing power, mindless and unprecedented development could always bring more calamities

APPENDIX

Table A: Estimates of fixed effects model

Dependent Variable = SNDP	**Fixed Effects Model**			
Independent Variable	Coefficient	Standard Error	t-statistic	p-value (p > | t |)
PM_{10} Concentration	-72362.74	37187.31	-1.95	0.054**
Consumer Price Index	-1150970	523734.8	-2.20	0.030**
Fertility Rate	-1.83e+07	4711510	-3.88	0.000*
Invested Capital	0.9452718	0.1297902	7.28	0.000*
R^2	0.5108 (within)			
	0.4161 (between)			
	0.4218 (overall)			
Note: '*' signifies a 5 per cent level of significance; '**' signifies a 10 per cent level of significance				

Source: Authors' Estimates

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The Nexus Between Economic Growth and Public Outlays and Deficits in India: An Econometric Analysis

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ABSTRACT

In recent years there has been a slew of debate about the impact of fiscal deficit on GDP growth. Different theories describe different processes behind this impact, thus creating contradictory results in terms of magnitude and even the direction of the impact. This paper examines the relationship between fiscal deficit and GDP growth rate in the Indian economy. We also determine whether the capital expenditure is more successful in boosting economic activity than revenue expenditure as propounded by many. The study conducts a regression analysis using data covering the period of 1978-2019 by using the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) technique. Both the long-run and short-run analysis is done. The results of the study showed that both the revenue expenditure and capital expenditure positively impact GDP growth rate in the long run

whereas fiscal deficit does not have a significant long-run relationship with GDP growth.

Keywords: Fiscal Deficit, Government Expenditure, Capital Expenditure, Revenue Expenditure, Autoregressive Distributed Lag, Error Correction Model, India.

INTRODUCTION

A government incurs various kinds of expenditures to ensure the provision of public welfare schemes, boost the economy, and bring in economic stability. These outflows sometimes result in deficits as well. India has been getting high levels of fiscal deficit even after the adoption of the Fiscal Responsibility and Budget Management Act (FRBM) in 2003. This has in turn posed a major threat to the stability of the economy. However, the impact is widely contested in terms of magnitude and direction. Thus, the question of interest is how have fiscal deficits impacted India's economic growth?

A large fiscal deficit can affect a country's economic growth adversely. It forces the government to take on large amounts of loans and a high debt servicing cost which leads to a cut back in spending on sectors like health, education, and infrastructure. This reduces the growth prospects of a country because of a reduction in the investments in human and physical capital. Large public borrowing can also lead to crowding out of private investment and higher inflation. However, if public and private investments are complementary, then the impact of high public borrowings on private investments and consequently economic growth may be positive. Also, different kinds of expenditures are expected to affect the economy in different ways. Fiscal deficit used for creating infrastructure and human capital will have a greater positive impact on the economy than if it is used for financing ill-targeted subsidies and recurrent expenditure. Therefore, the fear about a high fiscal deficit is justified if the government incurs a deficit to finance its current expenditure rather than capital expenditure.

In this context, it is important to understand the consequences of rising fiscal deficit, current expenditure, and capital expenditure on the GDP of a country. This analysis will also contribute to the rules vs discretion debate. In other

words, whether the government should keep its commitment on a balanced budget strategy (rule) or run a deficit in case of need (discretion). If the analysis results in favour of a balanced budget then it means that it is more beneficial to follow the rule and not practice any discretion. On the other hand, budget deficits may not impact the economy in a negative way significantly which makes it worthwhile for a government to practice discretion.

LITERATURE REVIEW

- Fiscal Deficit and Economic Growth

Schools of thought-

There are many theories around the subject of fiscal deficit and its impact on growth. It has invited considerable debate but there is no conclusive answer. Even the empirical results have been contradictory to each other. Fiscal deficit is the excess of public expenditure over public revenue. It is a significant variable that may have an impact on economic activity by boosting the economy through demand creation. On the other hand, it may prove to be detrimental because an increase in fiscal deficit implies increased financing needs of the government which may hamper economic activity through various processes. There are different schools of thought in economics that confirm different impacts of fiscal deficit on economic growth.

According to the **Keynesian theory** (Eisner, 1989), government expenditure is one of the determinants of aggregate demand of the economy. An increase in government expenditure either through consumption expenditure or investment expenditure raises the aggregate demand which in turn causes the output to expand when the resources are not fully employed. The multiplier effect further increases the output which leads to an increase in money demand and if money supply is fixed then interest rates would rise, thus partially offsetting the multiplier effect. However, increased aggregate demand enhances the profitability of private investment and leads to higher investment at any given rate of interest. The effect of an interest rate rise is thus more than offset by an increase in the prospect of profitability of investment. Thus, investment and savings may rise even after an increase in

interest rate when there is less than full employment. In the case of full employment, fiscal deficit may lead to crowding out in Keynesian economics as well.

In contrast, the **classical theory** posits that increased government expenditure financed by borrowings (with no increase in money supply) increase government investment at the cost of private investment. When the government borrows from the market interest rates increase due to competition which then decreases the private investment. Thus it doesn't lead to any increased growth in the long run. This is called crowding out effect. Classical economists believe that the invisible hand guarantees full employment equilibrium in the economy and thus it should be left to operate on its own. They saw government intervention in the economy as a serious problem which can stifle growth and therefore lead to less output.

In the **neo-classical** view the crowding out effect of the government borrowing is given pre-eminence. The increase in government expenditure is thus detrimental on economic growth. Also any increase in taxes to make up for this increased expenditure is believed to have distortionary effects. Neoclassical economists favour low taxes and limited government spending. They believe in spending on national defense, but not for welfare policies like Social Security and Medicare.

Under classical and neoclassical theories the long run impact is postulated to be negative. However under the short run, the impact depends upon the transmission of increased interest rates on private investment and any increase in tax rates.

The difference between Keynesian theory and classical and neoclassical theories lies in the fact that classical economists believe in a fixed flow of savings. In Keynesian economics, government deficits also raise output, resulting in increased income and savings. This increased saving will ensure an increase in government expenditure without decreasing private investment, or even increasing it in some cases.

Another school of thought is the **Ricardian Equivalence** (e.g. Barro, 1974, 1976, 1979, 1987, 1989), which views fiscal deficit as being neutral in terms of stimulating economic activity. The increased deficits imply increased future

taxes and the present value of these taxes is exactly equal to the amount of the deficit. Thus, government deficit just implies postponement of taxes. In this theory, fiscal deficits are used as a device for smoothening out the public expenditure in case of revenue shocks over a period of time. As household spending decisions are based on the present value of their incomes, the aggregate demand remains unaffected. Households should be long-sighted under this model. This is in contrast to the Keynesian theory where individuals are myopic.

Besides these the **Modern Monetary Theory** posits that the government can spend as much as possible without incurring any debt or applying increased taxes. As there is no limit to the quantity of money that can be created by a central bank, the governments can pay using new money creation. But this view has the problem that an economy can run into inflation. Then the only option to finance the expenditure will be by increasing taxes. It is a relatively new theory but in this study this theory can't be taken in its full scope as the basis of it is that the government finances through money creation which is not true for India at present.

Empirical Studies-

Baskins' (1987) showed that fiscal policy can affect real economic activity. Federal deficits increase private savings and decrease domestic and foreign net investment. These results indicate that an increase in public capital stock increases private capital efficiency and private investment rises.

Navaratnam and Mayandy (2016) examined the impact of fiscal deficit on economic growth in Bangladesh, India, Nepal, Pakistan, and Sri Lanka, using time series annual data over the period 1980–2014. The results from their study confirmed that the fiscal deficit had a negative impact on economic growth in these South Asian countries except Nepal, which confirmed the positive impact.

Ramu and Gayithri (2016) found that fiscal deficit negatively affected the short-run and long-run economic growth prospects while studying the data covering the time period from 1970–1971 to 2011–2012 in India.

Mohanty (2012) also examined the short and long-run relationship between fiscal deficit and economic growth in India from 1970 to 2012. The study found a significant negative relationship between fiscal deficits and economic growth in the long run while no significant relationship was found in the short run.

- Disaggregated Government Expenditure and Economic Growth

Government capital and revenue expenditure are imperative from the standpoint of economic policy. While capital expenditure results in asset creation, employment expansion, and thus economic development, revenue expenditure essentially helps in the smooth functioning of government and helps in the redistribution of income through subsidies and other grants to the weaker sections of the country.

In economic literature, capital expenditure has been viewed as a productive component of government outlays and revenue expenditure has been looked down upon because more revenue expenditure corresponds to lower expenditure on activities that would have helped in asset creation and economic development. However, public capital expenditure is also an area where grossly unproductive white elephants can be found. However the economic theories do not explicitly mention the preferences of the kind of expenditures but according to the theories of economic development capital acts as a primary source of growth and thus given primary importance. The empirical studies have found mixed results regarding the impact of these two kinds of expenditures on economic development.

Empirical Studies-

R.J. Barro (1999) carried out an empirical investigation into the determinants of economic growth for a panel of 100 countries (1960 to 1995). Government investment expenditure was proven to have a positive impact on economic growth and an increase in investment spending by a government was recommended.

M.I.J. Attari and A.Y. Javed (2013) explored the relationship between government expenditure and economic growth in Pakistan using time series

data from 1980 to 2010. The results of the study revealed that both types of government expenditure have a positive impact on economic growth in the study country, both in the short run and in the long run.

S. Ghosh and A. Gregoriou (2008) also investigated the relationship between disaggregated government expenditure and economic growth in developing countries. Capital spending had a negative impact on economic growth as opposed to current spending which contributed to growth. Also, government expenditure on operations and maintenance had a stronger positive impact on economic growth than expenditure on education and health which had a significant negative effect. These results conform to Devarajan et al. (1996). They explained that expenditures that are considered productive could become unproductive if they are carried out in an excessive amount, and excessive capital spending may have brought current spending to a non-optimal level.

Ghosh and Gregoriou argued against this reasoning by claiming that current spending as a proportion of GDP has typically been above 17% in contrast to capital spending as a ratio of GDP, which has been below 3%. Countries that have correctly perceived current spending as being more productive have increased the share of spending on this category which has led to higher growth, and countries that have not done this have faced negative consequences.

The other reason was that countries that have allocated funds towards capital spending have done it for reasons other than productivity considerations, and this is where the role of corruption assumes importance. Tanzi and Davoodi (1997) noted that private enterprises often get contracts for large public investment projects by paying a hefty commission to government officials. Capital spending is highly discretionary but current spending reflects spending on previous commitments (for example, wages, salaries, pensions, subsidies) allowing limited discretion to the politicians in the short run.

DATA SOURCE AND METHODOLOGY

The study is based on secondary data. The objectives of the study are examined by using time series data covering the period from 1977-78 to 2018-19. Relevant data for the study are obtained from Handbook on Indian

Economy from the Reserve Bank of India and World Development Indicators by World Bank. This paper has examined the effects of fiscal deficit, capital expenditure, and revenue expenditure on economic growth in India by using empirical data. The objectives of the study are being examined by using the Unit root test (ADF test), Autoregressive-Distributed Lag (ARDL), and Error-Correction Model (ECM) technique. To carry out the regression, the paper takes gross capital formation as a percentage of GDP, inflation rate, and annual change in the exchange rate as control variables to separate their effects from the explanatory variables of interest. The following table lists all the variables used in the study along with their data source.

Table 1: Data Description

Variable	Definition of Variables	Data Source
GDPR	Real GDP annual growth rate (in percentage)	World Bank Open Data
GFD	Gross Fiscal Deficit as a percentage of GDP	Handbook of Statistics on the Indian Economy - RBI
RE	Revenue Expenditure as a percentage of GDP	Handbook of Statistics on the Indian Economy - RBI
CE	Capital Expenditure as a percentage of GDP	Handbook of Statistics on the Indian Economy - RBI
INVT	Gross Capital Formation as a percentage of GDP	World Bank Open Data
INF	Annual growth rate of general price level (in percentage)	World Bank Open Data
DEX	Annual change in exchange rates (in percentage) (a positive figure represents depreciation and a negative figure represents appreciation of the domestic currency)	OECD Data

- Model Specification

Unit Root Test (Test for Stationarity): The first step in this model is to test for stationarity in the variables. Stationarity means that the mean and variance of the series are constant over time and the covariance between any two time periods depends only on the gap between the periods and not the actual time at which covariance is calculated. If either of these conditions is not satisfied, then the series is nonstationary. In this study, we apply the Augmented Dickey-Fuller (ADF) test to examine if the series is stationary or not.

Cointegration: Next step is to test whether the variables are cointegrated. Variables are cointegrated if there is a linear combination of them that is stationary. If the variables are integrated of the same order, the relationship between variables, in the long run, can be studied by either the Engle-Granger approach, the Johansen-Juselius procedure, or the ARDL approach. However, the former two approaches can only be used if the variables are integrated of the same order. Therefore, in this study, the ARDL method was applied since the order of integration of variables was unequal.

The ARDL model to be studied takes GDP growth rate as the dependent variable and Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and Exchange Rate changes as independent variables. Note that investment, inflation rate, and exchange rate changes are used as control variables to separate any impact they have on GDP growth from that of the actual variables of interest under study. The functional form specification is displayed in equation (1) below:

$$GDPR_t = f(GFD_t, RE_t, CE_t, INVT_t, INF_t, DEX_t) \quad (1)$$

The standard ARDL equation (2) is displayed below:

$$GDPR_t = \gamma_0 + \sum_{i=1}^{j} \lambda_i\, GDPR_{t\text{-}i} + \sum_{i=0}^{m} \alpha_i GFD_{t\text{-}i} + \sum_{i=0}^{p} \beta_i RE_{t\text{-}i} + \sum_{i=0}^{q} \Phi_i CE_{t\text{-}i} + \sum_{i=0}^{s} \nu_i INVT_{t\text{-}i} + \sum_{i=0}^{y} \xi_i INF_{t\text{-}i} + \sum_{i=0}^{z} \Psi_i DEX_{t\text{-}i} + \omega_t \quad (2)$$

where j, m, p, q, s, y, and z are lag length of GDP growth rate, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes, respectively. ω represents white noise error term

and γ is the drift component.

Model (3) presents the long-run ARDL specification of the relationship between GDP growth rate, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes.

$$D(GDPR_t) = \gamma_0 + \sum_{i=1}^{j} \lambda_i D(GDPR_{t-i}) + \sum_{i=0}^{m} \alpha_i D(GFD_{t-i}) + \sum_{i=0}^{p} \beta_i D(RE_{t-i}) + \sum_{i=0}^{q} \Phi_i D(CE_{t-i}) + \sum_{i=0}^{s} \nu_i D(INVT_{t-i}) + \sum_{i=0}^{y} \xi_i D(INF_{t-i}) + \sum_{i=0}^{z} \Psi_i D(DEX_{t-i}) + \beta_1 GDPR_{t-1} + \beta_2 GFD_{t-1} + \beta_3 RE_{t-1} + \beta_4 CE_{t-1} + \beta_5 INVT_{t-1} + \beta_6 INF_{t-1} + \beta_7 DEX_{t-1} + \varepsilon_t \quad (3)$$

where D(.) denotes the difference operator. The ARDL bounds test for cointegration tests for joint significance of the coefficient of lagged variables to check if there is a long-term relationship among the variables. The null hypothesis of no cointegration among the variables (H0: β1 = β2 = β3 = β4 = β5 = β6 = β7 =0) is tested following Pesaran et al. (2001). If the value of F-test > upper critical bound (UCB), then we reject H0 and the variables are co-integrated. If the value of F-test < lower critical bound (LCB), then we accept H0 and the variables of the study are not co-integrated. However, if the value of the F-test is between the UCB and LCB, then the decision is inconclusive.

Error Correction Model: If long-run cointegration is found among the variables then Error Correction Model (ECM) is used for the estimation of the short-run linkages. It corrects for the long-run relationships while estimating the short-run coefficients. The ECM can be represented through the equation (4) below:

$$D(GDPR_t) = \gamma_0 + \sum_{i=1}^{j} \lambda_i D(GDPR_{t-i}) + \sum_{i=0}^{m} \alpha_i D(GFD_{t-i}) + \sum_{i=0}^{p} \beta_i D(RE_{t-i}) + \sum_{i=0}^{q} \Phi_i D(CE_{t-i}) + \sum_{i=0}^{s} \nu_i D(INVT_{t-i}) + \sum_{i=0}^{y} \xi_i D(INF_{t-i}) + \sum_{i=0}^{z} \Psi_i D(DEX_{t-i}) + \lambda_1 ECM_{t-1} + \mu_{1t} \quad (4)$$

The statistically significant and negative sign of ECM_{t-1} coefficient (λ_1) implies that any long-run disequilibrium among dependent variables and a number of independent variables will converge back to the long-term equilibrium association.

EMPIRICAL ANALYSIS

The statistical analysis begins with a diagnostic analysis of the stationarity of the variables in the study. This is then followed by the autoregressive

distributed lag (ARDL) and error correction model (ECM) methodology, which is used in determining the long and short-run relationships between the variables respectively.

- Stationarity Test

Time series plot of the yearly GDP growth rates for the period from 1977-78 to 2018-19 is shown in part B of the appendix. From the figure, it appears that there is an indication of stationarity of the GDP growth rates. To confirm this, the Augmented Dickey-Fuller (ADF) test was performed. The p-value of the test was less than 0.01; hence, we reject the null hypothesis of unit root (non-stationarity) at 1% level of significance and thus conclude that the GDP growth rates are stationary over the period from 1977-78 to 2018-19. The result of the Augmented Dickey-Fuller (ADF) test is shown in Table 2. This means that the GDP growth rates are integrated of order zero (I(0)) since they are stationary without differencing. Table 2 also shows the ADF test of stationarity for Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes. The p-values show that inflation rate and changes in the exchange rate are stationary. Other variables, namely, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, and Investment are non-stationary at level. Appendix B clearly confirms this, since the plot of the level values of GFD, RE, CE, and INVT shows that the mean and variance are not constant over time. This called for checking the stationarity at the first difference for these variables. The ADF test of stationarity is thus applied at the first difference of these variables. Since the p-values from Table 2 are each less than 0.01, we conclude that the variables are stationary. Hence, this shows that, after first difference, GFD, RE, CE, and INVT became stationary. This means that GFD, RE, CE, and INVT are all integrated of order one (I(1)).

Table 2: Unit root test (Augmented Dickey-Fuller test)

Variables	Level		1st Difference		Conclusion
	Intercept	Trend and Intercept	Intercept	Trend and Intercept	
GDPR	-6.140879*	-7.104942*	*****	*****	I(0)
GFD	-2.526635	-3.669296*	-6.337335*	-6.464919*	I(1)
RE	-2.351275	-1.422859	-5.094722*	-5.367626*	I(1)
CE	-0.745823	-1.935289	-6.206365*	-6.109339*	I(1)
INVT	-1.290246	-1.302306	-6.723786*	-6.730371*	I(1)
INF	-3.904939*	-4.321073*	*****	*****	I(0)
DEX	-4.658827*	-4.868248*	*****	*****	I(0)

Null hypothesis: Existence of unit root, *denotes rejection of null at 1% level of significance, **denotes rejection of null at 5% level of significance.
Note: the figures reported are t-statistics

As some variables are I(0) and some are I(1), we will use the ARDL approach to check long-run cointegration between variables, if any.

ARDL Bounds Cointegration Test

The result of the cointegration test, based on the ARDL bound testing approach, is presented in Table 3. From the table, the calculated F-statistic is 23.65262. This value is above the upper bounds critical value of 3.99 at the 1% significance level. This means that the null hypothesis of no cointegrating relationship can be rejected. This implies that the GDP growth rate is cointegrated with the chosen independent variables (GFD, RE, CE, INVT, INF,

and DEX). This indeed implies that the selected independent variable and GDP growth rate are bound by a long-run relationship in India.

Table 3: ARDL Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance level	I(0)	I(1)
F-statistic	23.65262	10%	1.99	2.94
k	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Next, we compute the estimates of the ARDL long-run coefficients and of the error correction model (ECM). Appendix C contains the long-run estimates, while Appendix D contains the estimates of the corresponding ECM. ARDL (4, 4, 3, 4, 4, 2, 4) means that the dependent variable (GDPR) has a lag of four, while each independent variable, GFD, RE, CE, INVT, INF, and DEX, have a lag of four, three, four, four, two, and four respectively.

ARDL Long-Run Estimation:

GDPR = -3.1610 GFD -1.0607 GPD + 3.0561 RE + 3.0509*CE + 0.0194 INVT + 0.3664 INF -0.5588*DEX - 22.2984

The result of the long-run relationship shows that capital expenditure and revenue expenditure have a positive and significant impact on GDP growth at 10% level of significance. An increase in capital expenditure as a percentage of GDP of 1% will increase the GDP growth rate by 0.98% and an increase in revenue expenditure as a percentage of GDP of 1% will increase the GDP growth by 2.3%. This is in contrast to the view that says that capital expenditure is imperative for economic growth as it helps in employment generation and thus creates a multiplier effect. Also, note that the fiscal deficit has no impact on the long-run GDP growth rate as the coefficient is insignificant. This is in line with the Ricardian equivalence theory.

ARDL Error Correction Model (ECM):

The following results are from the short-run model. The error correction term (CointEq(-1)) has a negative and statistically significant coefficient of -1.4583

(p-value = 0.000). It suggests a high speed of convergence of GDP growth rate to its long-run equilibrium after a change in other variables. The results also show that gross fiscal deficit has a negative impact on GDP growth rate in the short run. An increase in the fiscal deficit as a percentage of GDP of 1% will decrease the GDP growth rate by 1.01%. This confirms the theory of classicals and neo-classicals. Revenue expenditure has a positive impact on GDP growth in the short run while the lagged values of the same have a negative impact. On the other hand, capital expenditure of the same period does not impact the GDP growth while the lagged values of the same impact GDP growth positively.

*NOTE- The lag length of different variables in the model was selected using the Akaike Info Criterion (AIC). It compares various models and selects the best one out of them. A low AIC score is expected to ensure that the model fits the data well without overfitting it.

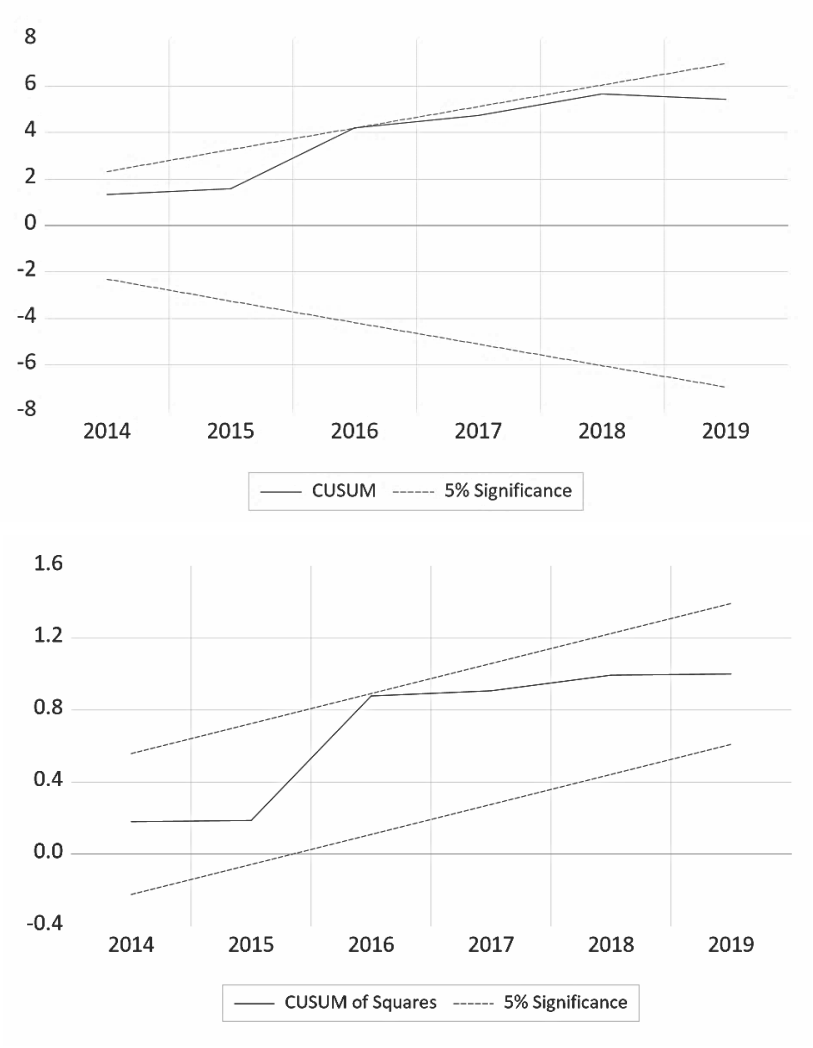
Diagnostic and Stability Tests

The adjusted R-square value of the Error Corrected model is 0.9723 which confirms that the model is a good fit. The Jarque-Bera normality test has a p-value of 0.9695 which is greater than 0.05 and hence it implies that the residuals are normally distributed. The LM serial correlation test implies that there is no autocorrelation between the residuals as the probability of chi-square (0.1448) is greater than 0.05. The data is also homoscedastic as the probability of chi-square (0.3386) is greater than 0.05 under the Breusch-Pagan-Godfrey test. Ramsey RESET test is conducted to test the linearity between variables. The t-statistic, F-statistic, and Likelihood ratio are all insignificant i.e. they are greater than 0.05, therefore there are no specification errors. The study also conducts two stability tests, namely, CUSUM and CUSUMSQ to investigate the stability of long and short-run parameters. The graphs of both stability tests presented in Figure 1 identify that plots for both stability tests are between critical boundaries at 5% level of significance. This confirms the accuracy of long-run and short-run parameters which have an impact on GDP growth rate over the period 1978-2019.

From the diagnostic test results, there is no evidence of serial correlation,

absence of normality, or heteroscedasticity and the model is well specified. The results also indicate the absence of any instability of the coefficients.

Figure 1: CUSUM and CUSUMSQ test of stability



POLICY PRESCRIPTIONS

According to the econometric analysis, the fiscal deficit doesn't affect the economic growth rate in the long run significantly however it has a negative impact in the short run. This result reinforces the idea of the classical and

neoclassical economists although only in the short run. The insignificant effect of government deficit in the long run may be due to the fact that it was not financed through increased taxation and that the productivity of government expenditure is not far off from that of the private sector. Keeping in mind these results, a balanced budget policy is recommended. A fiscal policy to boost the economy or stabalize it may not have long-lasting impact but it negatively impact the economy in the short run and thus deficits should be avoided.

Given the results, we should also emphasize on the quality of government expenditure. In the long run, revenue expenditure has a greater positive impact on GDP growth than capital expenditure. Low effectivity of capital expenditure on long-run growth is due to an ineffective utilization of public funds. The reason for low productivity might be corruption by politicians and officials in the government. The funds for capital expenditure get transferred from the central government to the state government and then to the local governments. At each stage in this process, the grant provided keeps on reducing due to the fact that the politicians and officials pocket most of the money for their personal benefits. Thus, the actual amount of money spent is very low and doesn't add much value to the economy in terms of productive capacity. Also, very often private enterprises often get contracts for large public investment projects by paying a hefty 'commission' to government officials. This shows that capital spending is highly discretionary in opposition to current spending which reflects spending on previous commitments (for example, wages, salaries, pensions, subsidies) allowing limited discretion to politicians and government officials. Noting all these possibilities, there are crucial steps to be taken to make the process of investing in projects more seamless. Firstly, useful and rightful projects should be recognized which can be done through consulting with experts in the field and getting more diverse views. Second, the process of funds transfer should be made more transparent so that the possibility of corruption becomes unlikely. And lastly, allocating projects to private entities should not be the responsibility of a single person. A committee could be formed whose members can then decide the allocation of the project with their votes. It should be effectively implemented so that benefits of such projects are substantial.

These suggestions and prescriptions are important to consider but it should also be seen that this study is limited in its scope with regards to the real practice. Although capital expenditures are not perfectly efficient they are very important for the purpose of economic development. Also, when the economy is in a big slump, the government needs to run a deficit atleast to appeal to the masses. All the points need to be contemplated on before taking any decisions and not only the economic but the social and political ramifications should be taken into account.

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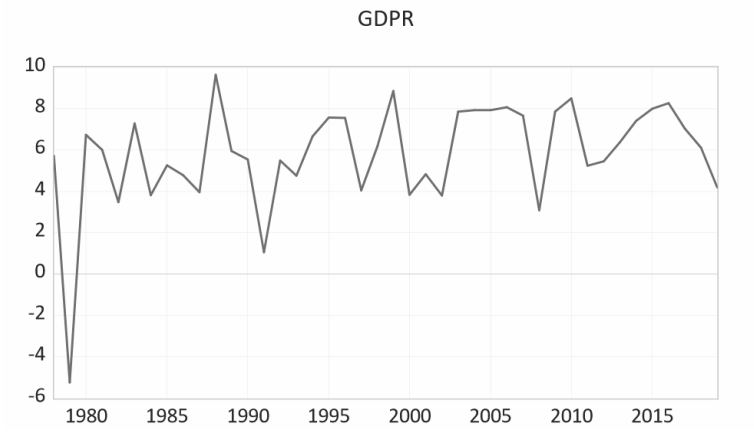
Appendix

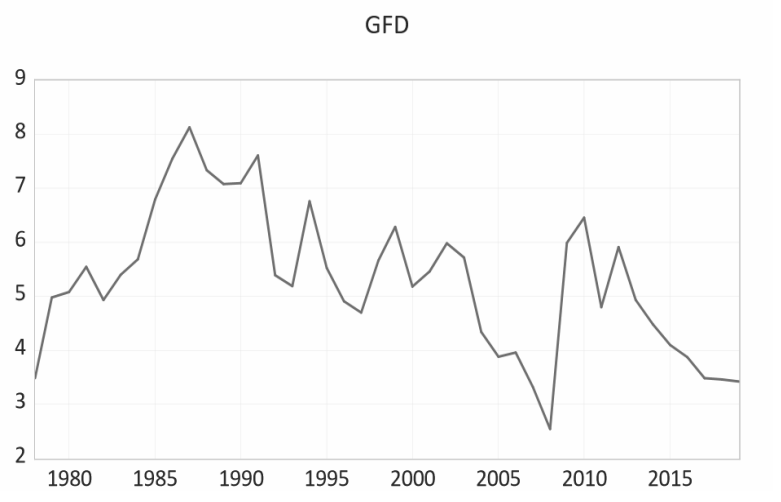
A. Summary of descriptive statistics

	GDPR	GFD	RE	CE	INVT	INF	DEX
Mean	5.821286	5.295476	11.68762	3.689762	29.03088	7.735738	5.337619
Median	6.063000	5.290000	11.94500	3.390000	27.50300	7.775500	4.563000
Maximum	9.628000	8.130000	14.10000	7.050000	41.93100	13.87000	29.93200
Minimum	-5.238000	2.540000	8.600000	1.540000	20.03000	2.491000	-8.736000
Std. Dev.	2.541659	1.332193	1.346158	1.838314	6.362010	3.091111	7.349707
Skewness	-2.010773	0.122583	-0.613153	0.350606	0.505662	0.173743	0.742118
Kurtosis	9.691194	2.408430	2.859877	1.611318	2.132990	2.055827	4.519162
Jarque-Bera	106.6536	0.717608	2.666052	4.235236	3.105348	1.771368	7.893918

Source: eviews11

B. Time series plot of variables used in the study




GFD
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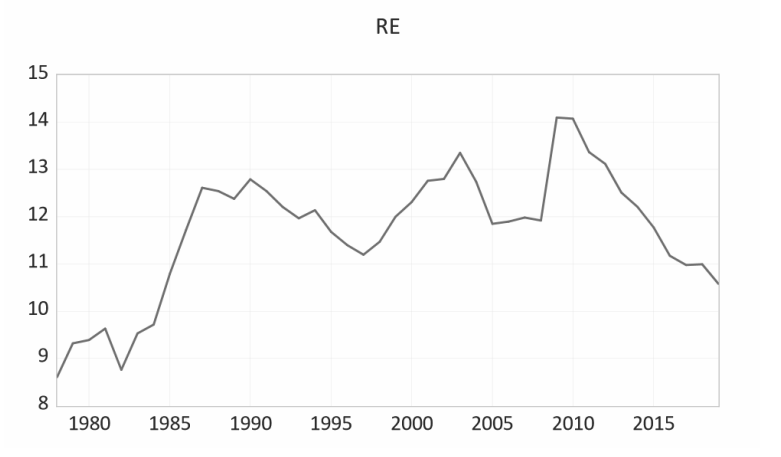
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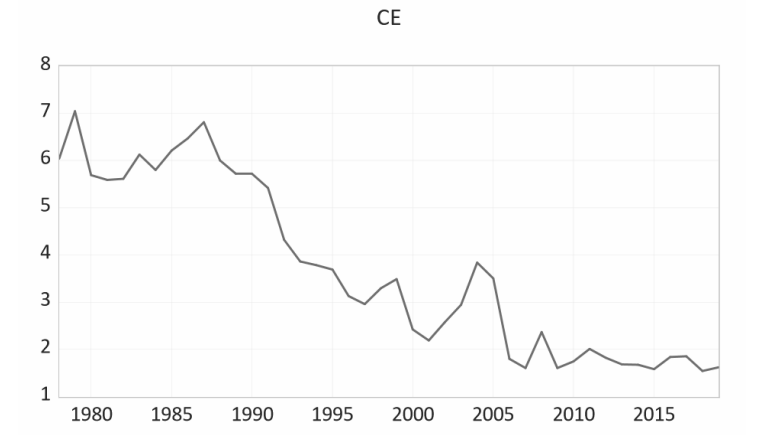
CE
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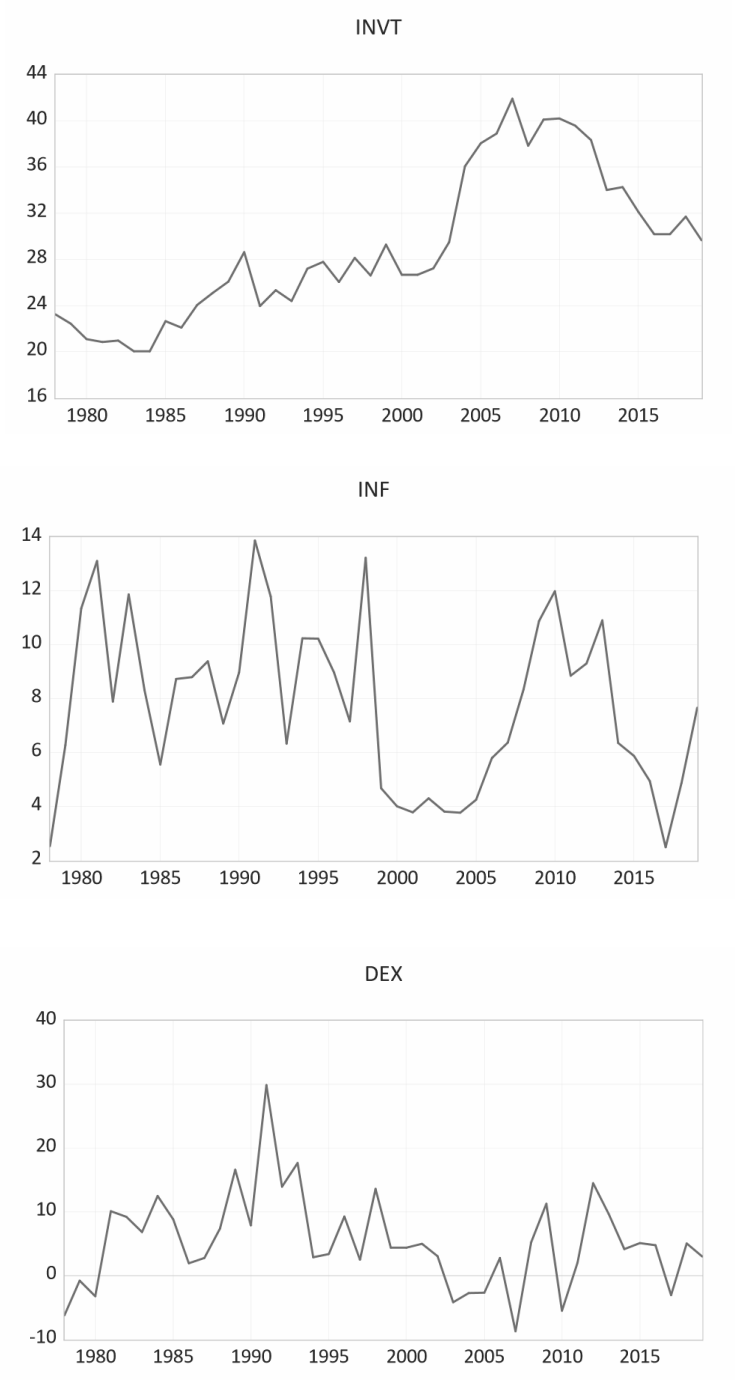

Source: eviews11

C. Long-run Estimation results using GDPR as Dependent Variable: ARDL (4, 4, 3, 4, 4, 2, 4) selected by Akaike Info Criterion (AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GFD	-0.938630	0.862137	-1.088725	0.3181
RE	2.301888	0.986024	2.334515	0.0583
CE	0.981132	0.473093	2.073866	0.0834
INVT	-0.167271	0.133818	-1.249984	0.2578
INF	0.565762	0.139310	4.061162	0.0066
DEX	-0.461807	0.111473	-4.142782	0.0061
C	-16.29542	5.807105	-2.806118	0.0309
EC = GDPR - (-0.9386 GFD + 2.3019 RE + 0.9811 CE – 0.1673 INVT + 0.5658 INF -0.4618 DEX – 16.2954)				

D. Error Correction Representation using GDPR as Dependent variable: ARDL(4, 4, 3, 4, 4, 2, 4) selected by Akaike Info Criterion (AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPR(-1))	0.263923	0.075247	3.507415	0.0127
D(GDPR(-2))	0.199627	0.057953	3.444631	0.0137
D(GDPR(-3))	0.429070	0.043350	9.897854	0.0001
D(GFD)	-1.018889	0.176209	-5.782272	0.0012
D(GFD(-1))	-0.144668	0.186967	-0.773763	0.4685
D(GFD(-2))	-0.500231	0.194687	-2.569409	0.0424
D(GFD(-3))	-1.770774	0.162653	-10.88683	0.0000
D(RE)	2.998919	0.366639	8.179494	0.0002
D(RE(-1))	-1.296094	0.323862	-4.001992	0.0071

D(RE(-2))	-2.002697	0.291116	-6.879368	0.0005
D(CE)	-0.360049	0.203307	-1.770961	0.1270
D(CE(-1))	-0.321383	0.195292	-1.645660	0.1509
D(CE(-2))	0.756114	0.183263	4.125829	0.0062
D(CE(-3))	1.331850	0.194201	6.858086	0.0005
D(INVT)	-0.192931	0.060619	-3.182675	0.0190
D(INVT(-1))	0.064039	0.058300	1.098428	0.3141
D(INVT(-2))	-0.653184	0.066400	-9.837138	0.0001
D(INVT(-3))	-0.585306	0.058344	-10.03202	0.0001
D(INF)	-0.098952	0.049573	-1.996069	0.0929
D(INF(-1))	-0.395845	0.063464	-6.237347	0.0008
D(DEX)	-0.216593	0.018022	-12.01828	0.0000
D(DEX(-1))	0.300162	0.021651	13.86337	0.0000
D(DEX(-2))	-0.058854	0.014443	-4.074950	0.0065
D(DEX(-3))	0.021198	0.014251	1.487553	0.1874
CointEq(-1)*	-1.458322	0.072023	-20.24793	0.0000
R-squared	0.990276	Mean dependent var		-0.048026
Adjusted R-squared	0.972324	S.D. dependent var		2.635552
S.E. of regression	0.438451	Akaike info criterion		1.432018
Sum squared resid	2.499116	Schwarz criterion		2.509377
Log likelihood	-2.208333	Hannan-Quinn criter.		1.815334
Durbin-Watson stat	1.755353			

STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE
ISSN 2581- 4931 (PRINT)

HISTORY OF THE JOURNAL

The idea to launch this Journal was discussed in December 2016 by the former Officiating Principal, **Dr. R. P. Rustagi** with **Dr. Santosh Kumari,** the Editor of the Journal. Since the idea appealed to **Dr. Santosh Kumari**, she took the initiative to contribute to SRCC by creating this new academic research Journal and took the responsibility for its Creation, Registration, License and ISSN (International Standard Serial Number) etc. along with *Editorship*. Therefore, **Dr. Santosh Kumari, Assistant Professor in the Department of Commerce, Shri Ram College of Commerce** was appointed as the Editor of the Journal vide. Office Order – SRCC/AD-158/2017 dated March 14, 2017. She meticulously worked hard in creating the concept and developing the structure of the Journal. She introduced the concept of COPE (Committee On Publication Ethics) to maintain the high academic standards of publication.

On behalf of SRCC, **Dr. Santosh Kumari** made every effort in seeking License from Deputy Commissioner of Police (Licensing), Delhi to register the Journal at "The Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India". The paper work for seeking license started under the former Officiating Principal, **Dr. R.P. Rustagi** on March 27, 2017. The foundation Issue of the Journal "**Strides – A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17**" was successfully released on the 91st Annual Day of SRCC held on April 13, 2017 by **Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India**. The title of the Journal got verified and approved by the Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India on April 21, 2017. On September 1, 2017, **Prof. Simrit Kaur** joined SRCC as Principal and signed each and every legal document required for further processing and supported **Dr. Santosh Kumari**.

On December 18, 2017, the College got the license "**License No. - DCP / LIC No. F. 2 (S / 37) Press / 2017"** to publish 'Strides – A Students' Journal of Shri Ram College of Commerce'. Due to change of Printing Press, the License got updated on March 09, 2018. On April 26, 2018, the SRCC Staff Council unanimously appointed **Dr. Santosh Kumari as the 'Editor of Strides**' for the next two academic years.

On April 27, 2018 (The Foundation Day of the College), **Dr. Santosh Kumari** submitted the application for the registration of the Journal. On May 04, 2018, the SRCC received the '**Certificate of Registration**' for **"*Strides – A Students' Journal of Shri Ram College of Commerce*"** and got the **Registration No. DELENG/2018/75093** dated May 04, 2018. ***On behalf of Shri Ram College of Commerce, it was a moment of pride for Dr. Santosh Kumari to receive the 'Certificate of Registration' on May 04, 2018 at the Office of Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India (website - www.rni.nic.in).***

On May 07, 2018, **Dr. Santosh Kumari** submitted the application for seeking ISSN (International Standard Serial Number) at "ISSN National Centre – India, National Science Library, NISCAIR (National Institute of Science Communication and Information Resources). Weblink - http://nsl.niscair.res.in/ISSNPROCESS/issn.jsp". Finally, the College received the International Standard Serial Number "**ISSN 2581-4931 (Print)**" **on June 01, 2018.**

We are proud that this journal is an add-on to the enriched catalogue of SRCC's publications and academic literature.

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