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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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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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The authors of best three papers from every Issue are awarded – First Prize, Second Prize and Third Prize on the SRCC Annual Day.

Principal's Message

The mission statement of the college signifying the existence and its road map to the achievement of its vision, reads as:

"To achieve and sustain excellence in teaching and research, enrich local, national and international communities through our research, improve skills of alumni, and to publish academic and educational resources"

To achieve and promote excellence in publications and applied research, the college has taken the initiative to launch a new journal exclusively to publish students' research papers and articles. It will be an add-on to the enriched catalogue of college publications and academic literature.

The Journal has provided an opportunity to the students of our college to focus on research. Since the students were not opened to the research methodologies at the undergraduate level, they were mentored by experienced faculty of our college. Simultaneously, their articles were also reviewed by the referees and tested for plagiarism before publication. After reporting all the suggestions recommended by the referees, the articles were revised and then finally published. The college had successfully released the foundation issue of the Journal **"Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17"** on the occasion of 91st Annual Day of the College held on 13th April, 2017. The Journal was released by **Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.**

I would like to congratulate the students whose papers are published in this issue of the journal and simultaneously encourage all the students to contribute their research papers and articles for the successive issues of the Journal.

Best wishes for their future endeavors.

Prof. Simrit Kaur
Principal

Editor's Message

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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 the high standards of publication, COPE (Committee On Publication Ethics) has been constituted. The COPE shall be the apex authority to take all the decisions related to the publication of research papers and articles in Strides. The decision of COPE shall be final and binding.

To maintain the 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 original and not published or presented 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' shall be bi-annually released.

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. Santosh Kumari
Editor

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

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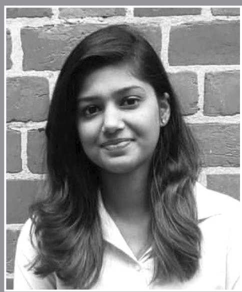
RESEARCH PAPERS

Environmental Kuznets Curve: An Analysis for India



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Abstract

This paper purports that the EKC for India is not an inverted "U" shaped curve based on the relationship between environmental degradation and per capita income. This is done with the help of key developmental variables (GDP, GDP per capita) and key environmental variables (CO2, CO2 per capita) using semi log equations for growth analysis and structural equations for EKC analysis for the time period 1990-2014. The findings of the paper reveal that there is strong evidence for the existence of an N-shaped EKC for India with the GDP term, its square and cube, all turning out to be significant with the expected signs.

Keywords: Environment, Economic development, Pollution, Environmental Kuznets Curve.

1. INTRODUCTION

Globalisation refers to the mixing of markets within the economy, that increases the interconnectedness of all the countries. Here people get closer and closer where there is a burgeon in exchange for goods and services and also in culture from different parts of the world. Creation of economic interdependence is one of the key factors for the betterment of many developed nations including India which is attained by globalisation. The main reason for the rapid growth of India is because of its open economy where there is openness to foreign trade and investment. The concept of liberalisation was initiated in India in 1991 where the role of foreign investors increased and the restriction on private business decreased. Liberalisation of trade, reduction of tariffs, restriction and other barriers to free trade has a positive effect by ways of development, but is negative on the other hand by ways of reduction in the environmental quality and leads to degradation.

The introduction of economic reforms in India in 1991, uplifted the private sector as well as the public private partnership where all these initiatives were aiming for a rapid growth in industrialisation. The main impact of these initiatives has been directly seen through the amount of increase in air pollution. Compared to all other pollutants Suspended Particulate Matter (SPM) causes more respiratory and lung problems. In 1995 people died prematurely cause of SPM were around 52000 in 36 Indian cities and Delhi holds the record where there was a premature death every hour in 1997.

Globalisation led to an increase in economic development and increased the utilisation of natural resources to meet the demand of trade and production. It also led to an increase in the rate of extinction in flora and fauna by ways of deforestation, overfishing, dam construction etc. The positive result of globalisation and liberalisation in India can be seen through its foreign trade that has increased India's share in world trade and share of India's GDP where it was 0.53 percent and 6 percent respectively in 1990-91 and has increased to 1.96 percent and 23.39 percent respectively in 2014-2015. In spite of an increased GDP there is also an increase in CO2 emission of India that was 619115 kilotons in 1990 raised to 22,38,377 kilotons in 2014 (WTO).

To understand the concept of increase in environmental degradation in order to an increase in economic development can be studied through ENVIRONMENTAL KUZNETS CURVE. The idea of EKC was first introduced by Grossman and Krueger. The EKC literature attempts to examine the aggregate impact of economic globalization and liberalisation and the environment.

The main objectives of the paper are:

1] To find trends in the growth of key developmental variables (GDP, GDP per capita)

2] To find trends in the growth of key environmental variables (CO2, CO2 per capita)

3] To test the validity of the EKC hypothesis for India

Accordingly, the primary hypotheses of this paper are:

1] There are no trends in the growth of key developmental variables (GDP, GDP per capita)

2] There are no trends in the growth of key environmental variables (CO2, CO2 per capita)

3] The EKC hypothesis does not hold true for India.

2. CONCEPTUAL FRAMEWORK:

The environmental Kuznets curve (EKC) is a hypothesized relationship between economic development and environmental quality. There are enormous factors or indicators to check the quality of environment. Environmental Kuznets Curve reveals how a specific measurement of environmental quality changes as the income of a nation increases. Environmental degradation goes up to a level where the development of the economy reaches a stage and after that stage the degradation reduces or the quality of the environment increases. In the early stage of economic development, the pressure on environment increases faster than income and decreases relative to GDP growth at higher income levels.

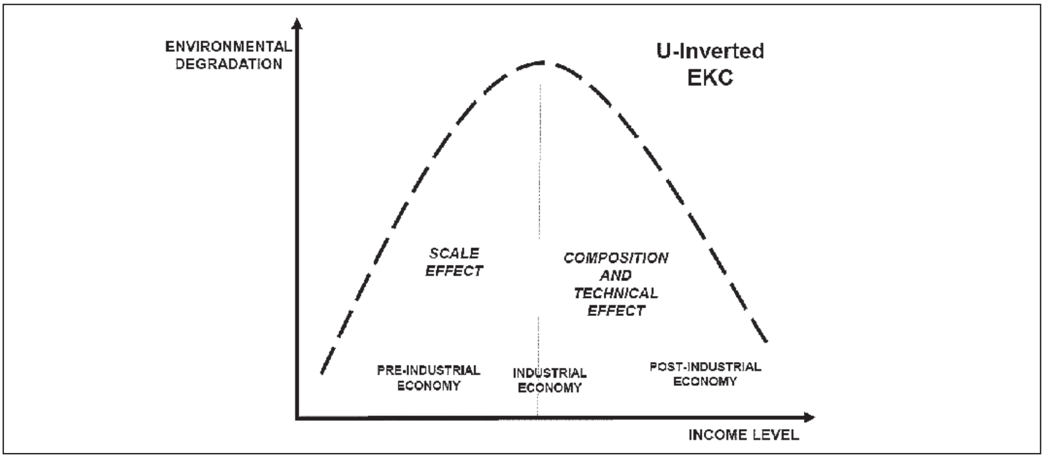
Inverted U shaped EKC: According to the EKC, first proposed by Grossman and Krueger (1991), the inverted u shaped relationship between environmental degradation and income level with the following three different channels :

1] scale effect

2] composition effect

3] technique effect

In the initial stage of economic development, there is a massive use of natural resources and an increase in the emission of pollutants that increase environmental degradation. This is known as **scale effect.** As income increases, the polluting activities decreases and there is a structural change that influences the environment with economic development. This is known as **composition effect.** As the economy attains a good stage on development, it starts to invest more in its R&D and technological process to bring in new ideas replacing the pollution causing technology. This is known as **technique effect.** Therefore, EKC plays a negative scale effect in the early stages and then a positive structural and technical effect after attaining a certain stage.



The idea of inverted U-shaped curve for environmental degradation and per capita income was given by Grossman and Krueger in 1991. This idea gained support from the Development Report of World Bank 1992 and Discussion Paper of ILO 1993. Many researchers have also supported the idea of inverted U-shaped curve in their studies like Culas (2012) who investigated the curve for 23 African countries using Fixed Effect Model (FEM) and also by using Random Effect Model (REM)he investigates the same for 9 Latin American countries. The inverted U shaped relationship has also been proved in the works of Leitão (2010) who used the methodology of FEM for 94 differently developing level countries.

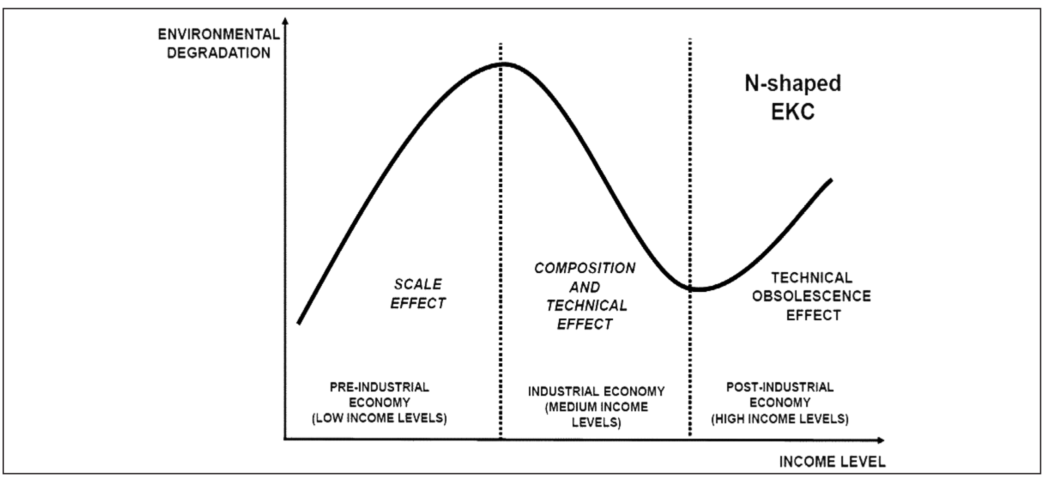
A standard explanation was by Dasgupta et al. (2002) regarding the inverted U-shaped curve: In the initial level of industrialisation, people focus more on the development of the economy than on the environmental quality whey they fail to minimise the pollution rate. After attaining a certain stage of development, the leading industrial sectors starts becoming cleaner where the people concern moves to improving the environment that leads to effective run of regulatory institutions. The conventional EKC has purported an inverted-U shaped curve based on a quadratic function and not the cubic function of income and a measure of environmental degradation.

N shaped EKC: The recent literature on EKC has challenged the validity of such an EKC in the long run. Recent work on EKC purports the same as an N-shaped curve explained in three phases:

- **First phase:** This phase is characterised by poorer countries representing the upturn in the EKC as these countries can't afford cleaner technologies.

- **Second Phase:** This phase is characterised by middle income countries, wherein investments in cleaner technologies bring about delinking of economic development and environmental degradation
- **Third Phase:** This phase is characterised by a relatively higher level of income representing relinking of economic development and environmental degradation as the benefit from cleaner technologies is out rate by pollution caused due to consumption patterns.

This reveals that after a certain stage of development, there is again a positive relationship (N shaped curve) between environmental degradation and economic development. Torras and Boyce (1998) revealed that the occurrence of N-shaped curve is possible when the scale effects overcome the composition effect and technical effects. The idea of N-shaped curve was found in the1990s where many researchers thought it was a new phenomenon. The following are the studies that prove the occurrence of N-shaped curve. Grossman and Krueger (1995) and Panayotou (1997) used economic development and sulphur dioxide (SO2) for EKC and found a N- shaped relationship. The main problem in the above cases were the existence of few observation after the second turning point. This was because of the extreme end of the data set which led to dismissing of the N-shaped curve. Lee et al. (2009) proved that the occurrence of inverted U shaped curve is because of the quadratic model being used and when cubic model is adopted, the result will be a N shaped curve. Moomaw and Unruh (1997) adopted the methodology of FEM and cross-sectional OLS,in their studies proving the occurrence of an N-shaped EKC. Methods like pooled OLS and generalized least squares are also used for examining where N-shaped EKC for Austria and for 15 Latin American countries respectively.



3. LITERATURE REVIEW:

Shanbaz and Sinha (2019) attempted to investigate the Environmental Kuznets Curve (EKC) using CO2 emission for the time period 1991-2017. The end result of the above study shall be categorized into the following methods: time series data and panel data. It is found that the above case has different shapes of curve, whereas few papers and researchers say that no proof has been authenticated for EKC. The findings of the above EKC estimation with the help of CO2 is indecisive and the root cause of this depends upon the choosing of method, interval of time, selection of contexts etc.

Qayyum Khan et al. (2018) has attempted to investigate the result of financial growth, the disparity in income, utilization of energy and per capita GDP on carbon dioxide and EKC for three emergent nations- Bangladesh, India and Pakistan for the time period 1980-2014.The methodology adopted for examining the relationship were Technology model with Fully Modified Ordinary Least Squares (FMOLS), Regression on Population, Affluence. The findings reveal that the study has a positive relationship with CO2 emission only with India whereas there is an inverse relationship for Pakistan and Bangladesh. Added to it, income disparity in Bangladesh gave a rise to CO2 emission and is inverse in the case of India and Pakistan.

Mohapatra and Giri (2009) attempted to investigate the discharge of Sulphur dioxide, Nitrogen dioxide and Suspended Particulate Matter (SPM) in India using EKC to find out the relationship between economic growth and the above parameters for the time period 1991-2013. Time series data and cross section are the methodologies adopted. This method has been applied to 15 states particularly in the industrial and residential location. The end result of the paper reveals that there is only directional inverted U-shaped curve applicable for both the locations without being significant. And when we take developmental indicators into consideration the end results are being significant with the sign expected.

Wu et al. (2015) attempted to investigate the relationship between $C0_2$ emission and per capita income during the years 1990-2005. Innovated model of quantile regression was the methodology adopted and was applied to 104 nations worldwide. The findings reveal a positive relationship for upper-middle, low-middle- and low-income nations in every quantile.

Sinha and Shahbaz (2017) attempted to investigate the current inexhaustible energy generation in India where it had made an endeavour to evaluate EKC using carbon dioxide in India for the time period 1972-2015. Unit root test with multiple structural breaks and autoregressive distributed lag (ARDL) approach to long run are the methodology adopted. The findings of the paper revels an inverted U-shaped curve for India. No positive impact has been seen on $C0_2$ but for overall energy utilisation, the long run elasticity is higher than the short run.

Pal and Mithra (2017) attempted to examine the long run relationship among CO_2, utilization of energy and investigates the EKC hypothesis for the time period 1971-2012. The study has used the methodology of the autoregressive distributed lag model of Pesaran et al. (2001. The findings of the paper reveal that there is existence of N shaped EKC.

4. DATA AND METHODOLOGY

4.1 DATA:

World development indicator (WORLD BANK) is the main source for all the data collected. Aggregate C02 emission (kt)and CO2 emission per capita (metric tons) are the dependent variables and GDP (current US$) and GDP per capita (current US$) are the independent variables taken for the time period 1990-2014.

4.2 METHODOLOGY:

Methodology can be divided into two parts namely:

1] **Growth Analysis -** This shows the trend in growth of dependent and independent variable through semi log equations.

2] **EKC Analysis –** Our main interest is in the theory of EKC which we examine in two forms through structural equations with GDP as the explanatory variable in aggregate and per capita terms. The methodology for EKC analysis has been based on Gambhir (2017).

STEP-1 Growth Analysis:

We study trends in growth of 4 variables namely, aggregate CO2 emission (kt), CO_2 emission per capita (metric tons), GDP(US$), GDP per capita (US$) through a set of semi log equations. Visually we observe the trends in variables through graphs. In the absence of structural equation, we have estimated growth in macroeconomic variable through a semi log equation where we use year as an all catch variable. It is usually interpreted as the exogenous effect on the dependent variable.

General form $Y_t = e^{\alpha + \beta t}$

Log linearizing and adding the error term,

$LnY_t = \alpha + \beta_t + e_t$

Property of a semi log equation,

$LnY_t = \alpha + \beta_t$

$LnY_{t-1} = \alpha + \beta\ (t-1)$

$LnY_t - LnY_{t-1} = \beta\ [t- (t-1)]$

$Ln\ (Y_t/Y_t-1) = \beta$

So, β = annual growth rate.

Estimating growth equation:

1) $LnCO_{2t} = \alpha 1 + \beta_{1t} + e_{t1}$ (1)

   α_1 = intercept

   β_1 = slope/growth rate

   ACGR = $[\ AL\ (\beta_1) - 1]\ *100$

2) $LnCO_{2t} = \alpha_2 + \beta_{2t} + e_{t2}$ (2)

   α2 = intercept

   β2 = slope/growth rate

   ACGR = $[\ AL\ (\beta_2\ ) - 1]*100$

3) $LnGDP_t = \alpha_3 + \beta_{3t} + e_{t3}$ (3)

   α3 = intercept

   β3 = slope/growth rate

   ACGR = $[\ AL\ (\beta_3) - 1]*100$

4) $LnGDPC_t = \alpha_4 + \beta_4 t + e_{t4}$ (4)

   α_4 = intercept

   β_4 = slope/growth rate

   ACGR = $[\ AL\ (\beta_4) - 1]*100$

STEP-2 EKC ANALYSIS:

With aggregate CO_2 emission as dependent variable, we study the two forms of EKC through the following estimating equations:

1) $CO_{2t} = \alpha_5 + \beta_5 GDP_t + \beta_6 GDP2_t + et_5$ (5)

2) $CO_{2t} = \alpha_6 + \beta_7 GDP_t + \beta_8 GDP2_t + \beta_9 GDP3_t + et_6$ (6)

With per capita CO_2 as dependent variable, we study the two forms of EKC through the following estimating equations:

1)$CO2PC_t = \alpha_7 + \beta_{10} GDPC_t + \beta_{11} GDPC2_t + et_7$ (7)

2) $CO2PC_t = \alpha_8 + \beta_{12} GDPC_t + \beta_{13} GDPC2_t + \beta_{14} GDPC3_t + et_8$ (8)

5. ANALYSIS AND RESULTS:

1] GROWTH ANALYSIS:

- Aggregate co2 emissions

Table-1: Summary output for aggregate CO2 emission (kt)

	Coefficients	Standard error	t Stat	P-Value
Intercept	-89.55067917	2.757622556	-32.473871	1.02E-20
Year	0.051694769	0.001377425	37.53000904	3.87E-22

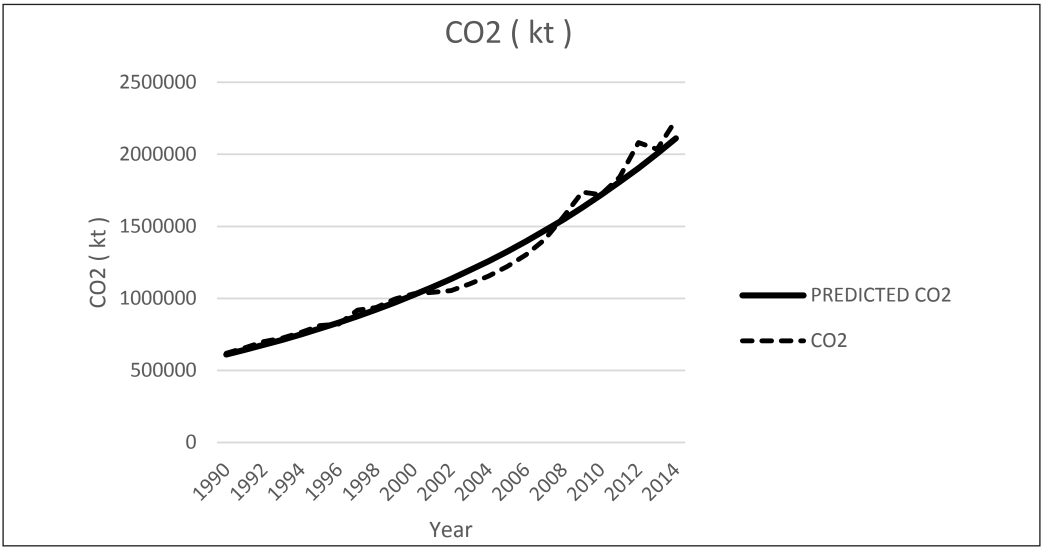
Here, the R square value is 0.983932955, which suggests that our regression line fits the data very well.

Estimated equation:

$LnCO_2 = -89.55067917 + 0.51_t + et_1$ (9)

Emission starts at a low level (-89.55) and has grown at a rate of 0.051 at the time period between 1990-2014. Here, both the values are significant so this shows that there was a definite trend of aggregate CO2 emissions growing at a rate of 5.16% per annum over the period 1991-2014.

Figure-1: Trends in aggregate C02 emission (kilotons)



- Per capita CO2 emissions

Table-2: Summary output for CO2 emission per capita (in metric tons)

	Coefficients	Standard error	T Stat	P – value
Intercept	-69.18344641	3.051645525	-22.67086588	3.09422E-17
Year	0.034581605	0.001524289	22.68704591	3.04591E-17

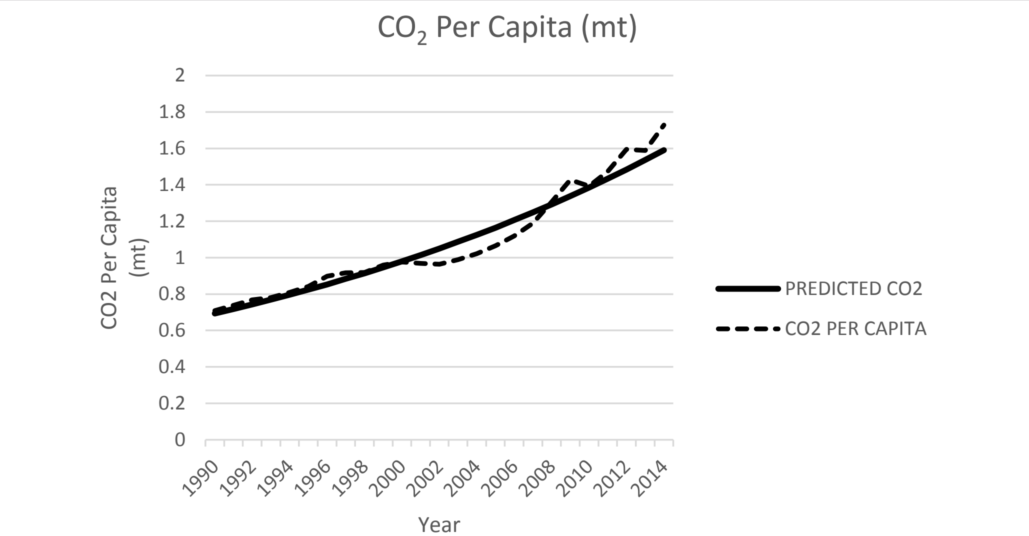
Here R square value is 0.957225382 which suggests that our regression line fits the data very well.

Estimated equation:

$$LnCO2PC_t = -69.18344641 + 0.034_t + et_2 \qquad (10)$$

The emissions start at low level (-69.18) but are found to be growing at a rate of 3.45% per annum over the time period 1990-2014. Per capita emission indicates a behavioural trend which shows that while population is growing, the per capita emissions are growing at a slower rate.

Figure-2: Trends in Per capita CO2 (metric tons)



- Summary output for GDP

Table-3: Summary output for aggregate GDP (US BILLION $)

	Coefficients	Standard error	t Stat	P – value
Intercept	-175.7570574	7.936611407	-22.14510052	5.18887E-17
Year	0.091046977	0.003964316	22.96663156	2.32455E-17

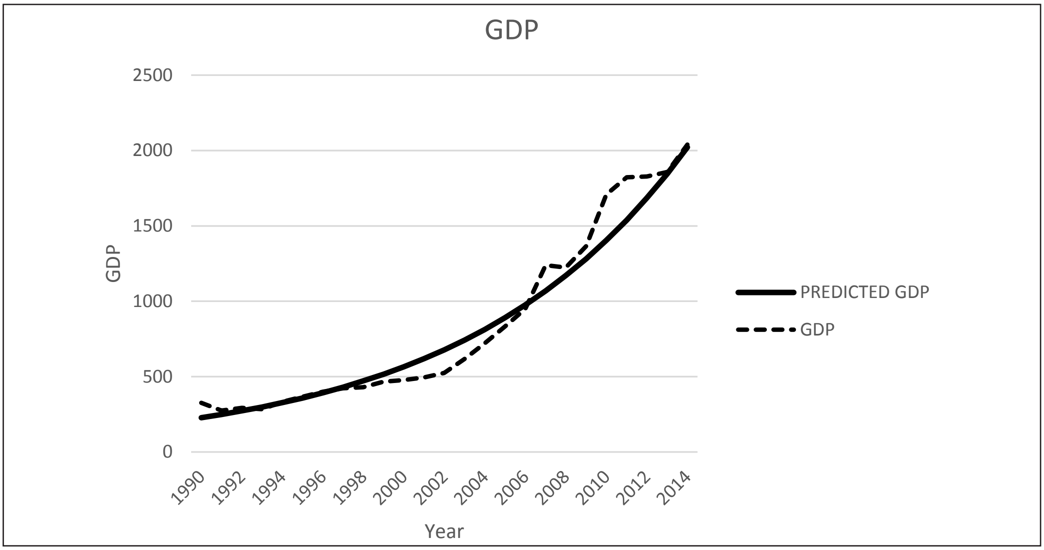
Here, the R square value is 0.958217232, which suggests that our regression line fits the data very well.

Estimated equation:

$$LnGDP = -175.7570574 + 0.091046977_t + et_3 \quad (11)$$

GDP starts at low level (-175.75) and has grown at a rate of 9.1% for the time period between 1990-2014. Here, both the values are significant. This shows that in the beginning India was yet to embark on a growth trajectory but over the 25-year period, GDP grows at a rate of 9.1 per cent per annum.

Figure-3: Trends in GDP (US BILLION $)



- Summary output for GDP per capita

Table-4: Summary output for GDP per capita (in US $)

	Coefficients	Standard error	t Stat	P – value
Intercept	-142.2626711	8.31769173	-17.1036239	1.41996E-14
Year	0.07429068	0.004154664	17.88127182	5.46986E-15

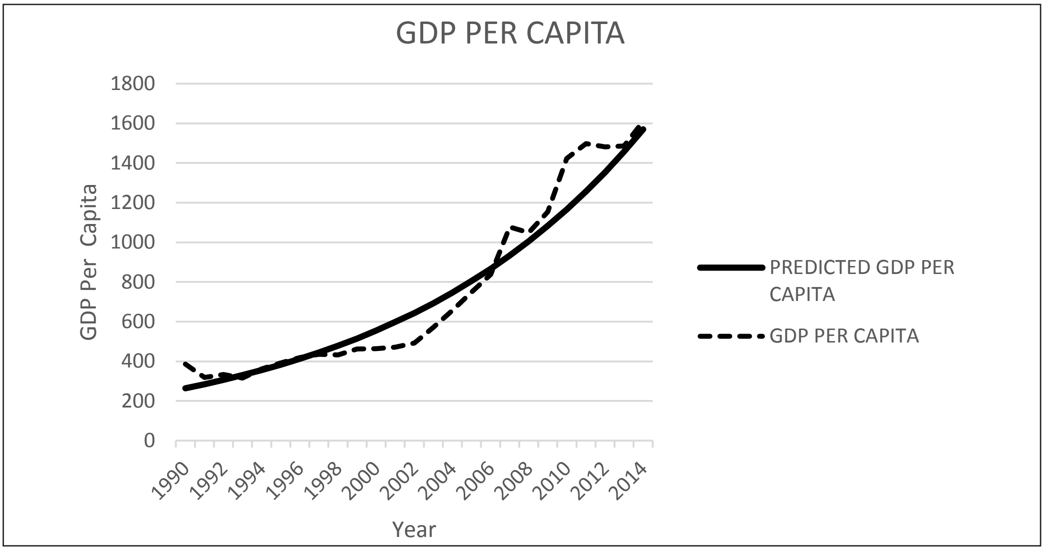
Here the value of R square is 0.932893716, which suggests that our regression line fits the data very well.

Estimated equation:

$$LnGDPC_t = -142.2626711 + 8.31769173_t + et_4 \quad (12)$$

The per capita GDP starts at a low level (-142.26) but grows at a rate of 7.4% per annum over the period 1990-2014. The impact of behavioural tendencies can be inferred from the dip in the growth rate of per capita GDP in comparison to the growth rate of GDP in aggregate terms. This again implies that while population is growing, per capita GDP is growing at a slower rate.

Figure-4: Trends in GDP per capita (US $)



2] EKC ANALYSIS:

With aggregate CO_2 emissions as the dependent variable, we study 2 forms of EKC

- Inverted-U shaped EKC:

Table-5: Summary output for inverted U shaped EKC

	Coefficients	Standard error	t stat	P – value
Intercept	473695.9	71146.0356	6.65807864	1.07783E-06
GDP (IN US BILLION $)	986.051635	177.2473173	5.563139968	1.36323E-05
GDPsq (IN US BILLION $)	-0.088381609	0.080192179	-1.102122544	0.282319953

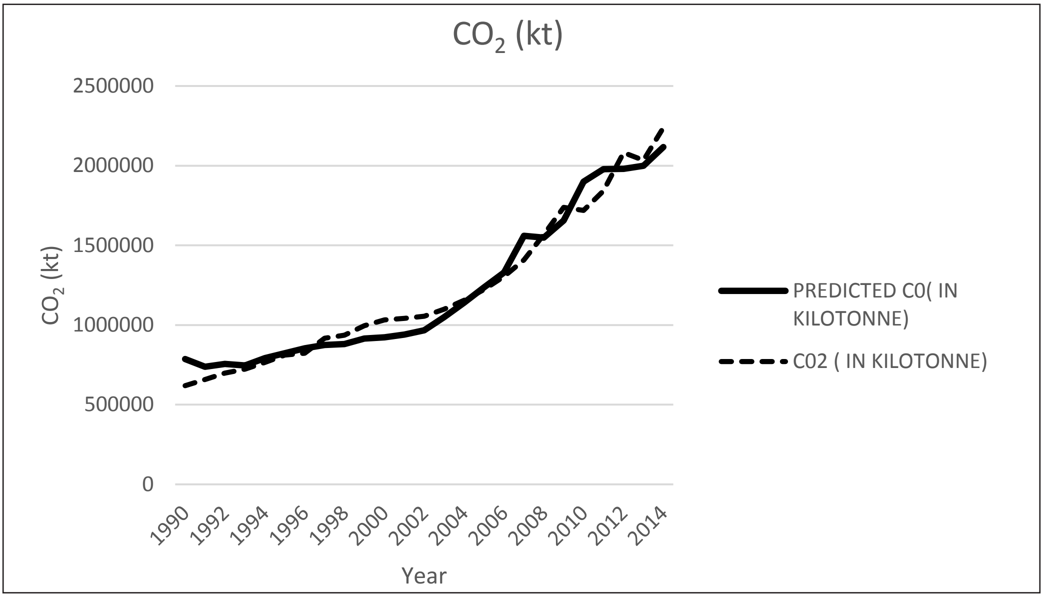
Here the value of R square is 0.96545095, which suggests that our regression line fits the data very well.

ESTIMATED EQUATION:

$CO2_t = 473695.9 + 986.051635GDP_t - 0.0883816092_t + et_5$ (13)

This equation is meant to verify an inverted U shaped EKC which is the conventional form of EKC. the initial level of CO2 emissions is 473695 kilotons. The coefficient of GDP (986.05) is positive and highly significant. The coefficient of the square term of GDP is negative but not significant. This renders weak evidence on the quadratic term though the sign is as expected. Since the GDP terms bear the expected signs, it is indicative of an inverted u-shaped curve.

Figure-5: Inverted U shaped EKC using CO2 (kilotons)



- N-shaped EKC

Table-6: Summary output for N shaped EKC

	Coefficients	Standard error	t Stat	P – value
Intercept	102179.008	127927.1302	0.798728212	0.433389047
GDP (US BILLION $)	2504.432019	486.3376695	5.149574413	4.21378E-05
GDPsq (US BILLION $)	-1.708890815	0.499062568	-3.424201546	0.002548959
GDP cube (US BILLION $)	0.000488863	0.0001492	3.276562137	0.003601491

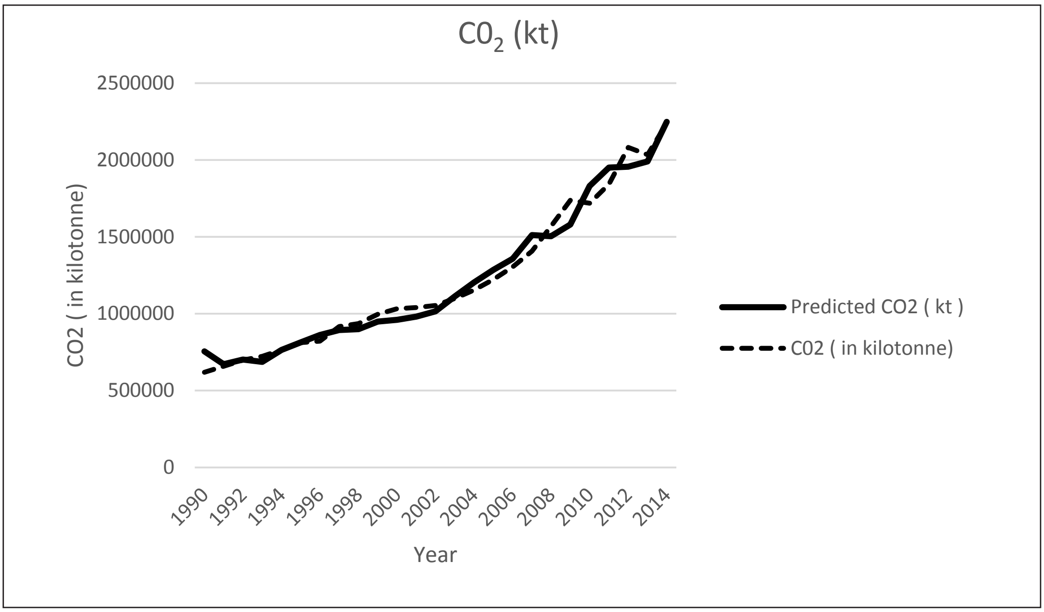
Here the value of R square is 0.977138478, which suggests that our regression line fits the data very well.

ESTIMATED EQUATION:

$$CO2_t = 102179.008 + 2504.432019GDP_t - 1.708890815GDP2_t + 0.000488863GDP3_t \qquad (14)$$

The intercept term is smaller (102179.008) which indicates that the second form of EKC is accounting for more explained variation which implies that this form is more viable than the previous form. Perhaps the effect of the cubic term of GDP was getting combined with the intercept of the previous form. The co-efficient of GDP is large, positive and significant. However co-efficient of the quadratic term is relatively small but significant with the expected sign. For the cubic term, the co-efficient is very small but positive and significant. This implies that the co-efficient of all terms of GDP turns out to be significant and with the expected signs. This renders evidence for the validity of an "N" shaped EKC for India.

Figure-6: N shaped EKC using CO2 (kilotons)



With per capita C02 emissions as the dependent variable, we study the 2 forms of EKC:

- Inverted U shaped EKC:

Table-7: Summary output for inverted U shaped EKC

	Coefficients	Standard error	t Stat	P – value
Intercept	0.580967625	0.073447036	7.910021393	7.11896E-08
GDP Per Capita (in US $)	0.000698297	0.00020194	3.457938521	0.00223877
GDP Per Capita sq. (Metric Tons)	-2.91361E-08	1.08007E-07	-0.269761449	0.789857965

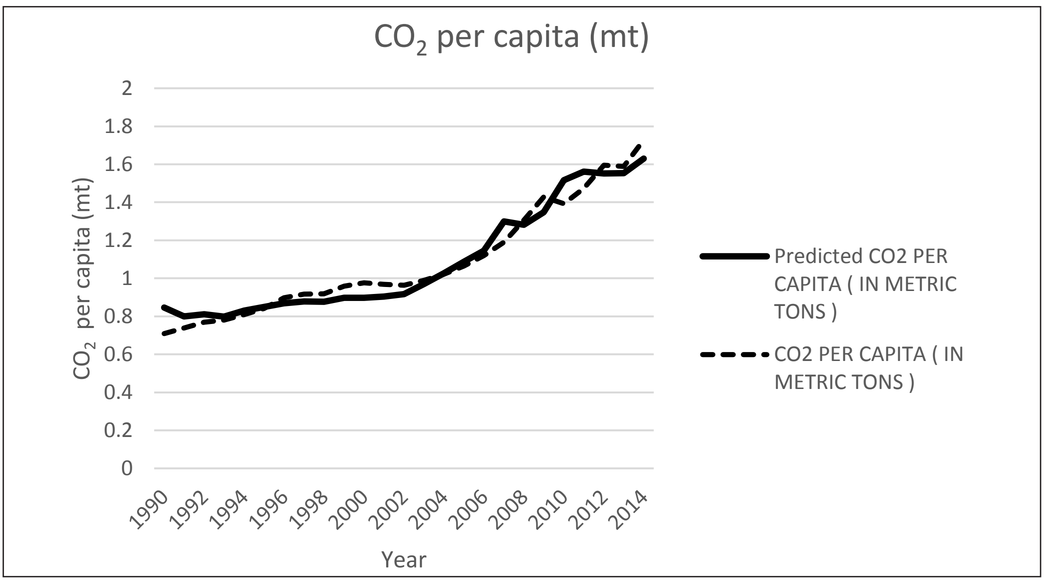
Here the value of R square is 0.95163215, which suggests that our regression line fits the data very well.

ESTIMATED EQUATION:

$$CO2PC_t = 0.580967625 + 0.000698297GDP_t - 2.91361E\text{-}08GDP2_t + et_7 \qquad (15)$$

the intercept is 0.581(metric tons) which is statistically significant. This indicates the initial level of per capita emissions. The per capita GDP term (0.00069) is positive and significant, however the square of per capita GDP is negative but not statistically significant. This implies that the findings based on aggregate CO2 emissions have been re-iterated by the findings for per capita CO2 emissions.

Figure-7: Inverted U shaped EKC using CO2 per capita (metric tons)



- N shaped EKC:

Table-8: Summary output for N shaped EKC

	Coefficients	Standard error	t Stat	P – value
Intercept	0.191664492	0.177490677	1.079856672	0.292452717
GDP per capita (in US $)	0.00236434	0.000727314	3.250781148	0.003824436
GDP per capita square (in US $)	-2.05052E-06	8.5948E-07	-2.385769812	0.026539479
GDP per capita cube (in US $)	7.22392E-10	3.05144E-10	2.367378352	0.027595059

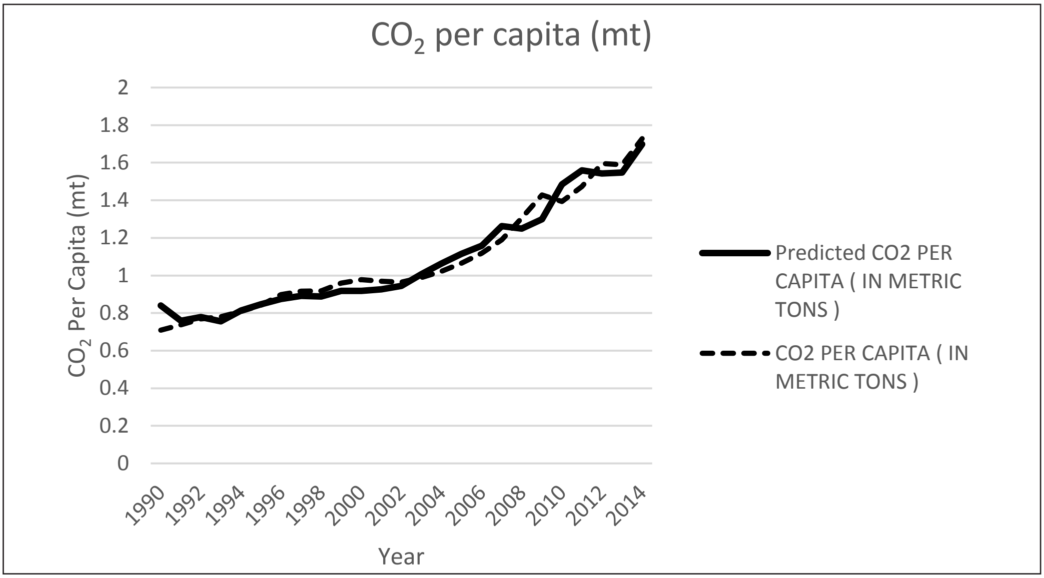
Here the value of R square is 0.961821286, which suggests that our regression line fits the data very well.

Estimated equation:

$CO2PC_t = 0.191664492 + 0.00236434GDPC_t - 2.05052E\text{-}06GDPC2_t + 7.22392E\text{-}10GDPC3_t$ (16)

Through the equation constructed for per capita emissions, we infer the same phenomena of the cubic term being merged in the intercept in the equation representing the conventional EKC. The coefficient of GDP is 0.0023 which is positive and significant. The coefficient of the square of GDP is negative and significant. And the coefficient of the cubic term of GDP is positive and significant. This renders evidence for an N shaped EKC in per capita terms, however this evidence is weaker in comparison to the evidence generated for the N shaped EKC based on aggregate CO2 emissions.

Figure-8: N shaped EKC using CO2 (metric tons)



6.CONCLUSION:

EKC occupies a central position in any discussion on environmental degradation and development. While development and environment have always been understood as a conflicting phenomenon, EKC offers the possibility of reconciling the two by purporting that at higher levels of development, the environmental pollution shall invariably come down owing to investments in greener technologies. However, the modern literature has challenged this conventional notion of an inverted U-shaped EKC by suggesting that the downturn expected in the inverted-U shaped pattern shall be succeeded by an upturn at relatively higher levels of income. Hence, in the long run what economies would experience would be an N-shaped EKC. Against this backdrop, we attempted to investigate the form of EKC hypothesis valid for India over the time period 1990-2014. With CO2 emissions as the dependent variable and GDP as the independent variable, we tested EKC in two forms: inverted-U shaped EKC and N-shaped EKC. The same has been examined with these variables in per capita terms.

We found strong evidence for the existence of an N-shaped EKC with the GDP term, its square and cube, all turning out to be significant with the expected signs. These findings were reiterated in the per capita terms as well.

This implies that the conventional notion of EKC stands defeated, and merely investment in greener technologies cannot make a country sustain its lower levels of pollution over time rather it is the consumption patterns that act as the key determinant in sustaining or bringing down the pollution levels. Since, EKC appears for India in an N-shaped form, it implies that at a higher level of income, the benefit from investment in cleaner technologies shall be outweighed by the environmental degradation caused due to consumption patterns in the long run.

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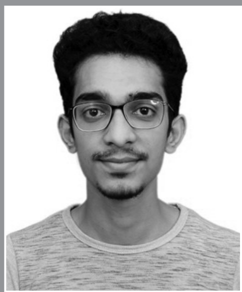

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Bursting the Bubble of Myths and Restructuring Universal Basic Income

ABSTRACT

Carrying forward the unprecedented paradigm shift of Universal Basic Income that was formally introduced in India by the Economic Survey of 2016-17, this paper endeavors to justify the need of a basic income supplement to improve upon the status quo as compared to the existing welfare schemes after drawing from the successful consequences of a myriad of pilot projects conducted across the globe and considering the challenges that the Indian social fabric is beset with. Along with bursting the bubble of myths that surround this conception, this paper attempts to reconfigure the basic principles of Universal Basic Income to make it feasible for India. Premising this policy proposal on some pre- requisites, the availability of fiscal space for establishing this progressive policy proposal has been examined to ensure its viability. Finally, being a step in the right direction, the recent egalitarian programmes by the Central and State governments to assure an income supplement to small and marginal farmers have been emphasized.

Keywords – Universal Basic Income, Pilot Projects, Restructuring, Busting the Bubble of Myths, Fiscal Space, Pre- requisites, Guaranteed Income Supplement.

INTRODUCTION

Ever since India made its tryst with destiny, emerging from the yoke of the British rule, the trajectory of Indian economic growth has made remarkable strides becoming one of the fastest growing economies in the world. Yet there exists within the Indian social fabric a world of stark contrast wherein the underprivileged reel under the humanitarian catastrophe of poverty, hunger, malnutrition, stagnant growth and the subsequent deprivation of capabilities owing to the yawning gap of income inequality and the uneven distribution of economic resources. Not only this, the existing welfare schemes are beset with innumerable loopholes such as misallocation error, exclusion error, out of system leakages, corruption, market distortion, etc. that make the intended transformation thwarted as in ground reality these currently in place programmes fail to pan out. This necessitates the need for a more effective mechanism that can act as an antidote to these appalling issues by channelizing the benefits to the indigent beneficiaries.

Capturing imaginations from all ends of the ideological spectrum is the propounded conception of Universal Basic Income that holds the inherent potential of enhancing the plight of the rank & file and dealing with the aforementioned issues with adequate resolve and resources. According to the Nobel laureate Abhijit Banerjee (2016), a Universal Basic Income basically refers to a fixed cash transfer to be paid by the government regularly regardless of the citizen's employment status or socio-economic condition to ensure egalitarianism, being a compelling paradigm shift from the existing in-kind transfers. This will make it the social obligation of the state to bestow upon its citizens a necessary material foundation with dignity rather than out of generosity, enhancing their accessibility to essential goods for subsistence.

This proposed welfare transfer is premised on the four deemed essential pillars of **Universality, Un-conditionality, Individuality and Agency.** Firstly, Universality entails that the state should not differentiate between the citizens on any grounds be it caste, creed, gender, or other socio-economic aspects. Secondly, Un-conditionality heralds that there should be no strings attached with the income supplement. Thirdly, the focus of this policy proposal should be on individuals rather than households or any other unit that can be taken into account. Lastly, the agency of the citizens should be respected that implies that beneficiaries should have the autonomy to make choices regarding how the income supplement is spent suiting their needs and preferences.

OBJECTIVES

Drawing from the experiences of a plethora of pilot projects of guaranteed basic income conducted across the world, this paper endeavors to show how a guaranteed income supplement can better acknowledge the needs of the impoverished sections and destitutes who are at the margins of social stratification in the Indian scenario, after refuting the conceptual cases that loom large against this policy proposal. Further this paper attempts to restructure the essential pillars of Universal Basic Income and evaluate the availability of fiscal space for financing this guaranteed income supplement.

REVIEW OF LITERATURE & PILOT PROJECTS:

Gaining widespread currency across the political and economic spectrum, several studies have time and again, examined the efficacy of a basic income supplement as an instrument aimed at alleviating poverty. Not only this, there are a myriad of other facets and positive externalities that have been unraveled by the intelligentsia in the social arena of health, education, sanitation, autonomy and ultimately a betterment in the standard of living of the entitled beneficiaries as highlighted below.

Joshi (2016) sheds light on the fact that owing to the redistributive capacity of this poverty reduction tool, it will make the essential amenities accessible by guaranteeing income security to the beneficiaries. This can serve as a cushion to help them survive under extreme situations such as unemployment, loss of livelihood due poor health, disability or other chronic circumstances and death of the primary breadwinner making the bereaved families vulnerable.

As put forth by Dreze (2017), during the tough economic times, when the workers get laid off owing to an augmentation in the unemployment rates emanating from a slowdown in the economy and even during structural unemployment (unemployment due to industrial reorganization and technological change) or frictional unemployment (when people are in the process of switching from one job to another), this safety net will endow the workers with a minimum level of subsistence to fall back on.

Bardhan (2016) points out that by enabling the workers to work without the fear of losing benefits, such a conceptually appealing proposition will reinforce the bargaining power of workers in the labor market. As a consequence, they will no longer be compelled to accept poorly paid jobs and work under precarious conditions. This will further raise their pay scale and improve the circumstances that they work under by bestowing upon them greater flexibility in labor markets.

The International Solidarity Work's Report (2014) published by a Non-Governmental Organization from Finland emphasizes in a plethora of ways in which basic income has improved upon the status quo by invoking the startling consequences witnessed during various pilot projects conducted across the globe. In this Report, Johanna Perkio (2014), a research scholar at the University of Tampere, Finland highlights that how an income supplement turned out to be a harbinger of relief especially for the farming community who are forced to reel under the seasonality and uncertainty of agricultural production. She draws attention to the aspect that how basic income relieved off the dependence of daily wage laborers on low wages as a regular income grant equipped them with the option of relative switch to self-employment and own- account farming in rural areas. Apart from this, there was witnessed a significant reduction in indebtedness as a supplementary income allowed the beneficiaries to potentially unlock the credit constraints, breaking the vicious circle of debt trap and bringing them out of the perpetual cycle of drudgery.

The Namibian pilot project initiated by the Basic Income Grant Coalition (2008) showcased how a substantial improvement was reflected on the impoverished cash beneficiaries through betterment in their standard of living (particularly housing and sanitation) and a switch to more hygienic sources of nourishment owing to a rise in the purchasing power. Coupled with this, there was witnessed an increase in the expenditure on medical treatment and a regular intake of medicines that ultimately led to lower incidence of illness among the beneficiaries. This consequently prepared a fertile ground for a physically and mentally strong workforce.

Pilot projects conducted in India by the Self- Employed Women's Association (SEWA) and financed by United Nations Development Programme (UNDP) and United Nations International Children's Education Fund (UNICEF) have put forth in their Legacy Study Report (2017) that basic income also resulted in an uptrend in the empowerment of women beneficiaries by witnessing but a greater say of female members in their families and an enhancement in their levels of nutrition as well. Moreover, it further highlights that in this manner basic income can also be a way of acknowledging the non-wage related contributions to the society such as the homemaking contributions of women that largely remain unacknowledged economically. Overall, basic income served as a catalyst in the process of women empowerment.

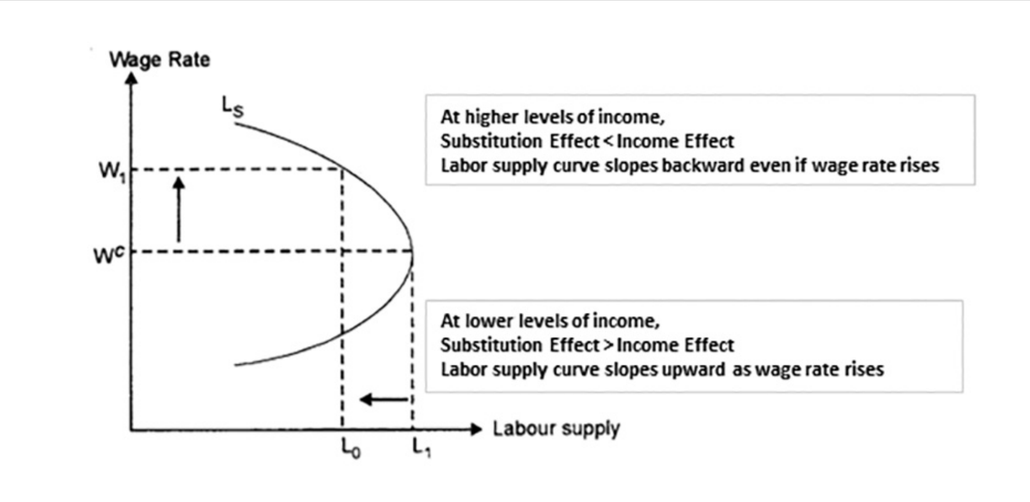
Apart from this, Joshi (2016) points out that the current system of delivering benefits is fractured multifariously as the existing welfare schemes and subsidies are dysfunctional and inflicted with a multitude of plaguing issues such as misallocation error, exclusion error, the out of system leakages, pervasive corruption, market distortion, etc. For instance- as per the Economic Survey of 2016-17, a survey was conducted on the misallocation of resources for the six largest Central Sector and Centrally Sponsored Sub-Schemes such as Mid-Day Meal, Mahatma Gandhi National Rural Employment Guarantee Scheme, Sarva Shiksha Abhiyan, etc across districts. And it was observed that there is a sharp mismatch in the levels of poverty and welfare spending per poor. Moreover, the State capacity was observed to be the weakest in the districts where the needs are the greatest. This suggests that a more efficient instrument of poverty alleviation would be to provide them resources directly through a Guaranteed Basic Income.

BUSTING THE BUBBLE OF MYTHS AGAINST UNIVERSAL BASIC INCOME

This egalitarian mechanism is unleashed with firm adherents who substantiate the need for appropriate social engineering, but they get constrained by a plethora of misconceptions that make the tide to shift decisively in the opposite direction. Therefore, it assumes paramount importance to burst the bubble of ambiguity surrounding this policy proposal.

The opponents of this conception put forth that a basic income will lead to a reduction in the incentive to work owing to the moral hazard associated with labor supply. However, the levels at which basic income is likely to be pegged at are going to be minimal guarantees such that they are unlikely to crowd out the incentives to work. Research findings substantiate the prevalence of positively upward sloping labor supply curve at lower levels of income and it is only at abundantly higher levels of income that the workers prefer leisure over work resulting in a backward bending labor supply curve.

Graph 1: Backward Bending Labor Supply Curve



(Image source: economicsdiscussion.net)

It was clearly substantiated by Varian (2010) and Mankiw (2012) that workers are faced with a trade-off between labor and leisure. Considering wages to be the opportunity cost of leisure, according to the substitution effect when wages rise it becomes more expensive for the workers to enjoy leisure. So they rather prefer to substitute it with greater amount of labor. While income effect induces workers to have more of both labor and leisure. Evaluating the overall impact of both of these effects on labor supply, reveals that at lower levels of income, substitution effect outweighs income effect that on the whole induces the workers to work harder in response to higher wages. Consequently making the labor supply curve to slope upwards. On the contrary, at higher level of income, it has been observed that income effect outweighs substitution effect that on the whole induces the workers to reduce the amount of labor as they value leisure more now. This tends to result in a backward bending labor supply curve.

Moreover, the basic income is not meant to replace employment rather it can incentivize it, as was manifested in the study conducted in Madhya Pradesh by Self Employed Women's Association (SEWA) United Nations International Children's Education Fund (UNICEF). It was witnessed that getting supplemented by a cash grant spurred the people to shift from daily wage labor and to increasingly invest into own-cultivation. The findings of such pilot experiments conducted in one of the poorest districts of the country further reinforce the theoretical framework of this research analysis.

As argued by the skeptics that chalking out such a policy that will require allocation of humongous amount of funds at the expense of trimming down the existing schemes and subsidies will turn out into a political suicide. However, if the transition to this new regime is guided by the light of gradualism, the implementation process can be smoothened. Instead of bringing out this paradigm shift in one fell swoop, if this scheme is rolled out in a phased manner (by doing away with the most inefficient programmes first with a focus on the prioritized sections of the country), the transformation to this new policy regime can be embraced in a deliberate manner by allowing reforms to occur incrementally. Moreover, the government can start off by offering it as a choice to the beneficiaries who will be bestowed with greater agency, i.e., the empowering choice of choosing between the delivery of entitlements and benefits in the form of a guaranteed basic income or through the existing welfare programs. This will endow people with a greater power to negotiate with the administrators who will indeed be incentivized to improve their performance. For instance- in case of ration shops, the dealer will be aware of the fact that if he diverts the food grains for his own purposes, he will be threatened to face the exit of beneficiaries who will switch to a basic income.

The skeptics argue that the beneficiaries might end up spending the income transferred on conspicuous spending or spending on temptation goods owing to the agency attached with this conception. However, empirical evidence clearly demonstrates that such presumptions do not hold much water in reality. On the contrary, the pilot project in Bhil tribal village in Madhya Pradesh showcased that how consumption of alcohol can diminish when people get endowed with greater monetary supplement. The major finding of the study was that people started investing more into own cultivation while shifting from wage labor. This dynamic clearly signifies how agency can make people more productive when supplemented by basic income.

While some propose that a guaranteed basic income might not take into account the effect of inflation in the economy and a decline in their purchasing power. Although this aspect can be taken care through periodic indexation of cash grants according to the rate of inflation in the economy.

RESTRUCTURING THE HALLMARKS OF UNIVERSAL BASIC INCOME

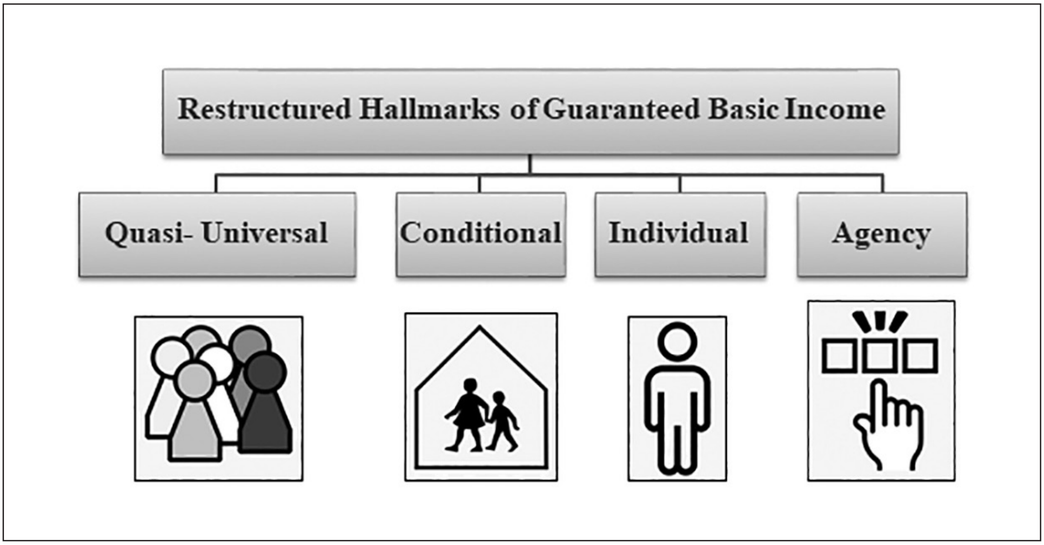
It is pertinent to acknowledge here that this paper unprecedentedly attempts to restructure the hallmarks of Universal Basic Income that essentially makes this paper different from the existing research studies conducted on this paradigm shift. This pioneering research of venturing into the realm of tweaking the deemed essential pillars of Universal Basic Income endeavors to make this conceptually appealing proposition viable for being implemented in a country like India where a humongous proportion of the population is still engulfed in the sheer magnitude of deprivation.

First of all, a basic income that is Universal is neither required nor is the fiscal space available in the Indian economy to bear the brunt of such a mammoth fiscal responsibility given the budgetary constraints. Rather Quasi- Universality can pave the way for a guaranteed basic income that can be financed by narrowing down the quantum of expenditure to be spent only on the beneficiaries who are in dire need of an income supplement. Initially the focus should be on targeting the poverty stricken- vulnerable sections and the people who are at the margins of social stratification (such as children and adults of lower income groups, widows, the old and infirm, etc.). Gradually the beneficiary coverage can be expanded in the subsequent phases. This will require targeting of beneficiaries based on their income level, ownership of key assets, bank account balance, etc. The Socio-Economic Census and existing data of the ongoing schemes can be a guiding light in the identification and targeting of the impoverished and vulnerable.

Secondly this whole mechanism of welfare transfer will work only when it is premised on some conditions. The Conditionality should be such that it incentivizes the beneficiaries rather than merely making it an un-conditional transfer. For instance- lessons can be learnt from Brazil's guaranteed income experiment named Bolsa Familia. In case of child beneficiaries, only those children were entitled to be the eligible recipients' of an income transfer who were enrolled in schools, maintained a minimum floor of attendance and were properly vaccinated. The benefits of this aspect were two-fold. Not only did this serve the purpose of advancing the literacy rates by lowering student absenteeism but also increased the vaccination rates thereby eradicating contagious health issues that are prone to children.

Further, it is imperative for any basic income scheme to take into account Individuality of citizens and not households as the unit of beneficiary. This liberates them from the paternalistic relationship with the state and enhances the scope for greater individual intervention. For instance- this will reduce the dependence of homemaker women and other family members on the only breadwinning male member of the household who conventionally exercises a greater control over the expenditures. This will endow individuals with greater self- reliance and an income floor serving as a safety net against health, income and other shocks. By respecting recipients' choices through the Agency that the cash transfer engenders rather than just dictating specific grants that are bounded, beneficiaries will be facilitated to make tailor-made expenditures as per their own requirements.

Organizational Chart 1 : Restructured Hallmarks of Guaranteed Basic Income



(Source: Self- Created)

After the reconfiguration, we arrive at an income supplement that no longer remains a Universal Basic Income, rather a Quasi- Universal Guaranteed Basic Income that is both Conditional and Targeted. Therefore, it is apparent to use the term Guaranteed Basic Income instead of Universal Basic Income here with respect to the objectives of this paper.

PRE- REQUISITES

Firstly, in order to facilitate reaping of the intended benefits of this policy proposal by the beneficiaries, a crucial pre- condition remains that of effective financial inclusion. A well-functioning financial infrastructure with deep penetration and accessibility across the country can serve the purpose. For this a Direct Benefit Transfer of this income supplement routed through linking of Jan Dhan accounts, Aadhar card and Mobile number (collectively called the JAM Trinity) and bank accounts (other than Jan Dhan Accounts) seeded with Aadhar Card/ Permanent Account Number (PAN) Cards will turn out to be an administratively efficient mode of delivery. Facilitating the smooth transfer of entitlements, this will ensure that the cash supplement goes directly into the account of a beneficiary thereby surpassing the out of system leakages and misallocation of resources that the existing welfare schemes are riddled with. In this respect of efficiently delivering benefits, fertile ground has already been created with respect to Jan Dhan, Aadhar and Mobile preparedness that covers around 21% of the population (comprising majorly of the impoverished, dependent and the vulnerable sections that had no access to institutionalized banking prior to the Jan Dhan Scheme.) as per the estimates of the Economic Survey of 2016-17. In order to ensure last mile connectivity, commercial banks, regional rural banks, cooperative banks, post offices, Automatic Teller Machines (ATMs) and especially Business Correspondents can play an instrumental role in fulfilling the desired objectives.

There can even be devised a welfare mechanism similar to that of Negative Income Taxes as propounded by Milton Friedman in his book Capitalism and Freedom (1962) wherein people who earn below certain prescribed amount are entitled to receive an income supplement from the government instead of paying taxes to the government. However, the pre-requisite here remains that of filing of income tax returns through their Permanent Account Number (PAN) Cards by the eligible beneficiaries. Tracing this path for the channelization of the funds, this will narrow down the ambit of targeted beneficiaries as only the impoverished ones will remain eligible to apply and will dis-incentivize the rich beneficiaries from applying as they will fail to fall under the category of eligible beneficiaries.

ESTIMATING THE FISCAL COSTS INVOLVED

Taking the 2011-12 National Sample Survey's estimates of India's poverty distribution into account, the Economic Survey 2016-17 first attempts to reduce poverty rate from 22% to 0.45%. It then computes the consumption level for the person who is at that threshold. Further it calculates the amount need to push him above the poverty line in 2011-12 that was Rupees 893 per month. This sums up to Rupees 5400 per person per year. Subsequently, scaling this number for inflation between 2011-12 and 2016-17 (with the underlying assumption that the population consumption distribution remains similar) and targeting a 75% quasi- universality rate, yields a basic income of Rupees 7620 per year for 2016-17. Consequently, this quasi- universal targeting rate amounts to 4.9% of the Gross Domestic Product (GDP). However, this method of determining income supplement is subject to periodic indexation with inflation in the economy.

EXAMINING THE AVAILABILITY OF FISCAL SPACE

The way to create fiscal space for this egalitarian policy that redistributes the resources for the welfare of the masses is by getting rid of the subsidies that turn out to be inefficient on ground reality and the poorly targeted expenditure on social services that ends up reaching into the pockets of bogus beneficiaries due to exclusion error. (These are exclusive of the expenditure made on the social sectors of health, education, nutrition and other development expenditure). For instance, Sharma (2009) shed light on the fact that a major fraction of fertilizer subsidy goes to the rich end of the farming community thereby failing to serve the purpose of reducing inequality. Similarly replacing a multitude of implicit middle class subsidies such as the subsidies provided on Liquefied Petroleum Gas (LPG), Railways, interest rates and air travels and tax exemptions given to corporates can add-on to create the sought after fiscal space accounting for up to 1.05% of the GDP. It is pertinent to note here that phasing out of these inefficient subsidies will have a miniscule impact on the purchasing power of upper middle class citizenry but will augur well for the common good.

Table 1: Implicit Middle- Class Subsidies as Percentage to GDP

Implicit Middle Class Subsidies	Total (% to GDP)
LPG	0.21
Railways	0.08
Fertilizer (Urea)	0.04
Interest subsidy (Mudra)	0.11
Gold	0.08
Personal income-tax exemptions	0.44
Others	0.11
TOTAL	**1.05%**

**The above data has been sourced from Economic Survey 2016-17.*

As per the estimates, replacement of such middle class subsidies will enable a guaranteed basic income of Rupees 3240 per capita per year to be provided to all female beneficiaries. Similarly taking away a multitude of inefficient social sector expenditures currently in place by the government can generate the requisite fiscal space up to 5% of the GDP.

INCOME SUPPLEMENT SCHEMES FOR FARMERS

Being a pioneering step in the right direction, the Government of India has embarked on an assured income supplement programme named Pradhan Mantri Samman Nidhi Scheme based on the principles of basic income at the national level. The programme ensures a guaranteed income supplement of Rs. 6000/ per year to small and marginal farmers having less than two hectares of cultivable land. The benefits are directly transferred into the bank accounts of the beneficiaries in three equal installments of Rs. 2000/ each every four months.

Apart from this, other state level basic income schemes are Rythu Bandhu Scheme in Telangana (ensuring around Rs. 4000 per acre per season) and Krushak Assiatance for Livelihood and Income Augmentation in Odisha (guaranteeing around Rs. 10,000 per farming family per season). These unprecedented schemes are an instrumental initiative to insure small and marginal farmers against the seasonality and uncertainty in agricultural production.

CONCLUSION

Heading towards the conclusion, it is imperative to consider that the yardstick for assessment should not be whether a Guaranteed Basic Income can be foolproof or not, rather the focus should be on whether it can improve substantially upon the status quo or not when compared to the existing inefficient schemes.

Representing a promising alternative, the guaranteed basic income is not a substitute for state capacity, rather it is a way of enhancing the efficiency of welfare transfers by the state. This policy proposal when complemented with other efficient investments in the social infrastructure (such as that on the priority sectors of health and education) could foster an unprecedented level of development by reducing the leakages from the public expenditure system and serving as an antidote to poverty. While the reconfiguration of the policy from universal to quasi-universal coupled with conditionality and targeted based approach can make it fiscally affordable, the idea can further evolve in terms of the channelization of the cash grants to accomplish the desired welfare consequences for the common good. Being guided by gradualism in its implementation, the proposal has to be embraced in a deliberate manner to allow the reforms to occur incrementally. Therefore, through appropriate social engineering, this comprehensive social security system can safe-guard the right of an individual to live a dignified life by helping the beneficiaries survive amidst contingencies, propel the growth by eradicating poverty and reinforce the socio-economic condition of beneficiaries.

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Analysing the Basic Features of System Transformation and Development Strategies in China and Vietnam

ABSTRACT

Since the beginning of the 20th century, both China and Vietnam have emerged as major economies in the international economic sphere. The economically most successful Asian countries have embarked on a path of development based on agricultural-led industrialisation. In the coming few years, many economies of Asia are expected to advance on to the next stage of development strategy and transformation. This paper aims to evaluate major debates about the various policies and strategies that were followed in the two countries and the economic benefits and costs of decentralization, experimentation, gradualism and how effective was state-led development in achieving economic goals in the two economies.

INTRODUCTION

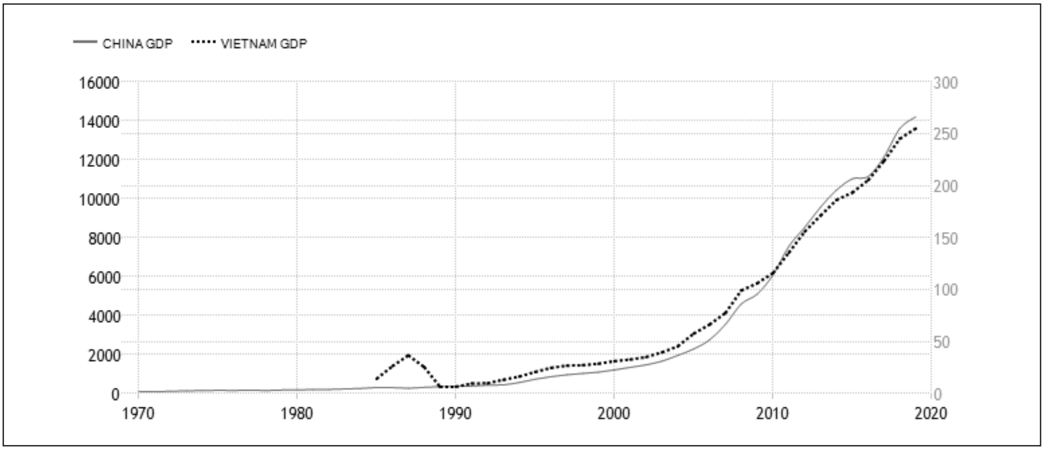
Following the rapid economic transformation of major Asian economies over the past few decades, there has been enhanced interest in its future growth and development. Within the next few years, Asia is anticipated to become the world's largest regional economy, overtaking Europe and North America. The key factors attributed for this sustained growth in Asia are: entrepreneurship, technology, investment, finance, and institutions. During the latter half of the 20th century, the emergence of the transitional economies in parts of Eastern Europe and Asia Pacific led to a new dimension in the development debate around the world. Since the 1980s, People's Republic of China and Vietnam have witnessed massive growth and expansion of their respective economies leading to high levels of international trade & commerce and high flows of foreign direct investment. It is difficult to ignore the remarkable achievements of these two states in global and regional terms. In both cases, at the initial start of their reform processes, they were counted among the poorest countries in the world. The reform and development experience of Vietnam perhaps is even more important than China because of its smaller economy, limited resource base including limited economic resource base, a much greater dependence on trade, Vietnam war during the 1970s and American trade embargo till 1994. All the other transitional economies predominantly in Eastern Europe ran into several problems, such as falling output, high rates of inflations, increased levels of poverty etc. In stark contrast to other transitional development economies, China and Vietnam have seen sustained growth and economic progress throughout the last century.

While there are significant differences between the two economies, there are some very important parallels between the two in terms of progress, consequences and evenness of the reforms adopted within the two economies. The performance of both China and Vietnam in terms of economic parameters over the past twenty years poses serious challenges to the prevailing status quo of economic development and growth in the world. In this period, both China and Vietnam saw unprecedented decline in the level of poverty, approximately 500 million people were lifted out of poverty in China according to official government data since reforms were initiated in 1978. Both China and Vietnam remained rigidly authoritarian, centralized planning systems and were governed by single-party rules in the case of China, it was the Communist Party of China founded in the year 1921 that maintained extensive control over economic governance. At the same time, even though both China and Vietnam have transitioned into market-based economies from highly regulated economies, remnants of surviving institutionalist mechanism are still evident. In both the economies, economic growth and development has been closely associated with slow economic reform and opening up the countries to international trade and capital flows while the state continued to have a considerable control over the major proportion of national production. In recent years, however a critique of the growth process in China and Vietnam has emerged: although China's and Vietnam's high economic growth paths diverge significantly from the traditional economic trajectories, it is widely believed that will ultimately lead to the development of distorted and unmanageable economies and which is likely to hamper future growth and progress.

It is the main aim of this paper to explore the unique and typical nature of economic development and system transformation in China and Vietnam and the wider lessons which can be drawn upon.

GROWTH AND DEVELOPMENT IN RECENT YEARS IN CHINA AND VIETNAM

In the recent years, China and Vietnam's growth figures have been quite spectacular. Through the last few years, China's real GDP has increased at an annual rate of more than 10%, Vietnam on the other hand averaged around 7.3%, among the fastest growing economies in the world in terms of real GDP. One of the poorest countries in the world in the 1970s, Vietnam is fast approaching lower-middle-income status-which seemed unattainable only two decades back. Almost all citizens of the two economies have benefitted in some degree from the rapid economic growth. Between 1982 and 2012, the rate of poverty in these two countries has almost halved with massive poverty alleviation programmes underway, driven by high income growth and overall economic prosperity. Significant welfare measures were adopted including more equitable access to electricity, drinking water, technology and communication, schooling, and health insurance. The following conditions have been attributed for the massive success enjoyed by both China and Vietnam. Due to their relative backwardness, China and Vietnam may have benefitted from late development and advanced technology from the first world countries, hence completely bypassing years of development in management, finance, and telecommunications that have propelled growth in these countries.



(Source: The World Bank, 2019)

(a) China

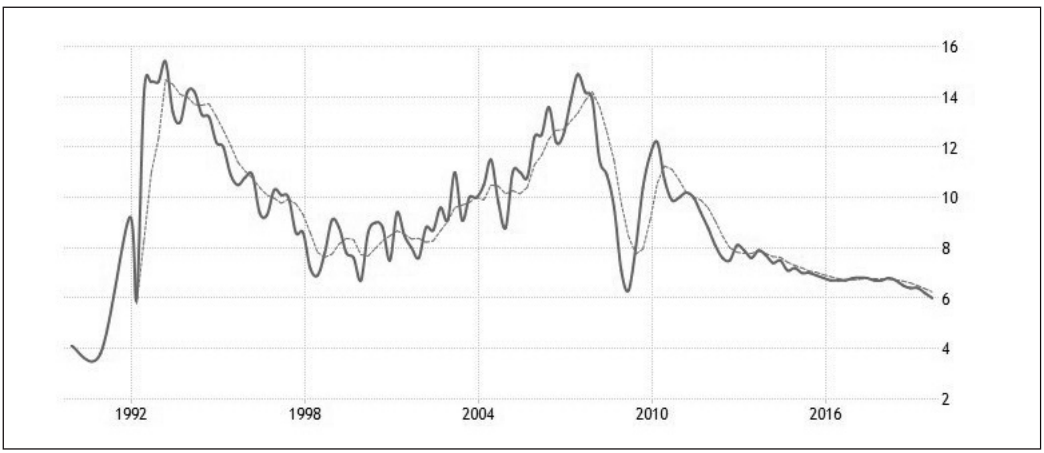
Beginning in 1979, China adopted extensive reforms and measures with the main goal of making its ideology and manifesto work by massively increasing the role of mechanisms directed by market functioning in the system and limiting central planning, governance and government direct control directed at developing a socialist oriented market economy. The initial years after the reform measures were adopted and were termed the "period of readjustment," during which major disparities within the economy were rectified and a strong base was laid for a well-planned drive for modernisation and industrialisation. The major objectives of the readjustment process were to expand exports, get rid of insufficiencies in transportation, communications, coal, iron, steel, other natural resources, building materials, and electric power and address the imbalance between light and heavy industry by promoting the growth rate of light industry and reducing investment in the heavy industry. (BHOMORA, 2019)[1]

The agricultural sector in China was an important backbone for its rapid economic growth and development and was considered essential for later stage industrialisation and modernisation. There was large scale encouragement by the state to establish free farmers' markets in urban and rural areas and by giving permits to families to operate as "specialized households," concentrating their specific skills and resources to produce one particular market commodity or service on a profit-making set up thus gaining specialisation. The major

1 Bhomora, Victor. "Facing reality transformed China." theindependent.co.zw. Zimbabwe Independent, 18 Jan. 2019.

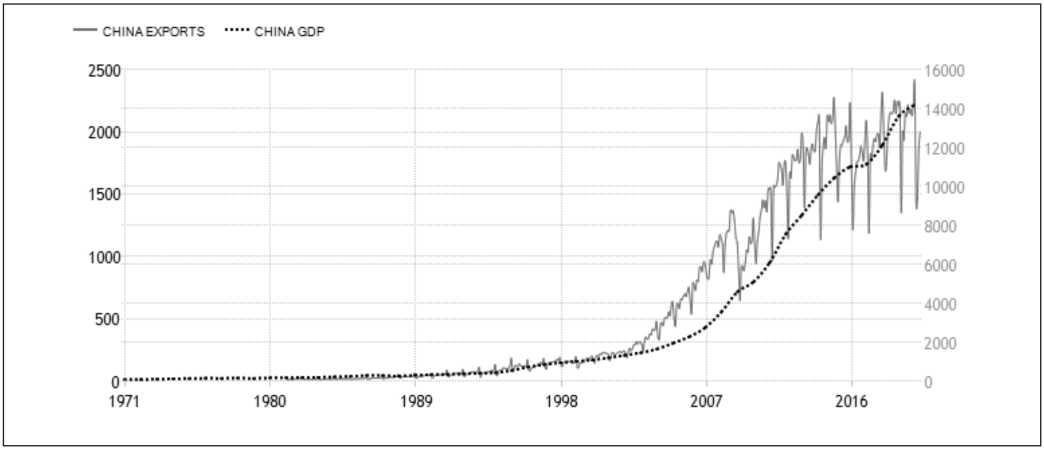
policy initiatives adopted in the industrial sector increased the autonomy of the private enterprises, reduced emphasis on allocated and planned quotas, allowed enterprises to produce goods outside the plan of action for sale on the market, and permitted enterprises to experiment with the use of bonuses and incentives to reward higher productivity (MALESKY, 2014). The communist state also overlooked the establishment of several industrial and service enterprises which were collectively owned and operated as a means of reducing massive unemployment among China's extremely high young working population in the economy and at the same time it aimed to increase supplies of light industrial products to other sectors in the economy. A wide variety of cooperation, trading, and credit arrangements with foreign firms were legalized so that China could enter mainstream international trade. There have been marked improvements in the total factor productivity (TFP) in China since reforms were adopted in 1979, contributing to about 40% growth in the GDP (DIXON, 2013). According to the Harvard Business Review, China's massive GDP growth in the last several decades is mainly due to the shift of factors, technology and resources from the public sector to the private sector and reduced state control and interference.

China today is the largest exporter of manufactured goods in the world and is now a bigger economy than USA in PPP terms, accounting for more than 19% of the output in the world economy, over that same period, China's per capita income became nearly five times that of the average sub-Saharan Africa; an extraordinary feat given that the two regions were at similar levels in the mid-1990s.



Annual growth rate of GDP in China

(Source: National Bureau of Statistics of China)



(Source: The World Bank, 2019)

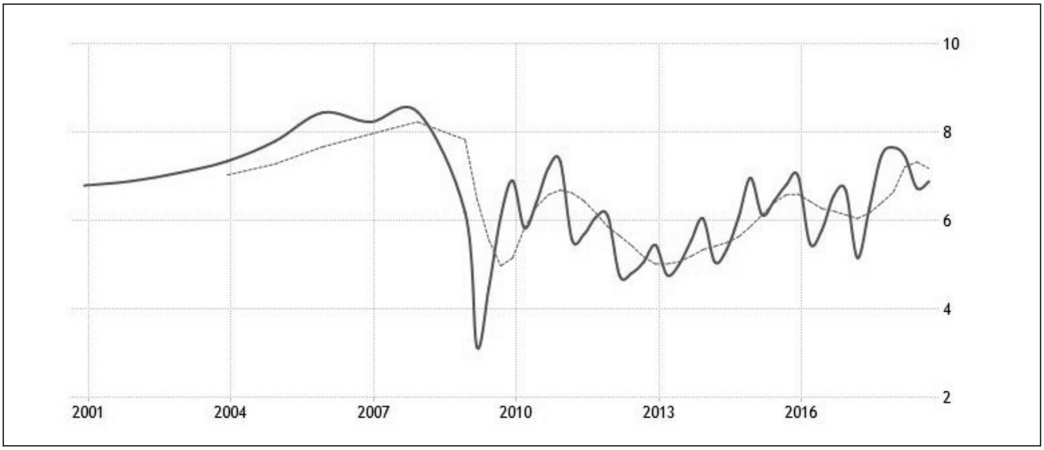
(b) Vietnam

In 1986, Vietnam launched economic reforms aimed at a socialist oriented market economy much on the same lines as that of China. The reforms were called Doi Moi and were aimed at political and economic renewal and reorganisation of the economy. It was an attempt to combine central planning with free-market incentives. The reforms abolished agricultural collectives, removed price controls imposed by the state on agricultural goods, and allowed farmers to sell their goods without any intermediaries in the market economy. It stimulated the setting up of private businesses and encouraged foreign investment, including foreign-owned enterprises and industries, streamlined the functioning of the bureaucracy, shut down inefficient and loss incurring government monopolies and opened up farming and small service enterprises to the small sector, individuals and families (MALESKY, 2014). In other words, Doi Moi was an attempt made by the Vietnamese government to create the space for a market economy in Vietnam by following a path openness in economic relations therefore setting up a strong foundation for achieving modernisation and rapid development. It passed and adopted the first Law on Foreign Investment in the country, thus allowing foreign companies and corporations to enter the Vietnamese market and begin their operations and investment.

Today, Vietnam is easily identifiable among the fastest growing economies in the world. Its economic growth of around 6-7%, matches that of China, and its exports are equivalent in worth to the total value of its GDP. According to analysts from the World Bank Vietnam's economic rise can be attributed to three main factors: "First, it has embraced trade liberalization with gusto.

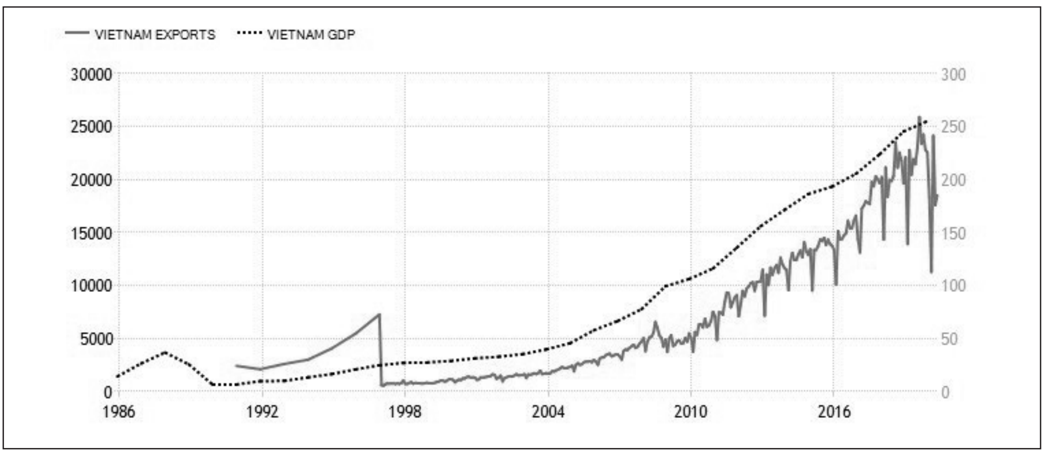
Second, it has complemented external liberalization with domestic reforms through deregulation and lowering the cost of doing business. Finally, Vietnam has invested heavily in human and physical capital, predominantly through public investments." Equipped with all the necessary infrastructure, a strong economic foundation and market-friendly policies in place, and much support from the government Vietnam became increasing a major spot for foreign direct investment and manufacturing in Southeast Asia.

More importantly, the growth process has been fairly inclusive, it has done particularly well at making its growth processes more inclusive and sustainable.

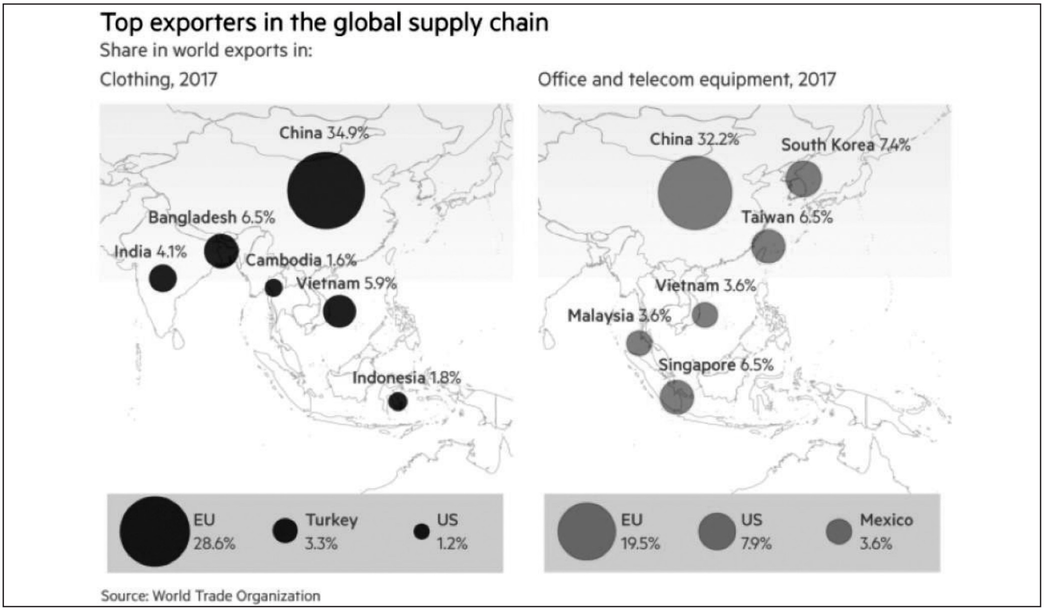


Annual growth rate of GDP in Vietnam

(Source: General Statictics Office of Vietnam)



(Source: The World Bank, 2019)



(Source: World Trade Organisation, 2017)

STRUCTURAL TRANSFORMATION IN CHINA AND VIETNAM

The most important features of the new models exemplified by China and followed by Vietnam are hard to pin down, however the model can be broken down into five components according to Malesky and Jonathan[2] : (a) export-led growth and massive reforms in the primary sector (b) gradualist approach to reform policies and measures; (c) willingness to experiment with policy choices; (d) state capitalism or a predetermined role of state owned enterprises in production, where they are allowed favours by the state for access to land and capital and dominate strategic industries, and (e) maintenance of an authoritarian regime during dramatic economic changes. The term "Beijing Consensus" was coined to represent the unique features of this new model (MALESKY, 2014).

- **Reforms in agriculture:** The most prominent feature of modern economic development has been a consistent decline in the contributions of agricultural sector in both the output and the gross domestic product (GDP) with a constant increase in the share of the manufacturing and services sectors. China during the initial years undertook large scale import substitution industrialisation based on central planning and

2 MALESKY, EDMUND, AND LONDON, JONATHAN (2014): "The Political Economy of Development in China and Vietnam", Annual Review of Political Science 2014, 17:395–419.

control. A considerably modern policy initiative as part of the initial reform period was adopted in the late 1970s, the "household responsibility system" it was an important determinant in ensuring rapid growth in the beginning in the agricultural sector. Another important policy reform that was adopted was the township and village enterprise (TVEs), the main objective being increasing industrialization in the rural areas. The state frequently regulated the prices prevailing in the market. In 1985, the dual-track pricing was introduced by the government, according to this pricing system the government priced all the agricultural output which was within the planning targets were priced whereas any output above the targets was left to the market and its price was determined by the prevailing market forces. In the 1990s, China's agriculture moved from essentially a food crops centric sector to one directed at high-valued cash crops, horticulture, livestock and aquaculture products. By the 2000s, agriculture became heavily orientated towards export and specialized towards high labour intensity products.

Compared with China, a unified Vietnam was characterised by a weaker state authority and a much larger and complex informal sector effective falling outside the scope of the planning system. In the early 1980s, state led economic reforms began in Vietnam starting initially with de-collectivisation of farming and intensified under Doi Moi (BRIONES, 2013) as follows:

- Increased openness to private sector investment and commercialisation of state enterprises.
- Deregulation of prices and consumer subsidies and liberalization of the foreign exchange market.
- Recognition of the rights of farmers, culminating in formal recognition of transferability of land rights and titles.

Government also actively invested in significant areas of irrigation and social infrastructure including transport as well as provided important financial and strategic support for specific kinds of high value crops, e.g. Coffee beans etc. These market reforms led to gradual but high sustained growth in agriculture in the late 1980s and 1990s. By 1995, the agricultural sector accounted for 46% of the total exports (BRIONES, 2013). Agricultural exports were further reshaped, with significant increase in the shares of coffee, tea, cashews, pepper, cinnamon, rubber, fruits and vegetables, and aquaculture. Vietnam soon became the world's second largest rice exporter.

The role of the agricultural sector in modernisation and development is often considered negligent compared to rapid industrialisation and growing services sector. However, on the contrary as has been pointed out in recent years by extensive research, agriculture played a very important role in the initial phases to help develop a strong foundational base for high growth and prosperity in the most successful Asian economies. In the major countries that were studied as part of various researches, the correlation between strong rural development and poverty alleviation indicated the noticeable correlation between rapid growth and the role of the rural economy in structural transformation and growth in these countries.

Johnston and Mellor (1961)[3] provide the classic and widely acceptable explanation of the role of agriculture in development. According to them, agriculture is a source of: (i) food, (ii) foreign exchange, (iii) labour, (iv) savings for capital formation and investment, and (v) purchasing power to generate demand for manufactures. (JOHNSTON, 1961) Progress and development in agriculture in an economy ultimately supports subsequent growth in industries. Gradually, as an economy develops, the relative contribution of agriculture to the GDP and output declines. However, empirical data shows that high growth driven by the primary sector is limited only to a certain specific set of developing countries characterised by small economies and relatively high openness to trade and free markets. However, the agricultural sector is still the largest employer in many Asian countries including India and particularly China and Vietnam and hence any debate on the future development of Asia's structural transformation and reform cannot undermine the importance of the primary sector and its contributions. The positive impact of the past initiatives and reforms of structural transformation adopted in these economies will most certainly continue for the next few years in these countries, and as the per capita income will continue to rise in both China and Vietnam, the contribution and share of agriculture in the total value of the final GDP will ultimately fall even lower.

- **Gradualism:** China and Vietnam did not go for a "big bang" strategy of economic reforms. The economic reforms in Vietnam were implemented in order to solve the prevailing economic problems in the country, there was immense pressure from the lower segments of the economic ladder for change, and increasing concerns about the political legitimacy of the state's political party. The problems engulfing Vietnam must be viewed in

3 Johnston, B., and J. Mellor. 1961. The Role of Agriculture in Economic Development. American Economic Review 51(4): 566–593.

> the backdrop of an extremely improvised country, with major problems related to national integration specially after the end of the Vietnam War and the massive burden of restructuring with limited ability and technological advancement. In China, although the size of the economy was much greater in size and with a much stronger foundational and economic base, however by the 1970s it was soon realised that a structural change and transformation was much needed. In both, China and Vietnam, the implementation of economic reforms and opening up to the international system were the result of highly pragmatic decisions taken within effective central planning and effective functioning systems. This approach resulted in a cautious and gradual economic transformation and change. It is argued that flexible, intermediate institutions allowed China and Vietnam to respond more rapidly to unanticipated problems while simultaneously initiating new coalitions for further reform.

Gradualism has often been used and quoted to define very contrasting and often very different developmental paths by various scholars, first, it has been characterized as a reform process significant in the initial increment in the economic parameters of various countries but lacked long-term vision or goal. Every reform that was adopted was aimed at to resolving a particular set of economic problems (or crises) arising due to short term fluctuations in the short run. Second, it has been used as a reference to the Chinese approach to "grow out of the plan."

Critics of the gradualist approach to reformation in both Vietnam and China have been highly critical of it due to its limited understanding of the market structures and procedures, further reinforced by existing inefficiencies in the system, high levels of corruption, massive internal opposition, lack of efficient economic resources including human resources and a fruitless system based on 'trial and error'. However, it is extremely difficult to ascertain whether the reform programmes were slowed and adversely affected as a result of these factors, but it can be successfully concluded that uniform and dominant state policies resulted in continued and sustained reform periods. In case there was major opposition to any of the initiatives or any of the policy measure proved ineffective and counterproductive, this approach made it possible to change certain aspects of the measure and modify without disturbing the basic idea of the whole reform programme. At the same time, advocates of this approach have suggested "that incremental reform initiatives create conditions for effective transition, whereas a "big bang" destroys the necessary institutions needed for transition and growth" (MALESKY, 2014).

Recent studies have shown that in both China and Vietnam, the "gradualist" approach to reform led to substantial, however, uneven at times, development of crucial factors of the market economy. However, the initiatives adopted as part of the gradualist approach were more on the lines of a "market-socialism" and "socialist market-oriented economy" than a market- economy, since the most essential means of production remained under the state control. In both the countries official state policy towards international capital and free markets contained various elements of sampling, trial and error, experiment and filtering, in an effort to adopt and become active in the process of economic globalization in the world economy but to with certain rules and regulations and to the extent and speed deemed fit by state policies and national development objectives rather than international market forces and pressure from other countries. Attempts were made to limit the impact of economic globalization and the role of the market by the state and was supported by continued involvement of the state sector. In Vietnam, there have been repeated official confirmations by the government that the state will continue to have a leading economic role in the economic policies and objectives in the coming years. Thus, a major portion of the economy remain heavily protected and under the purview of state control in both China and Vietnam. However, going by data, overall, in both these economies the state sector has grown much faster than the domestic private sector. In Vietnam, as a result of these policies between 1990 and 1999, according to official data, the State-Owned Enterprises (SOEs) increased their share of GDP from 29.4% to 43.0% (at constant prices) and contributed to over 50% of export earnings and 39.3% of government revenue (DIXON, 2013). A large part of foreign sector in Vietnam is directly controlled by the state through joint ventures and by the end of 2000 over 65% of foreign investment was in joint ventures and almost all the most important ones were connected to SOEs (DIXON, 2013). However, it is important to lay emphasis on the fact that in Vietnam before the reforms were adopted, the SOEs were not as dominant in the economy as they were in most of Eastern Europe and China.

In China on the other hand, a large diversification in the different forms of ownership has emerged contrary to the traditional public–private division, almost all of the new development activities and production processes identified as private in the rural areas are actually controlled by the local and state governments. Jefferson and Rawski came to the conclusion in their paper that in China the state sector contributed around 70% of industrial output, the private sector around 15% and joint private–public ownership 15% (JEFFERSON, 1999). The specific nature of the development process that has been adopted in both

Vietnam and the China since the start of the reform programmes considerably sets them apart from most countries of Eastern Europe and has proved to flout the neoliberal view that that replacement of state planning and privatization of major industries and production processes are necessary conditions for achieving rapid economic growth. Henceforth, the main conclusion that can be drawn upon after looking at the growth patterns in both Vietnam and China is that a major part of the rapid economic transition that has taken place since the start of the reform programme is to a very large extent closely associated with and in tandem with the state sector and its policies.

- **Experimentation:** The third component as part of the Beijing Consensus is the adoption of experimentation by the state in both the economies. The most studied and cited example of such experimentation in China was the dual-track pricing, as well as local government ownership, special economic zones that were created to facilitate rapid industrialisation, and allowing foreign investment under the watchful eye and control of the state. In the case of Vietnam as well, experimentation has also been an important part of the initiatives adopted by the state, such as individual household rice contracting, creating investment zones for foreign enterprises and corporations, allowing land titles and ownerships to be mortgaged and exchanged, and including administrative innovations such as one-stop shop business registration. (MALESKY, 2014).

  Experimentation with modes of government have been equally critical in both the economies. Governance reforms included the following (MALESKY, 2014):

(a) innovations were encouraged that improved the accountability of decision makers to citizens through the process semi competitive elections at the village and town levels in both China and Vietnam.

(b) innovations were encouraged to increase citizen participation, allowing citizens to provide feedback on give a draft legislation before the final adoption of the new administrative law and opportunities to complain about aggressive local officials.

(c) transparency innovations were put into place, for example the Chinese Open Governance Initiative was the Chinese government's first attempt aimed towards a "freedom of information" act, allowing citizens, businesses, and civil society to request documents from government agencies and national administrations.

(d) meritocratic promotions were given priority over existing factional and familial connections through the use of cadre evaluation systems;

(e) increased institutionalization in the economy, with tasks specifically designed for a specific purpose and assigned to specialized agencies with technical expertise.

(f) the shaping of state and local parliaments whose objectives were to provide information and represent constituency views;

(g) pilot recentralization in ten major Vietnamese provinces; and

(h) the partial liberalization under the strict supervisions of the media and Internet to gather useful information on societal grievances and state of the wellbeing of the citizens.

As can be seen, reforms were initiated gradually and cautiously through major experimentations in both China and Vietnam. A need was felt by the state governments to keep the experiments under strict control and supervisions of the state until they were considered successful. However, experimentation within the framework of political reforms were not initiated in either China or Vietnam.

- **State-led development:** Although there was massive increase in private owned enterprises and corporations in the two countries, state was still a very important force in the economic sphere and the decision-making process, state-controlled and state linked companies were a very dominant feature in the economic relations within the economies. The SOEs continued to play important roles in the investment and economic output of the economies. It has been argued by many scholars that SOEs may have made significant contributions to the economic success witnessed by both China and Vietnam and may have also acted to mediate the internationalization of the domestic economy.

It is without doubt that the SOEs played an important role in growth process of China and Vietnam. In Vietnam in 1990, the state sector accounted for about 23% of total industrial employment as per official records and 30% of the total GDP. In fact, the share of SOEs in GDP grew in the initial stages of the reform period to about 40% (MALESKY, 2014). In China, SOEs dominate the major industries such as finance, energy, telecom, and distribution. "Even after three decades, the Chinese state-owned and controlled firms account for close to 40%

of GDP” (MALESKY, 2014). The main objective of the reforms to improve the conditions and competitiveness of the SOEs by adopting various kinds of market mechanisms and encouraging competition from international and domestic competitors, however, giving up state ownership and control was never part of the reform plans.

The SOEs were seen as core pillars of the Beijing Consensus, it was argued that they guaranteed economic growth and output in a weak institutional environment, at the same time brought together and systematically regulated the interests of both central and local governments. Although reforms aimed towards strengthen the state role and economic power was an important feature of the development strategy and the state sector had grown substantially thus contributing massively to both the economies, growing debates about the effectiveness and actual contributions of the SOEs in the rapid growth process and expansion of output have emerged in recent years, with many scholars arguing that the SOEs were more often recipients of the benefits, rather than the main driving force, of rapid economic growth.

ROLE OF STATE IN CHINA AND VIETNAM- HOW EFFECTIVE WAS THE STATE?

Despite the many problems and failures during the period preceding the reform era, the party- state system which existed in Vietnam and China was in many ways very much productive and effective in reform and measures formulation and implementation, characteristics that continued to pave the way during the latter reform phase. The manner in which various reform initiatives in the early stages were implemented clearly reflects the effectiveness of the centrally planned system, controlled and under the strict supervision of the state. Vast varieties of goals including in the sphere of health, education, better livelihood and mortality were achieved, such as improvement in the literacy rates, life expectancy and decline in infant mortality rates. By the 1980s, due to the social and political prioritization given to certain areas over economic importance such the overall growth of GDP per se, the consistent and effective efforts put in by the state system produced living conditions associated with countries in the advanced economies of the world with much higher per capita GDP.

However, the most critical question as posed by many scholars that remains to be answered is: to what extent growth resulted from limited scope for liberalization and how much was it due to the functioning of party-state system. It can be concluded that the share as well as prevalence of the private sector in both the economies would have been greater if it was not for extensive state control and limited arenas for private investment as well as massive discrimination, rampant corruption and inefficient functioning of the party-state system. It is however difficult to debate the argument that the rapid economic growth and expansion of industrial activity that took place in the two economies is largely reflective of the unswerving impact of the various reforms and policy changes as adopted by the state. Therefore, it can be accepted to some extent that the party-state systems did play a significant role in the rapid economic growth and development that both Vietnam and the China have experienced in the last several decades dating back to early phases of reform era. One of the main reasons why party-state system proved to be so effective was due to was the systematic implementation of all the measures and reforms that were undertaken. Another reason was the promotion of the market economy and its smooth functioning, as well as encouragement and consistent support given to the private sector and foreign investment by the central government, and ultimately the efficient passing down of instructions through strong structures and established institutions. There were significant efforts made by the state in order to make the incentives more appealing so as to encourage more economic agents to participate in the economic transformation in the country. China and Vietnam focused heavily on the 'bottom-up' approach aimed at the lowest level of the production process – the productive units. In tandem to all these policies and reforms, major sector specific measures were initiated in in the various sectors which included agriculture, manufacturing industries and state-owned enterprises (SOEs). In the case of the agricultural sector, rapid expansion in the total output was adopted as a major objective of the state policy as well as increase in the total value of exports to the total GDP. Effective commodity price reform and incentives were adopted by the state government to encourage value addition in the agricultural sector. A variety of initiatives were adopted by the party-state system to increase the autonomy, efficiency and productivity of the various SOEs and for speedy modernisation of the industrial sector. In addition to this, enterprises were allowed and encouraged to acquire funding from outside the state sector, employ labour and determine wage levels and conditions according to their own discretion however subject to certain regulations and rules of the government. Thus, the state continued to keep overall control and maintain co-ordination of the various activities undertaken by the SOEs in both the economies.

Along with the above-mentioned reforms, the system transformation and development strategies also involved the adoption of new goals and objectives, as well as better and more powerful incentives for the SOEs and heavy industries in to promote and engage them to participate and contribute in a wide range of economic activity and industrial production. At the same time, these changes were accompanied by increase in the foreign direct investment and the emergence of a variety of domestically owned private enterprises. Therefore, in conclusion, it can be argued that the party-state systems functioning in both China and Vietnam were, especially in the short-run, effective in remarkably transforming isolated and economically deprived economies of China and Vietnam into self-sustaining, influential, international "hot spots" for investment and manufacturing.

CONCLUSION

The model of development in both Vietnam and China seems to be efficient in achieving high rates of growth in the initial adoption of reform measures and their implementation. In both cases, reforms were initiated to move towards a market-oriented economy, away from central planning. However, no major political reforms have taken place as yet, but effort have been made in the direction of adopting reforms in governance and local functioning at the national and local levels in both the countries. This has to a large extent fundamentally altered the interactions between the two states and their citizens, leading to increased accountability and greater economic as well as political freedom in the economies. Nevertheless, there is significant scope for further improvement and changes in the growth processes of the two economies. The state-led growth models have in recent years developed serious contradictions and problems that may undermine their developmental efficiencies and produce significant social and political conflict within the state leading to much disturbances to the economic processes of the economies. In addition, the states are increasingly facing a radically different international economic and political environment.

Major doubts have been raised regarding the gradualist approach and excessive state control over economic planning in both China and Vietnam. However, time and again, both China and Vietnam have proved themselves to be extremely adjusting and adaptable, and have, in economical, made achieved significant progress and rapid growth under extremely difficult conditions.

Both China and Vietnam seem to be at a crucial point in history. By 2030, China and Vietnam are expected to achieve unprecedented levels of economic growth and levels of per capita income. By 2050, Asia will account for more than half of the world's income driven in part by the rapid economic growth and progress of China and South-east Asian countries particularly Vietnam. The rise of these two countries represents a shift in the existing economic power prevailing in the world and challenging the hegemony of the western countries. The future of these two countries will now depend on how effectively they will be able to exploit the opportunities and meet the challenges posed by the world economy.

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High-Performance Work Systems and Spiritual Leadership: Tracing the Synergies from an Organizational Perspective

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ABSTRACT

This article purports to trace the synergies that appear to exist between the theories of spiritual leadership (SL) and High-Performance Work Systems (HPWS) and present a HPWS-spiritual leadership- organizational performance link. After introducing the concepts of spiritual leadership and HPWS, their independent functioning mechanisms have been explained. A functioning mechanism is presented wherein spiritual leadership acts as a catalyst in the HPWS- organizational performance link. By identifying the underlying commonalities between the theories of spiritual leadership and HPWS, an effort has been made to conceptually justify the aforementioned functioning mechanism. Limitations of this paper and scope for further research have been discussed towards the end.

THE CONCEPT OF HIGH-PERFORMANCE WORK SYSTEMS

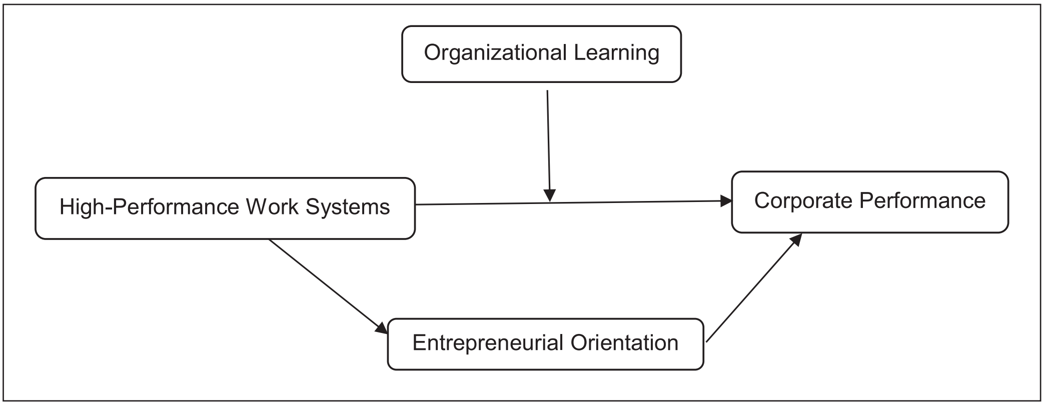
Strategic human resource management is a field that is gaining more and more importance in recent years. This popularity can be partly attributed to the growing research in the field of corporate performance enhancement and partly to the change in the nature of operations- from product-centric to service-oriented. An organization's workforce is now considered to be a channel for gaining and developing competitive advantage. Among the broad concepts of strategic human resources, high performance work systems stand out as reflecting the basic philosophy and practices of strategic human resource management and shape the attitudes, skills and behaviours of staff by discovering and utilizing knowledge, thereby achieving organizational goals(Chen 2009; Collins and Clark 2003)

In spite of being a relatively new concept, HPWS has been subject of considerable discussion. As there is no agreement on the definition of this concept, it can generally be regarded as "an organic combination of a series of coordinating and cooperating human resource management practices in order to enhance individual and organizational performance"(Snell and Bohlander 2010). By breaking the traditional hierarchical management model, HPWS use flat organizational structures to provide staff with wide-ranging training, safe environments, management and competitive compensation, organizational identification and productivity, which lead to sustainable competitive advantages and long-term individual and organizational development (Pak and Kim 2018). The exact human resource practices that create HPWS have been discussed in the later stages of this paper.

Research on HPWS includes both organizational level and individual level studies. Empirical studies show that HPWS can improve individual performance that is measured through parameters like job satisfaction and organizational citizenship behaviour (DJ Cheng 2011)Organizational level impact of HPWS have been assessed by measuring corporate performance and such assessments have yielded positive results(Becker and Huselid 2006).

Though researchers agreed on the impact of HPWS on organizational performance, how and why it was able to deliver such impact remained a mystery. This mystery was solved by an empirical study which proved that with organizational learning as moderator and entrepreneurial orientation as partial mediator, HPWS created a positive impact on corporate performance(Zhu, Liu, and Chen 2018) Organizational learning may be defined as the "dynamic process of creating, acquiring and integrating knowledge to develop resources and capabilities that will enable the organization to achieve better performance"(Shahizan Hassan and Ali Yousif AL-Hakim n.d.). Entrepreneurial orientation, on the other hand, is the reflection of an organization's commitment to entrepreneurial attitudes and its willingness to start new business (Covin and Slevin 1989). Further, entrepreneurial orientation has three dimensions- innovation, pro-activeness and risk taking(Miller and Friesen 1982). HPWS when adopted by organizations that are more dedicated to learning has greater impact because its members are not resistant to change. Furthermore, the impact of HPWS on the corporate performance is by way of increasing entrepreneurial orientation. Under HPWS, employers develop high-trust partnerships with their employees which encourages them to make choices despite the potential risk and this, in turn, increases entrepreneurial orientation which allows the company to explore the unexplored and deliver better performance. The model is shown in fig. 1.

Fig.1: HPWS-Corporate Performance Functioning Mechanism
(Zhu et al. 2018)



THE CONCEPT OF SPIRITUAL LEADERSHIP

With employees becoming an inimitable asset in every organization, more efforts are being made to retain workers and to motivate them. Due to growing competition, however, it has become hard for organizations to not just attract but also retain good employees based on compensation packages alone. Hence, employers are focusing on other instruments that hold considerable appeal to the workforce. Some common instruments include job satisfaction, work environment and organizational values. A prerequisite for the effective implementation of these instruments is efficient leadership. This need has led to the pioneering of several leadership theories and a new addition to this field is the concept of spiritual leadership. But before discussing the theory of spiritual leadership it is important to understand what spirituality means in general and for an organization in particular.

Though, spirituality means different things to different people, in general, it is an individual's (Jiva) search for a deep meaning of life interconnecting it to the Universe (Jagat) and to God (Ishwara). The spiritual journey essentially involves unfolding the mystery that surround Jiva–Jagat–Ishwara (Mahadevan 2013). Quite often spirituality is used synonymously with religion which is unfounded, though, religion may contribute to one's spiritual survival. The distinction between spirituality and religion has been highlighted in Table 1.

Table 1: Difference Between Religion and Spirituality

Religion	Spirituality
A communal practice	An individual experience
Tells what the truth is	Encourages one to discover the truth
Spirituality is necessary for religion	Religion is not necessary for spirituality

In all disciplines, except the workspace, it has been universally accepted that, at some point in life, people have this intrinsic need to find the purpose of their lives and be members of a community where they feel valued for their contribution to performance (Giacalone and Jurkiewicz 2003)However, in the workspace, especially the corporate world, employees are expected to compartmentalize their spiritual and workplace selves, which is unrealistic given the amount of time spent at work (Fairholm 1996). In the recent times, the trends are changing and spirituality is being incorporated in the workplace. The experience of workplace transcendence {employee belief that their work is their calling to serve others} allows workers to derive a meaning and purpose in life, and a sense of being connected; membership is the foundation of workplace spirituality.

Hence, workplace spirituality may be defined as "a framework of organizational values evidenced in the culture that promotes employees' experience of transcendence through the work process, facilitating their sense of being connected in a way that provides feelings of compassion and joy" (Giacalone and Jurkiewicz 2003).

For the incorporation of workplace spirituality to be successful the organization and its leaders must be committed to spirituality. While organization's commitment to spirituality can be measured based on its vision, ethics and policies; leader's commitment is difficult to assess. To solve this issue, Spiritual Leadership Theory (SLT) was pioneered. Spiritual leadership theory incorporates concepts of vision, hope and altruistic love, theories of workplace spirituality and spiritual survival, and organizational outcomes of commitment and productivity (Fry 2003). Altruistic love, for the purpose of this paper, may be defined as "a sense of wholeness, harmony, and well-being produced through care, concern, and appreciation for both self and others" (Fry, 2003). However, for better comprehension, what vision, hope and altruistic love include has been shown by Table 2.

Table 2: Characteristics of Vision, Altruistic Love and Hope (Fry, 2003)

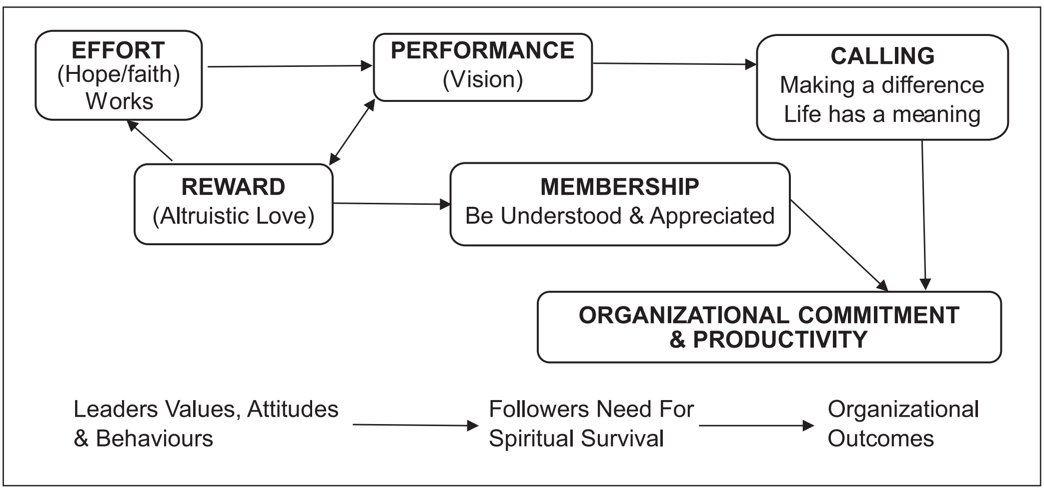
Vision	Altruistic Love	Hope
Broad appeal to key stakeholders	Forgiveness	Endurance
Defines the destination and journey	Kindness	Perseverance
Reflects high ideals	Empathy/Compassion	Do what it takes
Encourages hope/faith	Honesty	Stretch Goals
Establishes a standard of excellence	Patience	Expectation of reward/ victory
	Trust/Loyalty	
	Integrity	
	Courage	
	Humility	

But before proceeding to SLT it is important to understand spiritual leadership which may be defined "as comprising of values, attitudes, and behaviours that are necessary to intrinsically motivate one's self and others so that they have a sense of spiritual survival through calling and membership - i.e., they experience meaning in their lives, have a sense of making a difference, and feel understood and appreciated" (Fry, 2003). The inclusion of the term behaviour necessarily emphasizes the fact that merely preaching such ethics is not sufficient, a leader's behaviour must reflect his beliefs. Many researchers have tried to identify the values and attitudes that a spiritual leader must possess and exhibit. It is agreed that for a leader to be spiritual he must have spiritual motivation, spiritual qualities and must adhere to spiritual practices (Reave n.d.). A leader is said to have spiritual motivation when he regards his work as a calling- a means for positive transformation. While spiritual qualities include integrity, humility and honesty, spiritual practices encompass fair treatment of subordinates, mutual respect, self-reflection and acknowledgment of an employee's contributions (Reave n.d.).

Empirical studies have been undertaken with the objective of figuring out the impact of spiritual leadership on organizational and individual leader performance. Studies prove that spiritual leadership and organizational performance measured by organizational commitment, productivity, sales growth and profitability are positively related (Fry and Matherly n.d.). Furthermore, the presence of spiritual factors i.e. spiritual motivation, spiritual qualities and spiritual practices have proven to improve leadership success (Reave n.d.).

SLT explores how spiritual leadership impacts organizational performance. By giving employees a vision, the leader clarifies on organizational roles and performance expectations. When the roles assigned to individuals align with their personal beliefs and ethics, they are intrinsically motivated and thus, committed to their tasks thereby increasing the enterprise's overall productivity. By practicing altruistic love, leaders express their trust in, and appreciation of, the workforce's contribution and this makes them experience a sense of belongingness. This, along with performance-based compensation, encourages employees to persevere for the organization's success. This theory is depicted by Fig. 2.

Fig. 2: Spiritual Leadership Theory (Fry, 2003)

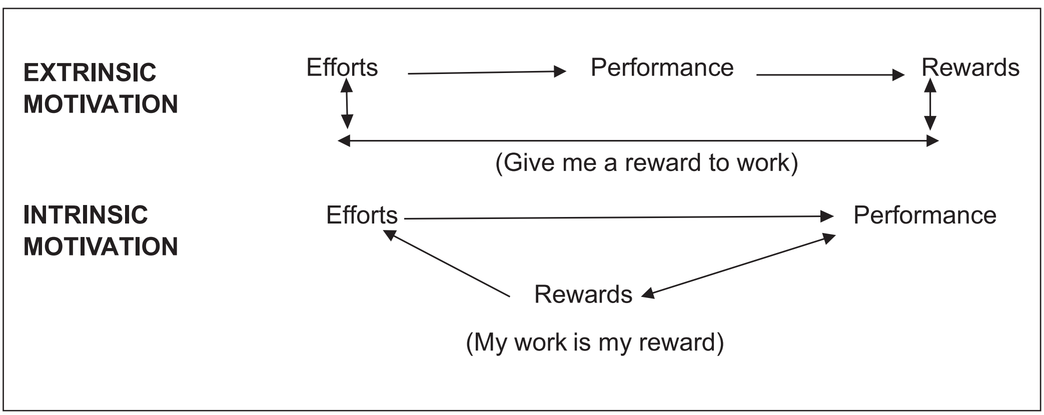


SYNERGIES BETWEEN THE CONCEPTS OF HPWS AND SPIRITUAL LEADERSHIP

Previously, the meaning, impact and operating mechanism of HPWS were discussed; moving on we shall now explore the human resource practices that create such systems. There are seven principles, that all researchers have agreed on, that together create a HPWS. The first one of them is employee security. Despite the trend for organizations to hire part-time or contract workers, research manifests that undertakings that pledge job security are more sustainable and have improved long-term bottom line performance (Cameron 1994). Guaranteeing job security builds high-trust partnership with the employees and ensures their commitment to the organization's success (Pfeffer 1998).

The second principle is of selective hiring, which re-emphasizes on the need to hire workers whose personal morals and goals align with the organization's ethics, values and vision, and this shared orientation keeps the employees intrinsically motivated. Intrinsic motivation can be defined as an individual's commitment to a task because he derives satisfaction from the task as opposed to extrinsic motivation where interest is driven by external factors like peer pressure or tangible rewards. If the workers are intrinsically motivated there is no need for the company to use reinforcement which may lead to a tense work environment. The difference between intrinsic and extrinsic motivation is shown in Figure 3. A prerequisite for the principle of selective hiring, however, is for undertakings to identify the critical skills and attributes that their employees should possess (James C. Collins, 2001) Selective hiring by itself produces better outcomes so much so that James C. Collins asserted that hiring the right candidates differentiated 'good' companies from 'great' companies.

Fig. 3: Functioning Mechanisms of Intrinsic and Extrinsic Motivation (Fry, Toward a theory of spiritual leadership., 2003)



Next postulation is decentralization. It has been validated that through the delegation of decision-making authority, organizations help their employees in delivering outstanding results (Cattermole, Johnson, and Roberts 2013) Delegation of authority lets the employees know that the organization respects and trusts them and their decisions. This awareness encourages employees to support the organization in its endeavours and to strive for its success. Trust acts as a significant mediator in the attitude-similarity and attraction link (SAL), a well-established concept in social psychology, despite being juxtaposed with all of the three traditional mediators- inferred attraction, respect for the acquaintance and the experience of positive affect by the perceiver (Singh et al. 2015); thereby becoming the single most important attribute of an ideal interdependent group(Cottrell, Neuberg, and Li 2007). Result-based compensation is the next HR practice that leads to a HPWS. Result-based compensation, when applied uniformly at all levels of the organization, gives a sense of just and equitable treatment and also motivates the workforce to perform well by increasing employee awareness of their roles in contributing to profitability. Furthermore, performance-based compensation enhances the social system of accountability within teams and thereby, the organization(Rhoades 2011). Next up, is the principle of training by commitment. While some organizations believe that training is frivolous and some train their workforce on how to perform a job, companies aiming to create HPWS focus on training employees by a combination of methods that concentrate on how to take initiatives, resolve problems and be responsible for their choices and quality. Such trainings, by not focusing on technical skills that are needed to perform the job, demonstrate the trust that the organization has on its employees and are an acknowledgement of their talents. Empirical studies suggest that employee commitment, ownership and contribution to firm performance is improved by work-related team training (Laszlo, Laszlo, and Johnsen 2009). Reduced status barriers are yet another practice that conveys the organizations belief that all employees are equally important and valuable. Flatter organizational structures along with appropriate leadership de-emphasize hierarchical status, empower employees and promotes fair and dignified treatment of employees thereby building trust and commitment (Pfeffer, 1998). Further, reduced status barriers are a statement that, instead of controlling people, the organization is committed to building high-trust cultures by developing and nurturing workforce (Covey 2005). The last principle for developing HPWS is information sharing. Any kind of key valuable information is always shared only with those who are considered trustworthy or important, whether in personal life or in professional life. Sharing strategic details with employees conveys an identical message- that they are trustworthy and important, which reduces misunderstandings that could be created by rumours due to information asymmetry. Information symmetry also acts as a statement of how honest an organization is. Such information along with proper training regarding their efficient utilization is critical especially in a global economy where application of knowledge and wisdom by an organization determines its performance and sustainability (Covey 2005) (Pfeffer, 1998). These seven HR practices, individually, create a positive impact on an employee's perception of the organization and of his role in the organization. Such impact leads to a work environment characterized by high-trust, better commitment and harmony. The qualities that are exhibited by the seven principles of HPWS are summarized in Table 3.

Table 3: What Different HR Practices Mean to Employees

HR Practices	Qualities Exhibited (Means)
Job Security	Commitment to Employees
Selective Hiring	Intrinsic Motivation
Decentralization	Trust
Result-Based Compensation	Fairness
Training by Commitment	Appreciation of Skills
Reduced Status Barriers	Humility
Information Symmetry	Honesty

HPWS can be effective only when, along with organizational structural provisions for the aforementioned practices, the leaders of the undertaking are willing to adopt and adhere to such practices. This means that leaders in the organization must be fair, honest, humble, appreciative of their subordinates' contribution and supportive. They must be willing to inspire and motivate their employees and create dedicated workforce. In earlier discussion regarding spiritual leadership we noted the qualities and practices adopted by one, as summarized in table 4. Further, while discussing SLT we saw how a spiritual leader by attending to an employee's need for spiritual survival creates a positive impact on the bottom line. This impact was possible only because he, the spiritual leader, was able to intrinsically motivate the workforce and inspire them to be confident of their choices and of the organization's actions. Hence the existing structural arrangements for HPWS will be more effective if spiritual leadership is adopted. This means spiritual leadership acts as a catalyst in the HPWS- organizational performance link.

Table 4: Spiritual Leadership Qualities and Practices

Spiritual Qualities	Spiritual Practices
Integrity	Fair Treatment
Humility	Appreciative of Contributions
Honesty	Expressing Care and Concern

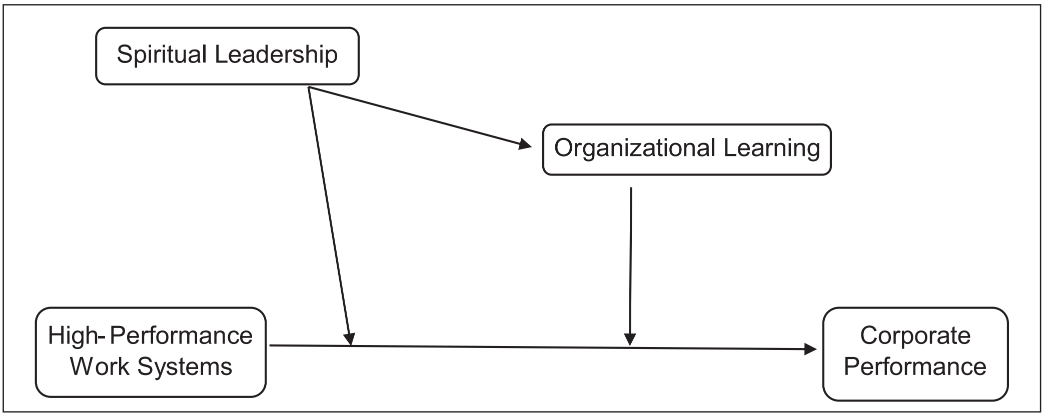
However, while discussing the mechanism of HPWS, organizational learning was the moderator, not spiritual leadership. This brings us to the question as to whether or not spiritual leadership and organizational learning are exclusive of each other. To answer this question, we need to dwell deeper into the process of organizational learning. Organizational learning is more than the mere addition of individual learnings given that an organization's memory preserves certain norms, mental maps, behaviours and values over time that may be introduced by members who no longer are a part of the undertaking. Organizational learning is a process comprising of four components: acquisition, interpretation, distribution and storage of information. These processes need not necessarily be in a sequential order, their order depends on the context in which they operate. Knowledge can be acquired from both external as well as internal sources. Internally, information can be inherited from leaders or be derived from group learning. For this to be possible there must be a willingness to interact and share information with peers and between leaders and subordinates. Efficient interpretation is important if the organization wishes to effectively utilize the available information. However, for the impact of the information to be analysed the relevance of the available information with regards to the organizations activities and objectives must be judged and for that to happen all levels of the organization must be aware of the vision and mission of the undertaking. After interpretation is distribution. Knowledge that is not applied at the right place at the right time is of no use. This means that for the organization to gain advantage, knowledge must be distributed across the structure, regardless of position or authority. Some information may not be relevant under the current circumstances but may become material in future. Thus, all information relevant with the organization's vision must be stored. The processes and the conditions in which they shall be effective are summarized in table 5. Having spiritual leadership, as discussed earlier, creates a harmonious work environment and inspires a committed workforce which, in turn, facilitates organizational learning.

Table 5: Prerequisites for Organizational Learning Process

Process	Condition
Acquiring (internal)	Membership and Reduced Status Barriers
Interpreting	Understanding of Roles and their Contributions
Distribution	Information Symmetry
Storage	Commitment to Organizational Performance

From our discussion so far, the relationship between spiritual leadership and HPWS and between organizational learning and spiritual leadership have been identified. This relationship is depicted by the moderating effects model shown in figure 4.

Fig. 4: HPWS-Spiritual Leadership-Corporate Performance Functioning Mechanism



IMPLICATION OF THIS SYNERGY FOR ORGANIZATIONS

The model presented above re-emphasizes the need for organization to promote and adopt spiritual leadership. Though earlier researches did prove the impact of spiritual leadership on the bottom line, they didn't justify the relevance of spiritual leadership in the presence of other management and leadership theories. This paper, by contextually justifying the relevance of spiritual leadership when other more recognised practises like organizational learning and systems like HPWS are already in operation, calls for organizations to incorporate spiritual leadership and demonstrates that such inclusion can be seamless. It outlines certain practices that organizations can assume in pursuit of greater workplace spirituality.

LIMITATIONS

Though the paper justifies the adoption of spiritual leadership by organizations that have developed high-performance work systems, it does so by building on existing research and not empirically, owing to time-constraints. It is quite possible for results from previous research to be influenced by variables that were beyond the scope of the research. Further, the instruments for adopting spiritual leadership and developing workspace spirituality have not been discussed.

SCOPE FOR FURTHER RESEARCH

The adoption of spiritual leadership while other practices are in operation can be recommended only in the presence of empirical evidence which must be collected through further studies. Whether or not spiritual leadership is a viable option as compared to other leadership theories can be decided only by investigating the correlation between investment in spiritual leadership and corresponding impact on an organization's bottom line.

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Importance of Ethics in Accounting Education : Students' Perspective

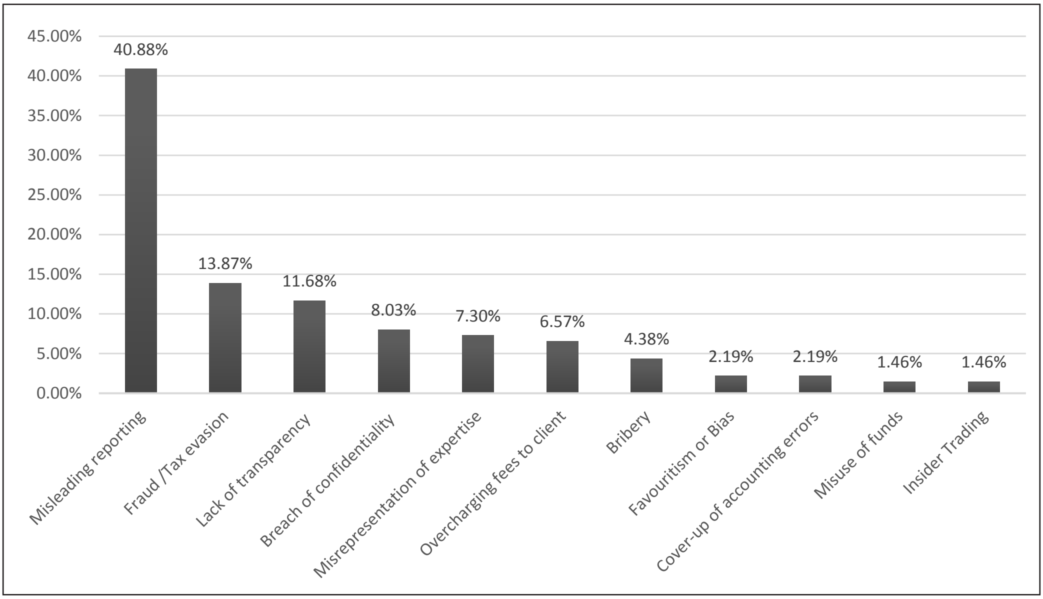
ABSTRACT

With the rising complexities in the business ecosystem and the upward globalization trend, reinforcing the global accounting profession and the advancement of cross-border economies through adherence to ethical standards is essential. This paper aims to analyze the perception of students' on the importance of ethics in accounting education. A primary survey was conducted amongst 132 undergraduate students of Delhi University, India with a two-fold objective. Firstly, to determine the significance of ethics in the business community, business courses and decision making in the workplace. Secondly, to analyze respondents' views on the value of goals of ethics education in accounting. The results indicate that women and older subjects identify ethics in accounting education to be more crucial than men and younger subjects respectively. The respondents also consider ethics teaching to be relevant to them in multiple spheres of life and their future careers.

INTRODUCTION

In today's dynamic business environment, auditing and accounting play a decisive role in ensuring the systematic functioning of the financial affairs of a business. It develops a framework for decision-making and assists stakeholders in both short-run and long-run planning. Accounting not only helps in keeping records, but it ensures discovery and prevention of fraud, evaluation of business performance, planning for financial stability, and aids future financial estimates and budgets. A rise in events indicating fraudulent financial reporting has significantly increased the importance of ethical accounting practices and ethics education (Graham, A. 2012). According to the International Federation of Accountants, Professional accountants are often encountered with moral dilemmas and ethical choices, and education and training improve their ethical capability.

Graph 1: Common Ethical Issues as per International Federation of Accountants



The Association of Chartered Certified Accountants (ACCA) celebrates Global Ethics day to foreground the need for ethical leadership steered at promoting public discourses about how technological advancements, stringent regulations and rapidly changing consumer behavior have led to ethical complexities in the ever-changing business environment.

LITERATURE REVIEW

In this portion, we intend to study previous literature on student's perceptions about the importance of accounting ethics and business ethics education.

Graham, A. (2012) surveyed 150 undergraduate students to determine the objectives and efficiency of teaching ethics in undergraduate accounting programs. According to the survey, the students regard ethics training as relevant to them, and they promote standalone ethics courses than the incorporation of it across the college curriculum. The results highlight ethics being a critical foundation for the future success of the students in the modern dynamic business ecosystem.

Betz M., O'Connell L., & Shepard J. M. (1989) aims at understanding the gender differences in predilection towards unethical practices. The study found females to be more ethical than males. The results provide bedding for gender socialization that is a learning and development process that enables individuals to be better informed about the norms and behavior associated with their sex.

Ruegger, D., & King, E. W. (1992) analyzed the interrelationship between age and gender when considering ethical dilemmas. The findings of the survey supported the view that women and older subjects are more ethical than men and younger subjects and thus face fewer ethical problems. Contrary to the above findings, McNichots and Zimmerer (1985) witnessed no convincing variations in the ethical values of males and females in their study.

Kerr, D. S., & Smith, L. M. (1995) surveyed 244 accounting students to examine three vital issues regarding ethics education in accounting – whether ethics can be taught, ingenious methods to inculcate ethics in education and lastly students insights of ethical issues in the profession, education, and the community at large. The results highlight that students require ethical guidance and mentorship to address ethical dilemmas.

RESEARCH HYPOTHESES

Based on the literature review, the research hypotheses asserted is as follows:

H01: Students give much significance to ethics in the business community, business courses and decisions in the workplace.

H02: Women identify ethics in accounting education to be more crucial than men.

H03: Older subjects (graduates and third-year undergraduate students) identify ethics in accounting education to be more crucial than younger subjects (first and second years undergraduate students).

Research Methodology

a. Participants

Table 1: Sample Demographics

Students (N = 132)	
Average age	19.77
Gender	
Female	72
Male	60
Total	**132**
Classification	
First & second year	55
Third year & graduates	77
Total	**132**

A survey of 132 accounting students and graduates of Delhi University, India was undertaken to analyze students' perceptions of the importance of accounting ethics education. Sample demographics are shown in Table 1. The sample age of the students is 19.77 with older subjects (third-year students and graduates) being more than the younger subjects (first and second-year students), 77 (58 percent) and 55 (42 percent) respectively. At the same time, the sample has 55 percent of female participants and 45 percent male participants. The average number of accounting subjects completed in the college curriculum reported by the participants was 3.16 with a minimum of 1 subject and a maximum of 6 subjects.

b. Research Instrument

A questionnaire was circulated to analyze the students' perceptions of the importance of accounting ethics education. The questionnaire consists of three sections. The first section enquires about the basic and personal details of the participants. In the next section, participants are enquired about the ethics paper offered at their university as a part of the college curriculum that is adapted from Cohen and Pant (1989, pp. 74-78) and also used in other studies (Nell Adkins and Robin R. Radtke, 2004, pp. 279-300). In the last section, the participants rate the significance of ethics in three different spheres:-

1. Business community
2. Business course
3. Decisions in the workplace

The participants also rate the significance of seven goals of ethics education which are as follows:-

1. Associating moral dilemmas and arguments to accounting education.
2. Understanding the ethical inferences of accounting issues.
3. Fostering a sense of moral duty and responsibility.
4. Establishing capabilities to accord to ethical clashes or conundrum.
5. Developing a correct attitude to deal with the unpredictable nature of the accounting profession.
6. Progression towards a change in moral behavior and conduct.
7. Acknowledging the past and understanding different facets of accounting ethics and their link to the overall discipline of ethics.

Table-2: Importance in Business community

		Frequency	Percent	Cumulative Percent
Scale	1.00	63	47.7	47.7
	2.00	29	22.0	69.7
	3.00	16	12.1	81.8
	4.00	7	5.3	87.1
	5.00	2	1.5	88.6
	6.00	10	7.6	96.2
	7.00	5	3.8	100.0
	Total	**132**	**100.0**	

The seven goals have been adapted from Callahan (1980, pp. 64-74) and Loeb (1988, p. 322). Afterward, they have been used in further research by Nell Adkins and Robin R. Radtke (2004, pp. 279-300), Geary and Sims (1994, p. 5). In the last section, a seven rating Likert scale is used with 1 as important, and 7, unimportant.

RESEARCH ANALYSIS & RESULTS

The primary survey questions are in the third part of the questionnaire and its analysis is reported here. While understanding the students' perception of the importance of ethics in the business community, 69.7 percent of the participants lie in the top 2 bands of the scale. Meanwhile, 11.4 percent of the respondents fall in the bottom two bands. This promising result suggests that students regard ethics as an essential part of the business community. Business ethics is much beyond a concept to boost the image of an organization, it is the very foundation of its success. It enables the corporation to limit its risk and retain its top talent. Table -3 reflects that the majority of the respondents (74.2 percent) agree with the proposition that ethics education is essential in business courses. Around 15 percent of the participants disagree, the remaining 10.6 percent are neutral and they lie on the midpoint. Universities across the globe emphasize on corporate governance and business ethics education to develop student's critical thinking skills and to teach students their responsibilities towards their society and profession.

Table – 3: Importance in business courses

		Frequency	Percent	Cumulative Percent
Scale	1.00	38	28.8	28.8
	2.00	35	26.5	55.3
	3.00	25	18.9	74.2
	4.00	14	10.6	84.8
	5.00	6	4.5	89.4
	6.00	10	7.6	97.0
	7.00	4	3.0	100.0
	Total	**132**	**100.0**	

Table-4 highlights that out of 132 respondents, 106 falls in the top 3 bands indicating that students realize the importance of ethical decision-making in the workplace. It enhances pellucidity and ensures seamless functioning in the corporation. According to the descriptive statistics given in table-5, the mean scores of the replies to the 3 statements by the respondents indicate that the strongest level of importance was placed on the first statement (m=2.2879) and the weakest was on the second (m = 2.7045). Yet, the mean score of all the statements lies in the top 3 bands indicating that respondents are receptive to ethics validating the first hypotheses.

Table – 4: Importance of ethics in your decisions in the workplace

		Frequency	Percent	Cumulative Percent
Scale	1.00	57	43.2	43.2
	2.00	35	26.5	69.7
	3.00	14	10.6	80.3
	4.00	5	3.8	84.1
	5.00	5	3.8	87.9
	6.00	10	7.6	95.5
	7.00	6	4.5	100.0
	Total	**132**	**100.0**	

Table – 5: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
1. What is the significance of ethics in the business community?	132	1.00	7.00	2.2879	1.74536
2. What is the significance of ethics in business courses?	132	1.00	7.00	2.7045	1.67486
3. What is the significance of ethical decision making in the workplace?	132	1.00	7.00	2.3939	1.80228

The third portion of the questionnaire talks about the seven notable goals of ethics education. The respondents rated the importance of each goal on a range of 1 to 7 with 1 signifying the most important and 7, unimportant. Correlation analysis was conducted to understand the interrelationship between the importance of goals, gender, and age of the respondents. It was essential to understand whether women regard ethics education to be more critical than men and whether older subjects regard ethics education to be more critical than younger subjects. For correlation analysis, men were assigned a value equal to 0 and women equal to 1. A negative correlation was observed between gender and the rating assigned to any goal by the respondent. This indicates that the gender that was assigned a higher value (women) recorded a lower score and the gender that was assigned a lower value (men) recorded a higher score that signifies less importance of goals of ethics education to the corresponding gender.

Consequently, it highlights that women identify ethics education to be more important than men. There was a similar conclusion in the case of analysis of the relationship between age and the importance of goals of ethics education. A negative correlation was observed signifying that older subjects identify ethics education to be more crucial than younger subjects.

Table 6 - Correlation Coefficient of seven goals of ethics education

Particulars	Gender	Age
Associating moral dilemmas and arguments to accounting education.	-0.1748	-0.1600
Understanding the ethical inferences of accounting issues.	-0.1285	-0.0942
Fostering a sense of moral duty and responsibility.	-0.2490	-0.0241
Establishing capabilities to accord to ethical clashes or conundrum.	-0.3049	-0.0791
Developing a correct attitude to deal with the unpredictable nature of the accounting profession.	-0.1321	-0.0750
Progression towards a change in moral behavior and conduct	-0.3313	-0.0522
Acknowledging the past and understanding different facets of accounting ethics and their link to the overall discipline of ethics.	-0.1114	-0.0766

According to the descriptive statistics given in table-7, the mean scores of the responses to the 7 goals of ethics education by the participants indicate that women lay the strongest level of importance on the sixth statement (m=2.0556) and the weakest was on the seventh (m = 2.667). However, men place the strongest level of importance on the second statement (m= 2.7500) and the weakest on the fourth statement (m= 3.1167). On comparing the mean based on gender, women place greater importance on all the goals of ethics education than men.

Similarly, descriptive statistics given in table – 8 indicate that amongst all the goals of ethics education, fostering a sense of moral duty and responsibility is of utmost importance to both older subjects and younger subjects. However, while comparing the mean scores based on age, we can infer that older subjects place greater value on all the goals of ethics education than younger subjects.

Table -7: Descriptive statistics of goals of ethics education according to Gender

Particulars		N	Mean	Std. Deviation
Associating moral dilemmas and arguments to accounting education.	Male	60	2.9667	1.66689
	Female	72	2.4722	1.12553
Understanding the ethical inferences of accounting issues.	Male	60	2.7500	1.74302
	Female	72	2.3889	1.02854
Fostering a sense of moral duty and responsibility.	Male	60	2.8667	1.67197
	Female	72	2.0972	1.34436
Establishing capabilities to accord to ethical clashes or conundrum.	Male	60	3.1167	1.79540
	Female	72	2.1250	1.32088
Developing a correct attitude to deal with the unpredictable nature of the accounting profession.	Male	60	3.0000	1.71731
	Female	72	2.5694	1.53665
Progression towards a change in moral behavior and conduct.	Male	60	3.0833	1.75916
	Female	72	2.0556	1.17352
Acknowledging the past and understanding different facets of accounting ethics and their link to the overall discipline of ethics.	Male	60	3.0333	1.71698
	Female	72	2.6667	1.57444

Table -8: Descriptive statistics of goals of ethics education according to Age

Particulars		N	Mean	Std. Deviation
Associating moral dilemmas and arguments to accounting education.	Younger Subjects	55	2.9636	1.23174
	Older Subjects	77	2.5065	1.50982
Understanding the ethical inferences of accounting issues.	Younger Subjects	55	2.7091	1.32878
	Older Subjects	77	2.4416	1.45542
Fostering a sense of moral duty and responsibility.	Younger Subjects	55	2.4909	1.30345
	Older Subjects	77	2.4156	1.70410
Establishing capabilities to accord to ethical clashes or conundrum.	Younger Subjects	55	2.7273	1.43313
	Older Subjects	77	2.4675	1.75157
Developing a correct attitude to deal with the unpredictable nature of the accounting profession.	Younger Subjects	55	2.9091	1.51868
	Older Subjects	77	2.6623	1.70611
Progression towards a change in moral behavior and conduct.	Younger Subjects	55	2.6182	1.58103
	Older Subjects	77	2.4545	1.53508
Acknowledging the past and understanding different facets of accounting ethics and their link to the overall discipline of ethics.	Younger Subjects	55	2.9818	1.47185
	Older Subjects	77	2.7273	1.75946

Table-9: Independent Samples Test - 75% Confidence Interval

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	75% Confidence Interval of the Difference	
								Lower	Upper
Associating moral dilemmas and arguments to accounting education.	5.635	.019	2.024	130	.045	.49444	.24428	.21218	.77671
Understanding the ethical inferences of accounting issues.	15.229	.000	1.477	130	.142	.36111	.24451	.07858	.64365
Fostering a sense of moral duty and responsibility.	3.686	.057	2.931	130	.004	.76944	.26254	.46608	1.07281
Establishing capabilities to accord to ethical clashes or conundrum.	15.172	.000	3.650	130	.000	.99167	.27169	.67772	1.30561
Developing a correct attitude to deal with the unpredictable nature of the accounting profession.	1.136	.288	1.519	130	.131	.43056	.28338	.10311	.75800
Progression towards a change in moral behavior and conduct.	16.494	.000	4.004	130	.000	1.02778	.25670	.73115	1.32440
Acknowledging the past and understanding different facets of accounting ethics and their link to the overall discipline of ethics.	.432	.512	1.279	130	.203	.36667	.28679	.03528	.69806

Independent T-test was conducted to understand the pattern of significance laid by different respondents on the goals of ethics education depending upon the gender of the respondent. Under a 75% confidence interval of the mean difference, both the upper and the lower interval are positive indicating that there is 75% confidence that the mean difference shall be positive. It indicates that there is 75% confidence that women shall identify ethics in accounting education to be more crucial than men.

RECOMMENDATIONS

1. Announcing the ranking of schools and universities by the government based on ethics incorporation in education to highlight the importance of ethics and to foster its inculcation in the academic curriculum.
2. Real-time mandatory ethics training and projects for students to familiarize themselves with the ethical dilemmas encountered in the business ecosystem.
3. Organizing events to promote a culture of ethical practices and spreading awareness amongst scholars about the implications of immoral and unethical acts.
4. Promoting academic integrity by introducing stand-alone ethics courses in schools and universities.

CONCLUSION

In this research, we examined students' opinions on the importance of accounting and business ethics education. With the rising corporate scandals and complexities in the business ecosystem, ethical practices and approaches are fundamental to the efficient functioning of enterprises. The survey intended to understand the importance of ethics in the business community, business course, and decisions in the workplace. At the same time, it was essential to comprehend students' perceptions of the importance of seven goals of ethics education adapted from Callahan (1980, pp. 64-74) and Loeb (1988, p. 322). The results of the research methodology justify all three hypotheses undertaken.

Firstly, it highlights that women tend to place more emphasis on ethics in accounting education than men that support other studies(Betz M., O'Connell L., & Shepard J. M.,1989).

Secondly, older subjects identify ethics in accounting education to be more important than younger subjects. Lastly, students regard ethics as an essential part of the business community and realize the value of ethical decision making in the workplace.

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Analyzing Challenges of the Recent Bank Mergers

ABSTRACT

The health of the banking system is a crucial component of the country's economy. Banks are vital institutions, which contribute to the economic growth and economic development of a nation and allows it to achieve self-sufficiency in a world of changing possibilities. The essential role played by the banks makes it necessary for the authorities to ensure that they are not vulnerable to collapse, as the downfall of the banking system in a country can trigger a financial crisis. Given how the banking system plays a crucial role in capital infusion, a financial predicament in this age of globalization will have a cascading effect on the economies of several nations and have devastating effects on the long-term growth prospects of the world. This paper seeks to highlight the challenges posed by these mergers and acquisitions in the Indian banking sector and how it will shape the future of the Indian banking system. We have built our hypothesis by extensively studying the existing literature. We concluded that these challenges are very significant and need to be strategically addressed, with operational efficiency and financial performance at the core, to bear the fruits of mergers.

KEYWORDS

Merger and Acquisitions; Core Banking System; Too Big to fail; Organizational Culture

INTRODUCTION

Banks are the pillars responsible for making the present world what it is today. They are the avenues, which facilitate investment and stimulate economic activity by mobilizing the savings of the public and channelizing funds to borrowers with promising investment propositions and needs. Keeping this view in mind, the world economies have undertaken several measures to ensure that the banks are strong and can cater to the needs of the ever-changing business environment.

In the Indian Banking system, there have been rapid changes like the entry of new foreign banks with substantial financial resources, new technological innovations to smoothen the banking operations, the introduction of complex financial products and the changing customer behavior, who are demanding a wide range of products at lower prices with excellent service quality. The increasing competition has reduced the profit margins of the banks considerably and many are struggling to achieve profitability in this dynamic environment. They are looking for new ways to increase their market share and enhance their profitability. One of these ways is Mergers & Acquisitions.

Mergers & Acquisitions is one of the most prevalent methods used by firms to increase their market share by creating synergy and economies of scale. A merger implies a combination of two or more firms into a single entity, while Acquisition indicates one firm taking over another. The word merger can be abbreviated as - M - Mixing, E -Entities, R - Resources for, G - Growth, E - Enrichment and R – Renovation (Vision 2020: Mergers and Acquisition of Indian Banking, Banking Reforms and Globalization, 2007). Mergers & Acquisitions is considered to be one of the very few methods which can strengthen market share and allow a firm to tap into new markets within a very short period of time.

Mergers & Acquisitions in the Indian banking industry started with the formation of the Imperial Bank of India by merging Bank of Bengal, Bank of Bombay and Bank of Madras (which were known as Presidency Banks). The Imperial Bank was nationalized and renamed as State Bank of India (SBI), established under the State Bank of India Act, 1955. In the early 1960s, many banks failed as they had a low capital base and the public lost confidence in the Indian banking system. To avoid a "run on the banks", many unsuccessful private banks were merged with successful public sector banks. The nationalization of 14 large commercial banks in 1968 and 6 more commercial banks in 1980, caused nearly 91% of the banking sector to be under the Indian Government's direct control. Since then, there have been many mergers & acquisitions in the Indian Banking sector.

LITERATURE REVIEW

The importance of HR in mergers has been aptly explained by Schraeder and Self (2003), who said: "HR can make or break the M&As." After reviewing the past organizational problems usually result in unsuccessful mergers. This fact has been supported by Jayadev (2007), who revealed that 90% of the banks involved in the mergers of the Indian banking system thought that HR problems were the most challenging issue to solve in a merger.

Narayanswamy (2017) opined that the acquiring firm always needed to check the financial performance of the target firm as merger affects the financial position and wealth of all stakeholders. He also highlighted that the merged entity might have poor financial performance.

Srivassan (2009) had also said that though mergers increased the firm size, it may not maximize profitability. Krati (2018) stated that the success of mergers depends mainly on how well the cultural differences are assessed and integrated. The analysis by Jayadev (2007) of the mergers in the Indian banking system revealed that nearly 90% of the banks stated that HR problems were the most complex organizational issue in case of mergers.

The importance of HR in mergers has been aptly explained by Schraeder and Self (2003), who said: "HR can make or break the M&As". After reviewing the past organizational problems usually result in unsuccessful mergers. This fact has been supported by Jayadev (2007) who revealed that 90% of the banks involved in the mergers of Indian banking system thought that HR problems were the most difficult issue to solve in a merger.

OBJECTIVES

The main objective of this paper is to study the recent bank mergers in India and analyze the expected challenges due to these mergers. We have attempted to examine these obstacles through the eyes of various stakeholders like the management, employees, public and customers. This has helped us understand the importance of settling these issues, which can hinder the entire exercise redundant if not resolved with caution.

RECENT BANK MERGERS IN THE INDIAN BANKING SYSTEM

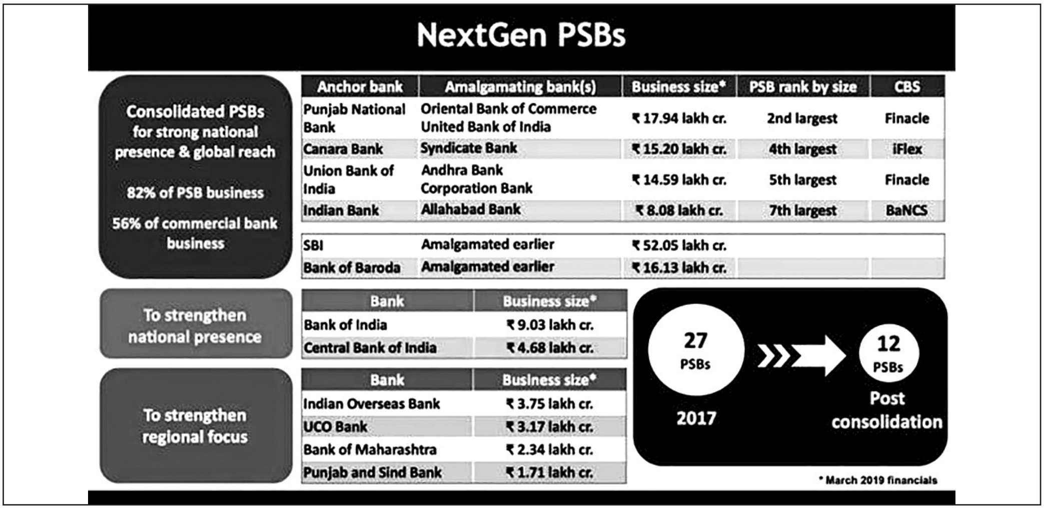
The increasing complexity of banking operations and the introduction of financial innovations have made banking a very complex industry. The importance of Mergers & Acquisitions in such a complex industry cannot be undermined. In late August, the Finance Minister of India, Smt. Nirmala Sitharaman had announced the merger of 10 Public Sector Banks into four large Public Sector Banks. Considering the recent merger of Bank of Baroda, Dena Bank and Vijaya Bank, these proposed mergers will bring down the total number of Public Sector Banks in our country from 18 banks to 12 banks. These mergers had been proposed by the Finance Minister, keeping in view the benefits of big banks.

The mergers announced by our Finance minister will help to integrate the resources of banks into a single entity and tackle obstacles like inadequate capital, lack of funds to update the latest technological developments leading to outdated technology, cutthroat competition causing reduced profitability margins, etc. These proposed mergers may provide them with the much-desired push to establish themselves as profitable and viable financial institutions with an international presence.

The credit lending ability of the banks will increase manifold due to the safety cushion provided by the combined capital of all the merging banks. These mergers also tend to contribute to risk diversification as the risks relating to the geographical and commercial aspects can be reduced. For example, if one of the banks has a strong presence in Northern India and other has a strong foothold in South India, the merged bank will be benefitted as if South India witnesses a slowdown, the overall operations of the bank will not be hit very hard due to its strong presence in North India. Similarly, one of the merging banks may specialize in dealing with big corporate customers, while one may have a larger share in the MSME loan segment. So, the merged entity will have the expertise to deal with various loan segments. Bigger banks also have a better chance of raising funds from the capital market as the size of the bank provides the investors with the required confidence to buy securities of the merged bank.

INDIAN BANKING INDUSTRY AFTER THE BANK MERGERS

Figure 1: Pictorial Presentation of Indian Banking Industry after the bank mergers



(Source – The Department of Financial Services) COMPARISON OF BANKS

COMPARISON OF BANKS

The decision by the Finance Minister of India, Smt. Nirmala Sitharaman is considered to be the most significant decision in recent times involving the Indian banking sector as it seeks to change the Indian banking ecosystem by merging ten public sector banks into 4 “global-sized banks.” This can be a game-changer for the financial sector & will bring a strong national presence and global reach of these banks. But the execution & smooth transition of bank consolidation will be a huge challenge. We try to understand the impact of this move by comparing various aspects of the banks merged before the merger and understand the implication of the mergers.

Table 1: Deposits of Banks which were merged and SBI

	Deposits		(Rs. Cr.)
Banks	As on 31 Mar 2019	As on 31 Mar 2018	As on 31 Mar 2017
State Bank of India	29,11,386	27,06,343	20,44,751
Punjab National Bank	6,76,030	6,42,226	6,21,704
Oriental Bank of Commerce	2,32,645	2,07,346	2,19,339

Union Bank of India	4,15,915	4,08,502	3,75,899
Canara Bank	5,99,033	5,24,772	4,95,275
Syndicate Bank	2,59,897	2,72,776	2,60,561
Allahabad Bank	2,14,334	2,13,604	2,01,870
Indian Bank	2,42,076	2,08,294	1,82,509

Table 2: Employees of Banks which were merged and SBI

Staff Cost As % of Total Operating Cost			
Banks	For FY ending 31 Mar 2019	For FY ending 31 Mar 2018	For FY ending 31 Mar 2017
State Bank of India	58.91%	55.35%	57.00%
Punjab National Bank	60.35%	67.87%	57.79%
Oriental Bank of Commerce	54.33%	48.93%	59.90%
Union Bank of India	43.96%	48.19%	53.34%
Canara Bank	54.24%	56.96%	57.74%
Syndicate Bank	67.24%	65.61%	68.98%
Allahabad Bank	56.93%	54.13%	56.24%
Indian Bank	55.29%	57.25%	59.33%

Table 3: Branches of Banks which were merged and SBI

No. of Branches			
Banks	As on 31 Mar 2019	As on 31 Mar 2018	As on 31 Mar 2017
State Bank of India	22,218	22,620	17,365
Punjab National Bank	6,991	6,987	6,938
Oriental Bank of Commerce	2,390	2,389	2,376
Union Bank of India	4,292	4,301	4,282
Canara Bank	6,310	6,204	6,083
Syndicate Bank	4,032	4,012	3,933
Allahabad Bank	3,230	3,245	3,245
Indian Bank	2,875	2,823	2,682

Table 4: Assets of Banks which were merged and SBI

	Total Assets		(Rs.Cr.)
Banks	As on 31 Mar 2019	As on 31 Mar 2018	As on 31 Mar 2017
State Bank of India	36,80,914	34,54,752	27,05,966
Punjab National Bank	7,74,949	7,65,830	7,20,331
Oriental Bank of Commerce	2,71,910	2,33,344	2,53,065
Union Bank of India	4,94,039	4,87,406	4,52,704
Canara Bank	6,94,767	6,16,886	5,83,519
Syndicate Bank	3,11,279	3,23,977	2,99,073
Allahabad Bank	2,48,576	2,52,714	2,37,038
Indian Bank	2,80,065	2,52,716	2,18,233

(Source – Various Balance Sheets and Annual Reports of Banks)

If we have a careful look at the above figures, we observe that by merging these banks, the anchor banks involved in the mergers will almost double their assets, employees and deposits by merging with the amalgamating banks. This will give them the necessary strength to increase their operations and profits.

CHALLENGES INVOLVED IN THE BANK MERGERS

There are many challenges involved in the merger & acquisition process of banks. We have identified some of the most common issues that arise during mergers in the Indian banking sector by examining the previous bank mergers. They are given below -

- **Technology**

  The primary criteria to determine which of the banks to merge was the core banking system (CBS). This was due to the fact that the change in the core banking system is a costly and time-consuming process. However, even after adjusting for this, the merger may pose many problems in the technology front. There are many problems involving the integration of accounts and the adoption of new technology integration. It may affect the implementation of government schemes and the direct benefit transfer

(DBT). It is expected that the banks will take 2-3 years to integrate their technology involving websites and mobile phone applications completely.

- **High Non-Performing Assets (NPAs)**

It is to be noted that though after the mergers the level of Non-Performing Assets (NPAs) may come down as a percentage of total assets, there is no change in the behaviour of the bankers who lent the loans which later turned to NPAs. In other words, it is similar to the popular idiom "You can't teach an old dog new tricks". Also, NPAs tend to increase in the immediate months following the bank merger due to the fact that the lack of follow up, one of the most crucial components for recovery of loans is not done as the merger disrupts the normal loan recovery process.

- **HR**

Björkman and Søderberg (2006) studied mergers & acquisitions in the financial services companies of Nordic countries extensively and put forth a hypothesis that the main human resource-related issues affecting the management of the merged entity which can seriously undermine the success or gains of a merger are conflicts in organizational culture, improper communication, employee compensation, lay-offs, loss of loyal clients and improper due diligence. The HR department was not consulted by the management in the decision-making process and they were not expected to play a crucial role in the merger & acquisition process after the merger had concluded. Shook and Roth (2011) also supports the above study. They said that the HR department is not usually involved when decisions are taken with regard to lay-offs, mergers & acquisitions. They stated that the importance of HR in the success of a merger makes it necessary for the HR managers to have a proactive role during the merger & acquisition process to make sure that the HR-related aspects are also in line with the desired outcomes of the merger & acquisition process.

Bhaskar (2009) had evaluated the role of Human Resources in the merger & Acquisition process of banks. He inferred that mergers would be successful if the Human resources are part of the process from the beginning and not after the merger had already concluded. He pointed out that employee compensation was one of the most complex problems before a bank merger, while organizational culture and organizational values are considered to be the most difficult problem after the merger.

Salame (2006) opined that downplaying the Human Resources issues caused unsuccessful mergers and that top management should invite the Human Resource department in the Merger & Acquisition process. Weber and Tarba (2012) analyzed cross-cultural management during all stages of M&A. They concluded that the high rate of M&A failures despite the increased activity of M&A might be due to the lack of harmonized activities during all stages of the mergers. In fact, a study done after the SBI's merger with its associates revealed that employees felt some unease relating to HR issues like different working styles, favoritism, behavioral issues with other employees, etc. This displeasure can be attributed to the fact that there was no significant role in HR departments at the inception of the merger & acquisition design.

- **Organizational culture**

  Any such large scale of integration does entail some short-term challenges such as managing cultural differences. In the context of mergers and acquisitions, the 'integration' perspective has been particularly dominant because these two coherent organizations have separate cultures.

  According to Rajan (2007), Organizations that do not consider the organizational cultural differences face many problems and the organization may not reap the benefits of a merger. Mohibullah (2009) had evaluated how organizational culture affects the merged entity. He found out the main reasons for a merger to be unsuccessful due to cultural conflicts are uncertainty/ ambiguity and cultural problems in the merged entity, no proper cultural integration due to faulty management and defective acculturation process. He thought that the organizations should have a mechanism to develop the communication channel from the top level of management to the bottom level of management for removing all the uncertainties regarding the integration process before the process of integration itself. However, Schein (1990) found out that this is not the case and in most of the mergers & acquisitions, the differences in organizational culture are not realized or acted upon until the merger has concluded. This leads to "cultural indigestion and the eventual divesture of units that cannot become culturally integrated."

- **Communication**

  Schweiger and DeNisi (1991) had put forth an idea which stated that the actual changes brought about by the merger is not the real reason for the stress in employees, rather it is the uncertainty which creates stress for the employees. This can be properly managed by communication in the merger process. Bhaskar (2009) highlighted the fact that banks may lose old customers and are unable to attract new customers as the merged entity is primarily focussed on gains in efficiency and downplayed the importance of employee communication. He posited that proactive communication and changes in organizational structure would lead to successful mergers. Appelbaum, Gandell, Yortis, Proper & Jobin (2000) had said that communication is necessary to ensure a smooth transition during the entire process of mergers & acquisitions. They opined that the communication process should provide clear and consistent facts or information to ensure that the employees are able to cope with the changes and the productivity of employees increases. The productivity gains will result in better financial performance and achieve the desired benefits of synergy and economies of scale.

- **Lay off, Morale & VRS**

The bank mergers can cause the closure of branches for "branch rationalization." This is done to avoid duplication of work as if there are two branches in the same locality, one of them should be closed. This may cause the management to feel that some of the employees are a "burden," and they should be removed from the job, i.e., downsizing. In India, the Voluntary Retirement Scheme (VRS) is usually provided to employees fulfilling a certain criterion in the case of bank mergers. VRS is a scheme allowing employees fulfilling a certain criterion to leave the organization while retaining some/ all of the benefits associated with superannuation. This method is prevalent in India since the law is against the direct layoff of unionized employees. The main reasons for VRS during bank mergers are dissatisfaction and uncertainty/ apprehension regarding future work environment.

Tiwari (2011) said that there might be closures of the branches, which can trigger downsizing. Park & Krishnan (2002) had reported mergers and acquisitions would fail if there is downsizing without carefully analysing the capacities and skills of employees. They said that the employees could be a source of competitive advantage and the lay-offs should be minimized to utilize the skills of the employees. Bowman and Singh (1993) had supported this by stating that firms should carefully evaluate the resources of each entity involved in the merger before any downsizing.

Thus, downsizing may lead to the loss of talented and skilled employees.

It is important to note that layoffs may even affect the remaining employees in the organization. Armstrong-Stassen M. (1998) had found that downsizing leads to less job satisfaction, less job involvement in the remaining employees of the organization and they were most likely to quit. This leads us to believe that morale is also affected when downsizing takes place in an organization.

"No employee of the associate banks would be asked to leave and branches will also not be eliminated after the merger." – Former SBI chairperson Arundhati Bhattacharya (During the SBI merger with its associates)

SBI had 17170 branches on 31st March 2017 (before the merger) and 6950 branches of its associates and Bhartiya Mahila Bank were added post the merger. However, SBI had a total of 22414 branches as on 31st March 2018 implying that nearly 1706 branches were closed due to the merger. SBI had offered VRS to 12500 employees of the associate banks who had completed 25 years of service. It was found that 4000 employees had opted for VRS and were discharged after the merger. It was also found that SBI had downsized nearly 10,584 employees within six months of the merger.

- **Customer satisfaction**

  George & Hegde (2004) had reported that employee motivation, attitude and satisfaction are important for customer satisfaction. If the employee himself is not happy, he may not serve the customer to the best of his ability. This has been supported by Schneider and Bowen (1985) who established a relationship between customers' attitudes about service and employees' perception of the human resource practices of the organization. Tiwari (2011) stated that the banks would increasingly focus on making more and more profits and they may not respond to the grievances of the clients. He also said that the work of the employees would become complicated and the employees who are burdened by heavy workload may not effectively respond to the customer. A study by Deloitte Centre for Banking Solutions revealed that customers mostly shifted to different banks after the merger within one month and the most common reasons for such a shift were emotional factors and competitive offers by other banks.

- **Too big to fail**

  It has been generally agreed by some economists and government authorities that there should be restrictions on the size of a bank to avoid the problem of "too big to fail bank." Too big to fail banks are those banks that are so large that their collapse may cause a financial crisis not only in the domestic economy but also in the global economy. This is due to the fact that the scope of operations of such banks is so great that if they fail, they can bring down the entire global financial system. Today, this risk has increased due to the close connectivity among world economies. Wheelock (2012) stated that if a large bank fails, it can cause substantial loss to other organizations and affect the working of the financial system. So, the government usually initiate action even before such a breakdown of too big to fail banks takes place. This can be explained by the widely known case of Lehman Brothers, an investment bank during the Global Financial Crisis of 2008. After it filed for bankruptcy, the stock market crashed and the stability required for overnight lending to keep businesses afloat was seriously affected. The entire world was affected by this.

CONCLUSION

In a fast-growing sector like banking, Mergers & Acquisitions is an invaluable tool, which, if used strategically after considering all the implications, will propel growth and prosperity not only in the domestic economy but also the global economy at large. Mergers should be designed in such a manner that the operational efficiency and financial performance improves. As presented above, these bank mergers can also cause some severe problems in implementation. To be able to completely reap the benefits of the mergers, all the stakeholders like the customers, employees, management should be satisfied. Other aspects like technology should be carefully considered before such mergers.

Unless the Government takes necessary steps to overcome the challenges posed by these mergers in an amicable manner, after taking inputs from all its stakeholders, these bank mergers cannot put India back on its former growth trajectory. The public sector banks will now have an increased risk appetite as the combined capital of the entities involved in the bank merger provides for a safety cushion, which will enable banks to take risks and efficiently disperse credit. This will help boost investment, which in turn will result in rising employment levels. This causes the much-needed surge in demand, propelling growth. Alternatively, these merged banks would be in a better position to implement various government schemes like the direct benefit transfers, which will put the money directly in the hands of the backward sections of the society. So, we can say that the merger of Public sector banks has come at the right moment, benefitting the Indian economy in the current economic slump. If implemented holistically, this can truly revive the country's economic growth.

The banks must change their structure to adopt the various changes brought forth by these mergers and ensure a smooth transition to the beginning of a new era in the Indian Banking sector.

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Ease of Doing Business: A Critical Analysis of Top Performing States in India

ABSTRACT

This paper analyses the common factors in the top five states of the Ease of Doing Business Rankings, 2017. Investment is one of the key drivers to the growth of Income (GDP) of any country or state. It is known that to attract investment, there should be a conducive environment for the incorporation of a business and their smooth functioning. Ease of Doing Business Index was used, by NITI Aayog, to evaluate the Indian states in this context. The rankings found the highest state with a score of 98.42, while the least score was as low as 0. What is it that the top scorers are doing differently? What sort of policies do the "achiever" states adopt so as to achieve this feat? Through our analytical study, we endeavor to present such common factors that led the 5 states to top the index.

KEYWORDS:

Ease of Doing Business Index, Industrial Policy, Industrial Infrastructure

INTRODUCTION

India ranked 130 in the World Bank's Ease of Doing Business (EoDB) Rankings in 2017 and subsequently jumped up to 77 in 2019. However, this may not be entirely accurate because WB considers only Delhi and Mumbai while assessing India. But India is not only Delhi and Mumbai. In fact, there are states which outperformed these cities and created a much better ecosystem for businesses to burgeon. If one were to assess India by considering the cities of Ahmedabad and Hyderabad, India would rank far higher in the WB's Doing Business Index. This is evident from the annual reports published by NITI Aayog. EoDB Index for the Indian states published jointly by NITI Aayog and World Bank in 2017 saw Andhra Pradesh (AP), Telangana, Haryana, Jharkhand and Gujarat in top 5 spots.

For this paper we have considered 5 (of the 10) indicators used by the World Bank for designing EoDB index. The reason for the same is that these 5 indicators are in the purview of the states whereas the other five broadly come under the jurisdiction of the Central Government or under the concurrent list (which are taxes, protecting minority investors, trading across borders, enforcing contracts and resolving conflicts). We will discuss the five factors in detail below. We have taken 4 out of the top 5 states, as ranked by NITI Aayog report, for our study. The five parameters are discussed in the context of the four states. In the end, we discuss Jharkhand and assess why it is a special case.

1. STARTING A BUSINESS

The World Bank defines this indicator as "the time, cost, paid-in minimum capital and number of procedures to get a local limited liability company up and running." This index looks at the procedures an enterprise has to go through: licenses, approvals, permissions, verifications and inspections from officials etc. Apart from complying with the above, there are other factors that are common in the 5 states that contributed to their top ranks.

A. Special Economic Zones:

SEZs are notified areas, by central or state governments, with laws different from other areas. SEZs are intended to function as economic growth engines backed by quality infrastructure and alluring fiscal packages. Some of the main objectives of SEZs are to attract foreign investments and generate additional economic activity. Incentives like 100% Income Tax exemption on export income for SEZ units for the first 5 years, 50% for next 5 years and 50% of the ploughed back export profit for next 5 years, thereafter, are given to companies to set up their businesses in SEZs. Therefore, SEZs promote new business and, in a way, contribute towards ease of doing business.

Table 1: presents the number of Special Economic Zones in the states under consideration

Table 1: Number of Special Economic Zones, 2017

Number of SEZs in each state				
State	Formal Approvals	Notified SEZs	Exporting SEZs*	Total
Andhra Pradesh	29	25	20	74
Gujarat	28	24	19	71
Haryana	24	20	6	50
Telangana	64	57	30	151

*(*Central Govt. + State Govt./Pvt. SEZs + notified SEZs under the SEZ Act, 2005)*

Source: http://www.sezindia.nic.in/upload/uploadfiles/files/StatewiseDistribution-SEZ.pdf

Table 1 reveals that the number of SEZs in the top performing states is very high. All the states top the nation's list of number of SEZs. Telangana with 151 total SEZs tops while AP and Gujarat follow. While the national average of the total number of SEZs is 34.5, all the four states beat the national average. This shows that there is an edge for these states over others to attract new businesses.

B. Policy Incentives:

One can notice a sense of competition among the Indian states in terms of creating a friendly ecosystem for starting a new business. In this context, we can see our four states ahead of others and have brought policies for various industries for the commencement of business. Though there are incentives germane to different kinds of industries in each state, there are such incentives one can find common in the four states. We present here the common factors, which we think are important, in the four states.

I. SINGLE WINDOW CLEARANCES

All the states have set up district level and state level committees to scrutinize the applications received for starting a business and grant permission for the same. The key feature of this mechanism is that all the necessary approvals, as mandated by laws in the respective states, shall be granted under one roof. This drastically reduces the time taken for a business to incorporate, thus eliminating the fear of bureaucratic hurdles and nudging the entrepreneurs to set up business.

The following is the time period prescribed in the states for granting the approvals:

Table 2: Maximum Number of Days for all Approvals from Government

State	Time taken (in days)
Andhra Pradesh	21
Gujarat	90
Haryana	75
Telangana	30

The law in Telangana and AP allow for the self-certification of the documents by the applicants and states that the approvals are deemed to be given if the deadline is failed to be met by the authorities. In Telangana, penalties are also imposed on the authorities if they delay in granting approvals. Haryana also has a provision pertaining to deemed approvals.

II. SEED FUND

Seed fund can be understood as an initial investment which has an objective to support a business until it can stand on its own legs. So as to encourage talent and promote entrepreneurship, all four states have a policy of a seed fund in place. Broadly, this fund is given to assist the potential entrepreneurs for the validation of an idea, carrying out research, travelling expenses, marketing of the idea, initial activity to start business, etc.

In AP a one-time grant of INR 5,00,000 per start-up (total budget for the same is INR 2 crore) is provided. There is also a policy whereby 15% of machinery cost if financed under seed capital assistance for first generation entrepreneurs. Gujarat has a policy of granting 10,000 per month as sustenance allowance for the innovators and mentorship guidance. An amount up to INR 10 lakhs is given towards raw materials and other costs and the equivalent amount towards marketing purposes. In Haryana a grant up to INR 3 Lakhs is given per start-up. Telangana has a seed fund of INR 250 crores under T SEED for the same. T SEED can also be used for funding innovative college projects and research discoveries.

Whereas, to obtain this funding the start-ups are routed through incubators in Haryana. Telangana, however, does not require the seed stage start-ups to register with an incubator.

A first-of-its-kind initiative can be found in Telangana which is called the 'Phoenix Fund.' It is set up with an aim to identify and attract entrepreneurs who have attempted (and failed, but met with some degree of success) at least one project previously.

III. LAND BANKS

Land Banks are detailed accounts of the government land available for a business to set up its business. This maintenance of the records of the land enables the entrepreneurs to compare and contrast different areas where the land is available and apply to the government for the allotment of the same.

In all the four states, the Industrial Infrastructure Corporations are entrusted with the responsibility to maintain the land banks. Andhra Pradesh has the biggest land bank in India with a total area of 41,495.86 acres. The Haryana government has decided that it will buy the land from farmers who are willing to sell and maintain the land banks.

IV. ADDITIONAL BENEFITS FOR BACKWARD CLASSES

All the states have provisions for additional benefits for the entrepreneurs from SC and ST classes. State-wise the provisions are as follows:

AP gives INR 1.5 (INR 1 for others) reimbursement on fixed power cost per unit and an investment subsidy of 35% on fixed capital investment (with a cap of INR 50 lakh) for a period of 5 years for SC ST entrepreneurs. Land cost rebate of 33.3% up to 10 lakhs is provided.

Telangana state has announced a policy under the name of TS-PRIDE for SC and ST entrepreneurs. The benefits extended are the payment of Margin Money on behalf of SCs and STs by the government; land cost rebate of 33.3% up to 10 lakhs is provided; interest subsidies for service sector (except transport sector) units etc.

Gujarat has a policy to provide additional benefits for the SC and ST entrepreneurs. However, the rules are yet to be framed. On the other hand, Haryana does not have a policy as such, but disbursed loans for SC, ST entrepreneurs totaling to INR 37.91 crores in September 2016.

V. REIMBURSEMENTS

Reimbursements are discussed in 2 categories: Stamp Duty and Fixed Capital Investment.

Stamp Duty is a tax that is paid on the purchase of a property. AP, Telangana and Haryana provide a reimbursement of 100% of stamp duty on purchase/lease of land. In Gujarat, however, a 100% reimbursement is given to a developer of an industrial park and 50% to an individual who purchases land in the industrial parks.

Fixed capital investment (FCI) is the investment made on long-term assets. It consists of tangible assets like Buildings, Plant & Machinery and intangible assets like Intellectual property etc. Fixed Capital investment is like a fixed cost that has to be incurred irrespective of the happening of production. So as to reduce this burden on the business, the four states have a policy of reimbursing the fixed capital investment.

AP gives an FCI reimbursement of 15% up to INR 20 lakhs. In Gujarat 70% fixed capital investment is considered for reimbursement. Haryana government offers a 50% FCI reimbursement, excluding land cost, subject to a cap of INR 50 lakhs (for private enterprises). Telangana offers a reimbursement of 15% up to INR 20 lakhs under the fixed capital investment made by the entrepreneurs.

OTHERS:

Apart from the above commonalities there are additional key features unique to a single state or in practice in two states. Such singularities are discussed here:

1. The law in Telangana provides that the applicants need not make a single visit to any office for getting the required approvals. The process is 100% online and the approvals can be downloaded online.

2. The Government of Telangana established T-HUB, an incubator for the purpose of assisting and empowering budding entrepreneurs by providing them with the required knowledge and an ecosystem for them to thrive.

3. Haryana has a policy in place to attract Persons of Indian Origin/ Non-resident Indian investors.

4. Haryana's policy allows for the developers of the industrial estates to supply electricity in the industrial parks, thus providing incentives for infrastructure creation.

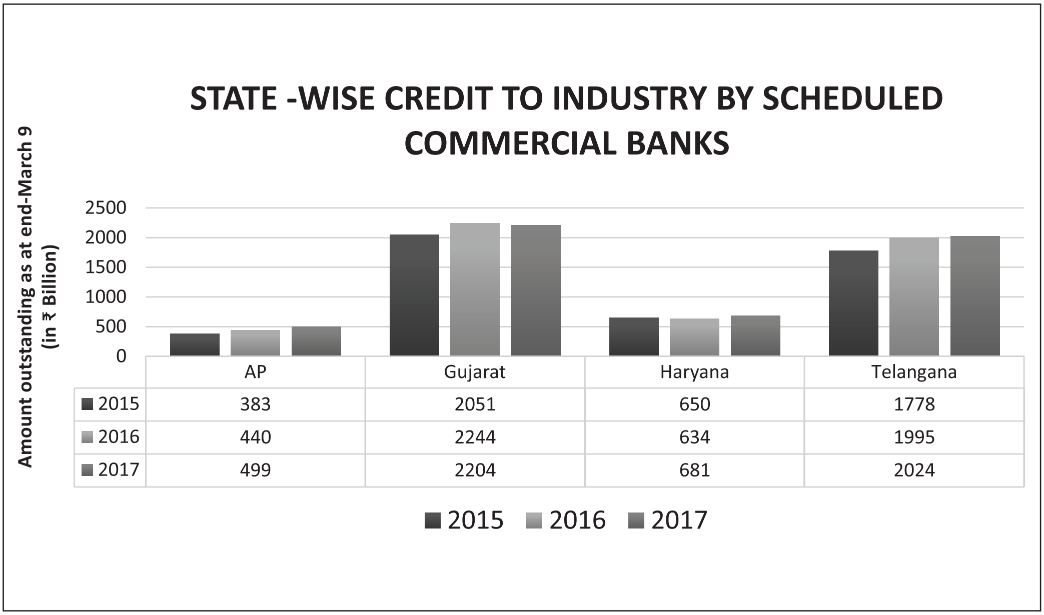
5. Gujarat has a policy in place wherein need-based financial assistance is provided for strengthening Environment Compliances by the industries.

6. The Government of Andhra Pradesh provides a subsidy of 25% for sustainable green measures on the total fixed capital investment with a limit of INR 50 crores. Measures include: Waste Water Treatment, Green Buildings, Use of renewable source of Power etc.

C. INDUSTRIAL CREDIT

Credit is the lifeblood of any business and thus an indispensable part of the same. No business can go forward without sufficient capital in hand. When we look at this from a bank's perspective, the more the credit it provides, the more lucrative the business is. So, it can be inferred that an increase in the disbursed credit, on a year-on-year basis, implies that the environment in the state is conducive for doing business.

Graph 1: Credit Disbursed to Industry State-Wise



Graph 1 shows a positive trend in the growth of credit from 2015 to 2016 in the states of AP, Gujarat and Telangana. From 2016 to 2017 the states AP, Haryana and Telangana recorded a positive growth in the credit disbursed. Though there is a slight decline in Haryana at the beginning, it has maintained a positive trend overall.

D. SCHEDULED COMMERCIAL BANKS

Banks are a part of financial infrastructure. The higher number of bank branches signify smoother and quicker financial transactions. The more the number of banks, the more will be the possibility for an entrepreneur to get credit for commencement of business. The greater number of bank branches also point out that the entrepreneurs have greater choices to compare and contrast the interest rates prevailing across various banks and approach the bank they think is best.

Table 3: Number of Scheduled Commercial Banks, 2016

States	Scheduled Commercial Banks (as at end March-2016)	Bank Branches per 1,00,000 people
Andhra Pradesh	6567	13.21
Gujarat	7432	11.27
Haryana	4567	21.61
Telangana	4918	13.97

Source:https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/125TABLEA8032ECF083746AEA41FCDF001ABAC2E.PDF

Table 3 shows the number of bank branches in each state. When one considers the geographical area and the population of the respective states, the number in each state is significant. It is to be noted that the national average of banks per 1,00,000 people is 14.06.

2. CONSTRUCTION AND OTHER PERMITS

This factor can be understood as the procedures, time and cost to build a factory/building- including obtaining necessary permits, submitting required documents and obtaining utility connections as well. This includes obtaining factory plan approval, registering a firm, getting water and electricity connections etc. The lesser the number of days required to obtain all the permissions, the greater time it can devote in making other important decisions.

Table 4: Number of Days to get Permissions for Different Factors

S. No	Particulars	AP	Gujarat	Haryana	Telangana
1.	Factory (And Building) Plan Approval	07	30	45	07
2.	Firm Registration	03	01	07	07
3.	Vat Registration	03	30	N/A	03
4.	Water Connection	21	60	12	14
5.	Change Of Land Use	21	45	45	30
6.	Fire Noc	15	07	60	14
7.	Electricity Connection	07	15	45	14

Table 3 reveals that the time taken to get all the permissions is much lesser in AP and Telangana as compared to Gujarat and Haryana. One plausible explanation for the greater time taken in Gujarat is that there were no amendments made to the relevant acts, since the new industrial policy was announced, to trim the time taken to grant various approvals.

The cost of land occupies lion share in the total fixed cost a business has to incur and this more importance and thought is given to this factor before commencing business. The cost of industrial land per square meter in the four states is lesser than the national average. The national average is at INR 12,530 and the cost in the states is: AP INR 2,590; Gujarat INR 6,650, Haryana INR 3,350 (approx.) and Telangana INR 9,030. This shows that the prices of land are less than many of the other states in India and beneficial to a business.

3. ELECTRICITY

The importance of electricity can be understood when one takes note of the analogy drawn between the per-capita consumption of electricity and the development of a nation. It is widely accepted that these two factors are directly proportional. Electricity has direct bearing on the economy of a country. It is no exaggeration to say that electricity breathes life into the entrepreneurial activities and manufacturing industries. Thus, electricity occupies place in the list of factors a business person considers before setting up a new business. When we talk about electricity, two factors are worth considering: cost of electricity and its share in total available electricity.

The table below shows the total of electricity sold in the states and the consumption of electricity by the industrial sector in each state.

Table 5: Availability and Consumption in Gigawatt-hour (GWh)

States	2016-17		
	Total Electricity Sold	Industrial Consumption	Industrial Consumption as a % of total electric energy sales
Andhra Pradesh	51,789	19,755.54	38.14
Gujarat	1,12,741	75,507.58	66.97
Haryana	35,557	11,047.92	31.06
Telangana	47,593	13,595.78	28.57

Source: https://powermin.nic.in/sites/default/files/uploads/LS09082018_Eng.pdf

Analysis from Table 4 shows that at least 30% of electricity sold in each state is to industries. The share of electricity consumption approximately is 67% of total electricity sold in Gujarat, 38% in AP, 31% in Haryana and 29% in Telangana.

Coming to the second factor, per Kilowatt-hour cost of electricity in the four states is more or less the same. In AP it is INR 5, in Gujarat INR 5, Haryana INR 5.7 and INR 6 in Telangana. All these states have prices that are lower than the national average which is, approximately, INR 7 per kWh. It is also to be noted that there are electricity subsidies being provided on this cost for the industries by state governments. This shows the cheaper availability of electricity in the four states and plays a role in attracting businesses into the state(s).

4. REGISTRATION OF PROPERTY

The World Bank defines this indicator as "steps, time, and cost involved in registering a property" Registering a property is as cumbersome a process as is the setting up of a new business. So, when one aims to ease the process of doing business it is imperative that they look at this factor: registration of property. It is quite often that a business gets to register a property be it by purchase, expansion, diversification etc. Therefore, to keep the process short it is necessary that the essentials of the process are crisp and to reduce the burden of fixed cost, it should be less.

The lesser the number of documents required to register a property the lesser the time it takes to register a property and the easier the process becomes for the business. The number of documents required to register a property in the four states are very minimal and close to 10. In AP this figure is 05 and Haryana is 08. Gujarat and Telangana, respectively, require 13 and 09 documents to be produced for registering a property.

Stamp duty on Sale of Immovable property, which is measured as a percentage of the asset value, is added to the fixed cost of a property. The amount saved is the amount earned. Therefore, from a business standpoint the lesser this factor is the beneficial it is to a business. This stamp duty is 5% each in Telangana and Andhra Pradesh and 4.9% in Gujarat. In Urban Haryana the stamp duty is 7% whereas in rural Haryana it is 5%. The registration fee is common across all the states at 0.5% of the asset value.

JHARKHAND: A SPECIAL CASE

Jharkhand consistently remained an anomaly throughout the analysis of the factors that are mentioned above. The state's performance was, more or less, poor in the aforementioned factors. This is evident from four facts. First, the number of SEZs in the state is 2, while the national average is 34.5. Second, the total electricity sold is 25,481 GWh which is far less than the other four states. Third, the total credit disbursed to industries is INR 150 Billion, which is minuscule when compared to the colossal amounts disbursed in the other states. Fourth is the number of scheduled Commercial Banks which is 2840. In this aspect, other states far outnumber Jharkhand by large difference. This points to the lack of sufficient infrastructure in the state. Yet, in the 2017 EoDB rankings Jharkhand ranked 3rd after AP and Telangana. The reason for this aberration is: Labour reforms.

I. LABOUR REFORMS

The Government of Jharkhand has reformed the labour laws of the state and brought in a new set of rules and regulations for the businesses to comply as far as the labourers' safety, workplace conditions, payment of minimum wages etc. are concerned. One of the most important reforms to talk about is the issuing of ID cards for construction workers and social security identity cards for various schemes for unauthorized sector workers. This enables the government to maintain a comprehensive record of all the workers and makes the management of the workers easy. Another important transformation is the paring down of the time limit for a worker to appeal with the labour court for being removed from the work to 3 months from 3 years. The government also brought a Self-certification system for labour related compliance in the state. It has also introduced a single integrated return for all the applicable returns of the 14 labour laws. A simplified online return pro forma for filing the same has been brought. It is known that an enterprise has to maintain different types of labour registers and record pertaining particulars in them. Jharkhand has found a solution to this cumbersome process by starting an online register wherein all the information is recorded and maintained as proof by the enterprise. The industries categorized as low-risk and file the labour returns are exempted from inspections. Whereas, it is mandated that only 20% of the enterprises registered will be inspected in a year and once inspected the same enterprise cannot be inspected otherwise for five years. The Government also publishes exhaustive lists of enterprises that will be inspected in the upcoming month. It is also mandated that the same inspector cannot inspect a unit consecutively. It has also been made mandatory for the enterprises to obtain licenses for engaging contract labour to work. One more reform brought is the minimum wages for contract and unorganized sector workers are published on a monthly basis. It is also worth noting that the minimum daily wage for unskilled labourers in Jharkhand with effect from April, 2019 is INR 288.74 while the national average is INR 253.4.

While the success of Jharkhand is largely attributed to labour reforms, there are other factors which also contributed to the same. The factors are discussed hereunder:

II. PERMISSIONS, INCENTIVES AND PERFORMANCE

The state has a single window online system in place to grant industrial approvals and grievance redressal. It also has a combined application form for filing for approvals with the authorities. The number of days required to get a water connection in the state is 30 days while the time taken to get an electricity connection is 15 days. For the payment of all state taxes every enterprise is allotted with a unique ID, easing the process of paying and keeping an account of taxes.

The state also grants fiscal incentives for the entrepreneurs to commence their business in the state. Mega industries are exempted from electricity duty for a period of 5 years. A one-time recruitment incentive up to INR 2.5 lakhs, up to INR 25 lakhs, is given to those IT units that employ 50 workers. A subsidy of 20% on fixed capital investment (selective machinery), up to INR 20 crores, is given to industries incorporating business in the state. An additional 5% subsidy is given to SC, ST, women and physically challenged entrepreneurs. 100% stamp duty exemption is given if the land is bought directly from the raiyats rather than in an industrial park. 50%, up to INR 10 lakh, financial assistance for patent registration is also given.

CONCLUSION:

Better performance in ease of doing business is crucial for a state for attracting investments. One can climb up the index when a business-friendly ecosystem is created in the state. This can only be done through a policy in place that caters the needs of a business and a commitment from the government of the day. A policy and the set of rules that back the policy give a sense of confidence to a person with a will to start a new business and drive them in the direction of doing the same, without second thoughts. Our objective throughout the paper has been to find out the distinctive features of the states that had performed extraordinarily in the ease of doing business index and thereby formulate a recommendation, of sorts, that could act as a benchmark for other Indian states to follow.

By and large, in our analysis, we find there are common factors among the states under consideration that have led the states to improve in the EoDB index and subsequently top the index. First and, perhaps, foremost is the practice of Single Window Clearance System. This system facilitates the businesses to obtain all the necessary permissions in a hassle-free manner and saving time which otherwise would have been wasted in dealing with the bureaucratic spiral. It is worth noting about a practice which the state of Telangana has mastered: Self-Certification system. This is a boon to the businesses because it avoids all the inspections that were once mandatory for getting any sort of approval. The system also helps in avoiding the practice of corruption. As mentioned above, commitment on the part of the government also plays a role in defining the outlook of a business. In this context, we can talk about the Seed Fund that every state has in place, which makes a promise to the budding entrepreneurs that the state would back them and they can work with the pressure off their shoulders. All the states have separate policy for the backward classes, whereby additional rebates and reimbursements are extended. AP and Telangana are doing commendable work in this regard.

Apart from the commonalities, certain states have some unique practices in place. Haryana, for example, has a separate policy for NRIs and PIOs. Whereas, Telangana offers a system which doesn't require any face-to-face contact between the applicant and the authorities. AP and Gujarat are promoting sustainable green practices by giving incentives for those that follow the criteria as laid-out by the government.

Infrastructure is one more important factor for the states to attract businesses. In this regard, SEZs are key tools for any state government. All our four states have one of the highest numbers of SEZs in the country. Telangana has the highest with (all included) 151 SEZs. All the other three states also have a considerable number. It is also important to more bank branches so as to ease the process of credit disbursal. Once again, our states are among the top ones in the country. Electricity is one more crucial infrastructural aspect. Lower cost of electricity is what businesses look for and the price of electricity in all four states is lower than the national average.

This leads us to the conclusion that a set has to have some factors for the businesses to be attracted. Single Window System, hassle-free system of business approvals, fiscal incentives in the form of subsidies and reimbursements, quality infrastructure in the form of number of SEZs; policies/measures that reduce the fixed costs of a business and more importantly the commitment from a government to deliver are needed for a state to successfully emerge as one with a conducive ecosystem for a business to exist in and to be the 'achiever' in the Ease of Doing Business. It is, therefore, advisable that the rest of the states follow this path; primarily Single Window System and paring down the number of documents needed to be submitted for approval, which is a good place to start.

END NOTES

1. All the data presented pertains to 2015-16 and/or 2016-17.
2. Dollar to rupee conversion rate is USD 1 = INR 70.
3. The number of "in-principle SEZs" is not considered.
4. The average cost of electricity in the country is calculated by considering the actual cost of electricity in all the states.
5. The average minimum daily wage in the country is calculated by taking the minimum wages existing in the individual states.

6. Pertaining to construction permits, the highest number is taken for consideration when a range was found instead of a discrete time limit.

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Reviving the Handicrafts of India

ABSTRACT

India is a country known for its culture, values and the diversity that it possess since the world's oldest civilisation till today. But over the years, with the industrialization, globalisation and technological advancement the handcrafted products of handicraft industry has undergone a lot of hardships and struggles which has ultimately led to the depletion of many crafts where preserving and supporting the culturally rich art forms is the only way left for the revival of the handicrafts industry.

This paper depicts the journey of handicrafts, right from its origin to the present state, when steps are being undertaken at every level to revive this industry by understanding the root problems and creating an impactful and sustaining solution to empower and support the traditional artisans to continue with their traditional family lineage that India is known for.

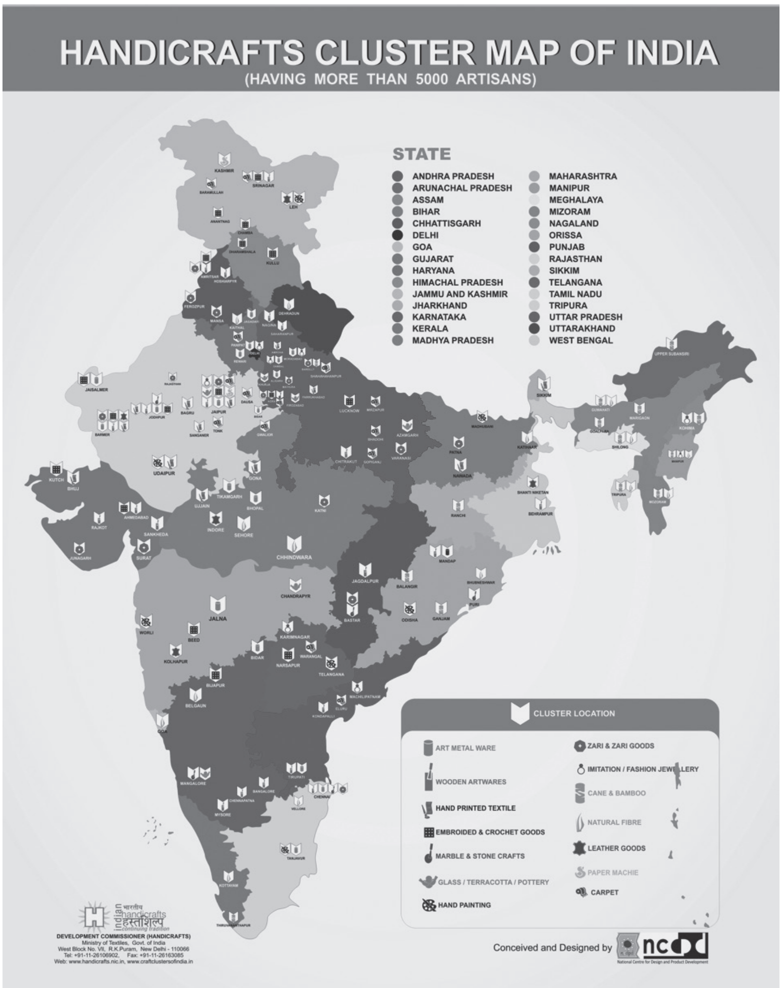
KEYWORDS:

Indian Handicrafts, Artisans, Culture, Traditions, Handcrafted

INTRODUCTION

Handicrafts, as the name suggests, refers to the art of crafting products by hand. It is a very ancient practice of creating culturally rich products to be used in day to day life and for decoration. These crafts carry a magnetic appeal of the rich

Indian culture that promises exclusivity, style and dignity. It is an art form which translates the ideas, skills and values of the artisan into the products crafted by hands. The forms and types of handicrafts produced in one part of the country differ from others due to cultural diversity and preferences of the people in different regions of India. This broadens the scope of handicrafts which includes thousands of art forms altogether. But to ease out the identification of every art form, Development of Commissioner (Handicrafts) under Ministry of Textiles, Government of India has categorized all types of handicrafts into 5 major themes which are as follows:



The map depicts the proportion of traditional artisans spread across India and the art form they practise through cluster location.

Source: Development Commissions (Handicrafts), Ministry of Textiles, India

- **Needle Work**

Needlework comprises of all types of hand embroidery performed on cloth or any other material. It includes basic sewing used to stitch clothes to complex hand embroidery stitches done to enhance the look of any apparel. In broader terms, it includes every art form which makes use of needle and thread to prepare the finished product.

- **Tribal Crafts**

This includes all types of art forms produced in the less developed regions and especially in the northeastern part of India. These craft forms are entirely based on local plant ecosystems and depict the rituals, values, food habits and their way of living. It mainly includes basket weaving, cane and bamboo products, tribal jewellery and items made up of raw natural resources which gives them the raw and natural look and makes them all the more unique and close to nature.

- **Fiber and Eco-Friendly Crafts**

Times have changed and people have become more aware and sensitive towards the environment. This behavioural change on a large scale has given birth to this new category of theme crafts, also known as "Fiber and Eco-Friendly Crafts". Although most of the Indian Handicrafts are made by hand from natural resources which automatically makes them eco-friendly. But now with increased awareness towards environment, more emphasis is towards creating all types of products in an eco-friendly and natural way as possible. So this category includes 100% raw and naturally produced goods.

- **Fashion Accessories**

The fashion industry is one of the indispensable parts of everyday lifestyle across generations. It is a symbol of art and culture which showcases the way of living of individuals. Not just that, fashion accessories play a key role in making fashion a necessity for everyone. It includes accessories like handbags, shoes and earrings which enhaces and completes the overall fashionable look.

- **Festive Decorations**

Decorations are all about enhancing the beauty of our homes, offices and to polish our personalities. It defines the systematic, disciplined and well-synchronized way of living with the help of accessories which enhances the overall environment and has utility.

ORIGIN

Handicrafts have been one of the most ancient and traditional art forms that still exists and is appreciated across the world. Especially when we talk in the context of India and Indian handicrafts, these are the oldest and are the most celebrated artisanal crafts even today.

The origin and journey of handicrafts can be broadly classified into Pre-British Period, British Period and Post Independence Period. During the Pre-British period also known as the era of kings and their kingdoms who had an immense passion for handcrafted products and gave a lot of importance to them by appreciating the artists with gold, silver and precious pearls. This skill possessed by the artisans gave birth to the term what we use today, Handicrafts.

Indian handicrafts have their origin in the oldest civilizations of the world, also known as the Indus Valley Civilization which we all have come across in our history books. This civilization has represented highly technical and culturally rich craft forms like stone carving, pottery and jewellery weaving which were handcrafted to satisfy the local needs and were also traded with other countries through sea route. Since then these crafts were widely appreciated and can be seen even today. Even in the holy Vedas, we can find numerous references of artisans practising pottery, weaving, wood and metal carving which symbolizes the importance and the need for these craft forms. In the Mauryan era, stupas were built in India which also include the famous Sanchi Stupa situated in Madhya Pradesh. These stupas represented the stone carving and female figures decorated with jewellery which is the source of inspiration to many contemporary jewellers even today. In the medical period, handicrafts flourished very well and exporting hand made Indian products gained a lot of momentum. During the Mughal Empire also handicrafts were appreciated like a treasure and Mughal also introduced the artform of carpet weaving, glass engraving and inlay work to India.

During the British period, these handicrafts were criticized and many hurdles were created to hamper these art forms. As a result, artisans were forced to sell their products at 15-40% lower than the market price which slowed down the growth of this sector.

But after the independence of India, the democratic government took crucial decisions to improve the status of the handicraft industry and stressed on growth opportunities. As a result, All India Handicrafts Board was established in 1952 to cater to the problems of the handicrafts industry and devise solutions to solve it. The Handicrafts and Handloom Export Cooperation of India Ltd were set up in 1958 to promote exports and a Crafts Museum was also opened in Delhi in 1953 to develop the interest of people towards Indian handmade products and to promote their use. In this way, the handicrafts industry has roadmap this journey with the support of the Indian government and the belief of people from India and abroad which boosts the confidence of the artisans and kept them going till today.

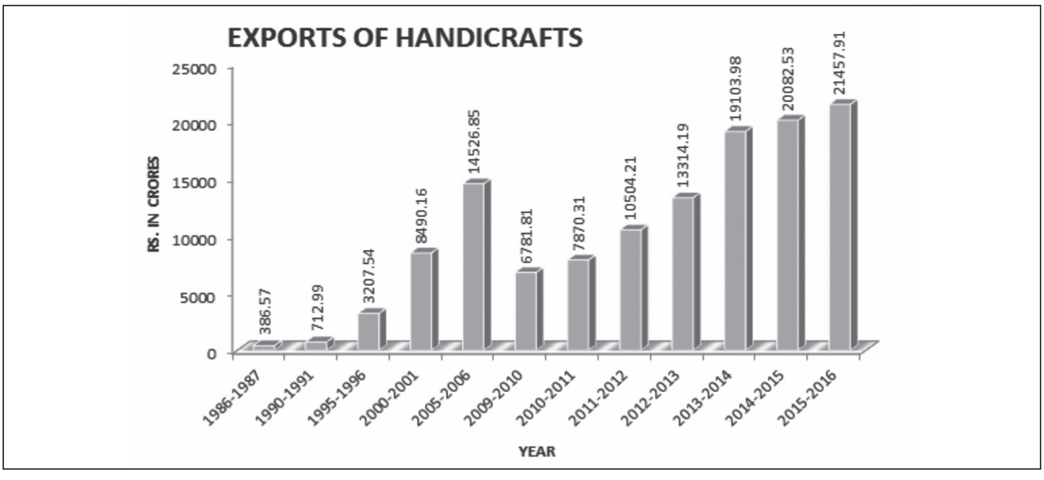
SIGNIFICANCE

Handicraft industry plays a very important role in preserving the traditional cultural values of India. It has very deep cultural significance and plays a very crucial role in the economic development of India as well. It stands out as one of the best options for low capital investments with a high level of value addition and increasing potential for exports and foreign exchange earnings for India.

It is the largest contributor to the economy after agriculture in terms of employment and job opportunities, particularly to women in both urban and rural areas. 50% of total employment in this sector is by women, which highlights the contribution of the handicrafts industry towards empowering women.

However, as per the reports of ASSOCHAM, the textile and handicrafts industry in India employs around 7 million people both directly and indirectly taken together, with a majority of participation by women and weaker sections of the society. It is also the major source of income for the rural population with the market size of $150 billion as per the 2017 report and is expected to grow till $250 billion in the years to come.

The graph represents the increase in exports of handicrafts from 2009-10 till 2015-16 which highlights the significance of Indian handicrafts across the world.



Source: Export Promotion Council for Handicrafts (EPCH)

PROBLEMS

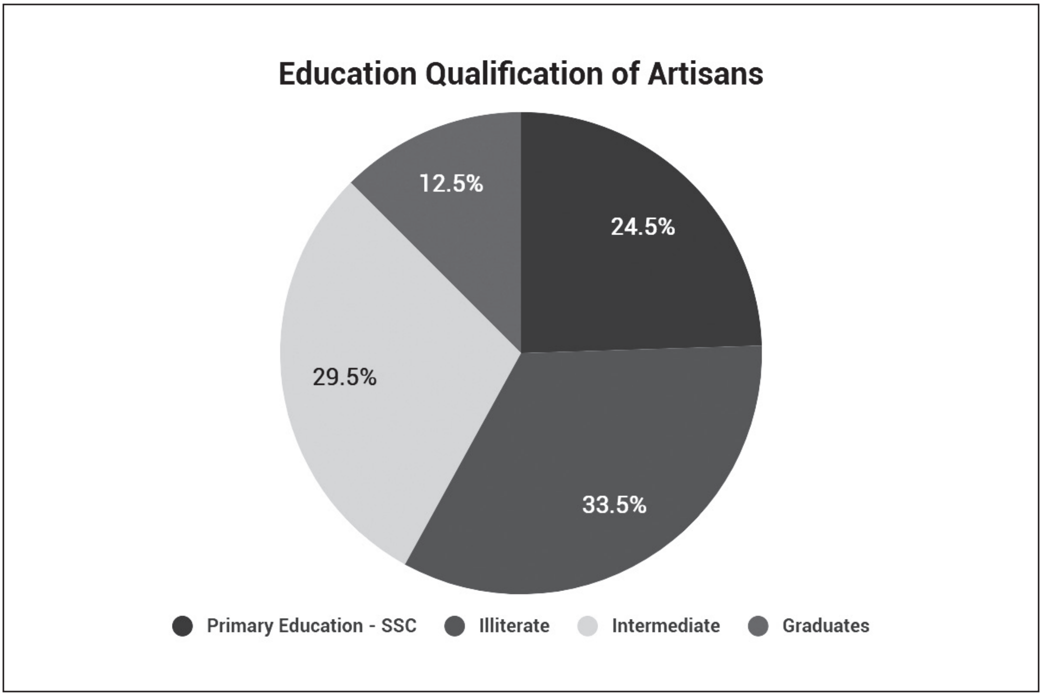
Handicrafts industry being home to all types of handcrafted art forms has started losing its presence as some of its art forms like pottery and string puppetry are at the verge of extinction. With the advancement of technology and globalization, most of the small and medium artisans and handicraft workers are hit badly and many of them have also lost their livelihood.

To understand the reason behind such adverse conditions, the following problems were highlighted:

Problems faced by artisans in the handicrafts industry.
Source: Economic Times

- **Lack of Education**

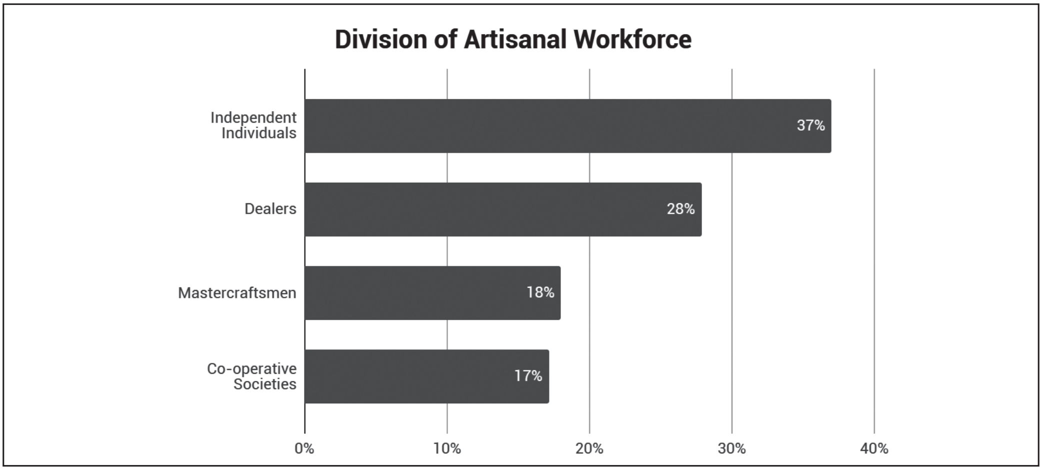
  Education plays a very important role in shaping the decent life of every individual and when it comes to artisans and handicraft workers, it becomes all the more important. As per the UNESCO survey report, 33.5% of the artisans in India are still illiterate and out of 66.5% literate population, 24.5% are between primary education to SSC, 29.5% intermediate and the remaining 12.5% are graduates. This shows that only 42% of artisans are capable enough to understand the changing trends and make the best use of available data to improve their business. As the majority of them comes from a rural background and lacks knowledge, education and vocational training is the only source to develop them in making a well-informed decision in the context of their art form in future.



This diagram shows the literacy levels and education qualifications of traditional artisans.

- **Non-availability of resources**

  Handicrafts being closely associated with nature and free resources sometimes pose huge problems for the artisans due to non-availability of these resources in their nearby areas. This issue has become all the more severe with increasing demand for good quality raw materials by organized and big handicrafts business houses which ultimately force the small and traditional artisans to buy raw materials at a very high cost from middlemen and traders. Also, 37% of the artisanal community works as independent units while 27.86% work under dealers, 18% are dependent on master craftsmen and the remaining 17.14% are working under cooperative societies. This highlights the fact that almost two-thirds of artisans across India are dependent for raw materials and other supplies for production are exploited the most.



Artisans working under dealers and mastercraftsmen are completely dependent on them for raw material and supplies.

- **Poor production techniques**

  Handicrafts industry has its base in rural India with little or no accessibility to the latest and improved technologies. However, with the help of government schemes and initiatives, 97% of artisans now have access to electricity out of which 34% still face regular power cuts in a day which hampers their work. This is one of the most crucial problems because, in today's world of digital revolution when artificial intelligence and robotic technology has become the important part of our daily life, poor technology and insufficient electricity hampers their productivity and efficiency.

- **Traditional and outdated designs**

  The patterns, design and style of production have not changed much over the years in the handcraft industry and is the major reason for their setback. It is high time that these artisans realize the importance of dynamism and adapt themselves to sustain for a long period in the market. They must understand the need to bring changes in the style and designs of handicraft products to keep it trending as per the latest tastes and preferences.

- **Lack of awareness**

  Around 67% of MSME's do not have online presences over the internet which is the root cause of their unawareness. This inability to stay aware and informed with the new and latest information prevents their chance to make the best use of policy changes and welfare schemes introduced by the government and other big organizations working towards promotion and development of handicraft sector and to uplift the true artists.

- **Domination by middlemen**

  Suffering and dominance by the middlemen is an age-long practise in India and has not evolved much with time. However, we cannot ignore their importance as they channelise the business from manufacturers to end-use consumers. But in the majority of the cases, where only 42% of artisans are 12th pass or graduate, prevents them to stay well informed about the market and its practices and middlemen tend to exploit them the most.

- **No connection with prospective customers**

  Only 41% of artisans have an online presence in terms of a business website or an account on social media channels. This highlights the fact that it is a barrier for 59% artisans even today who are uneducated and less informed. It has a very negative impact on their businesses as they are unaware of the needs and wants of their customers and ultimately creates products which are not suitable for them. So in the globalised world of today, it is essential that every artisan stay connected to their target audiences, understand their perception and creates products as per their needs to satisfy them and sustain in the market for a long run.

- **Lack of business acumen**

  Most of the traditional artisans have excellent skills in their respective art forms but they lack the skills to value their art. This represents the true picture that though highly proficient in their respective art form yet lack of business acumen can exploit the artisans in true sense. Therefore every artisan must understand the price strategy and the intensity of competition before setting any value to their art forms. Because if they as producers are unable to value their art appropriately, there are several opportunists in the market, ready to make the best at their cost. And especially in India where only 37% of artisans work independently, rest 63% of the artist despite having excellent skills are working as an employee under master craftsmen due to inability to value their own art form.

- **Financial problems**

  Money is an important resource to start a business and lead a good lifestyle. But it is the most crucial problem faced by almost every rural and traditional artist who has the best of skills but lacks monetary support to showcase their talent and skills to upscale their businesses to carry their traditional lineage forward. As per the study, 48% of artisans working under dealers directly faced the problem of irregular payment and 20% under the master craftsmen. This shows that more than half of the artisanal community lack opportunities to earn even a basic livelihood which can satisfy their families and forces them to send their upcoming generations to cities for a better source of income.

These were some of the most relevant and long-lasting problems faced by these artisans which acted as a roadblock towards their successful journey.

SOLUTION

It is rightly said that with problems and difficulties comes the strength and power to overcome them and this saying has been very well proved by the traditional artisans from rural India, who despite having an uncertain and low levels of income to satisfy their families constantly strive towards sustaining the cultural heritage of our country by continuing with the traditional business of handicrafts.

So to help and support these traditional artisans, several steps are being taken up by both government and non-profit organisation to reduce the roadblocks in their journey and ensure productivity and growth by bringing in innovation and adopting market changes in their businesses.

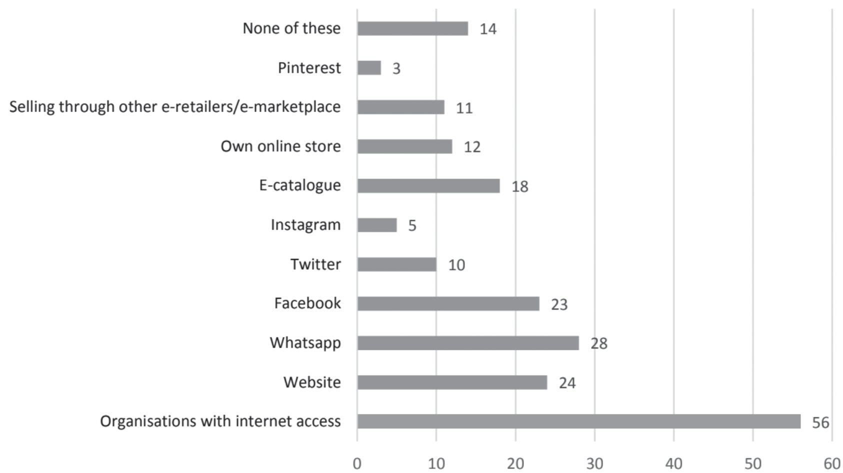
- **Understand the global market**

  In the globalised world of today, traditional artisans must keep themselves updated with the latest news and take steps to cater to customers across boundaries. Traditional artisans should broaden their thinking process and work towards producing handicraft products of global standards to stand out in both the domestic and international market. So to make this possible several steps have been taken by the government and as per the UNESCO report of 2016, around 73% of artisans in rural areas, now have an internet connection and on an average, every 3 out of 6 male artisans and 2 out of 3 female artisans have smartphones which indicate that they are moving towards awareness and are no more confined to the boundaries of their villages.

- **Improve interaction with the customers**

  The gap between the artisanal community and end-use customers was one of the major reasons behind the backward and depleting condition of the handicrafts industry. But now with 75% of artisans having access to the internet, out of them, 43% have their websites, 41% use Facebook, 50% use WhatsApp, 41% sell online and 46% use internet to study market trends. This shows that artisans have started adapting the changing conditions and making their best use to interact with their customers and grow their business. It is also helping them in getting new ideas and customize their products to cater to the contemporary market needs better.

Figure 4: Use of internet tools/social media tools by organisations with internet access (number)



This graph shows the breakup of 75% artisanal community who have access to the internet connection and how they make use of the same for their business.
Source: UNESCO Survey Report 2016

- **Expand your business with supplement products**

  Most of the artisans are involved in producing only a limited variety of products which reduces the scope of their business. Therefore it is important that every artisan create as many different varieties as possible to cover a wider market and is in the position to offer multiple options to customers. This practice is a very good way to ensure that every customer is satisfied and guarantees sales. It also helps to ensure a minimum level of income as a fall in demand for one product gets balanced with the rise in the demand for others and artisans have started working in this direction by understanding the trends over the internet and taking inspiration from it.

- **Customize the product design**

  Traditional and old designs are no longer in fashion and hamper trade. So artisans have started using their smartphones and internet facility to sell online and interact with their customer through social media channels which is helping them to understand the tastes and preferences of customers to customise products accordingly and to withstand the heavy global competition.

- **Improve marketing strategies**

  Marketing is the main pillar behind the well known and celebrated brands that we see today. Therefore artisans must be trained and skilled with the marketing strategies prevalent in the current times. Artisans who have at least 4 or more accounts on social media have reported the higher annual sale on an average in comparison to the total average. Online presence and display of products are helping them to showcase their business and products in a very relevant manner which every customer desires before buying and this eventually leads to sales for them.

- **Encourage collaboration of traditional artisans with designers**

  Majority of traditional artisans are very small and do not have experience and resources to understand and implement the strategies to enhance their businesses. In such situations, it is best to collaborate or develop unconventional partnerships with young designers or e-commerce retailers who complement their skills and working style. Such collaborations are beneficial for both the parties as one has the required skill and experience in production and other has the business acumen required to create a steady and growing business. And 73% of artisans who have internet connection are making the best use of this collaboration by selling their products online through various e-commerce platforms like, Amazon and Flipkart.

- **Organising Workshops for artisanal training**

  Many workshops and training programs are being organized in our country by government and Non-profit organizations to support and uplift the traditional artisans nowadays. So artisans should stay updated and must participate in such training programmes as they do not just upskill them as per the dynamic market requirements but also provide a lot of opportunities to showcase their art at national and international platforms. Dastkar, a non-profit organization is working towards the upliftment of artisans by providing them with a platform by organizing several workshops and fairs across its centres in India where artisans teach their art form to all the participants and instil the cultural spirit of India in them.

GOVERNMENT SCHEMES

Handicrafts industry is a very important part of developing India, contributing a significant proportion towards the GDP through exports and foreign exchange earnings. However, the picture presented in front of us is very pleasing but the ground reality is very different.

As mentioned above, there are several issues faced by the artisanal community which is hampering their growth as an artist and creating roadblocks in their business. So to solve and tackle these issues, the National Handicrafts Development Programme under the Office of Development Commissioner (Handicrafts), Ministry of Textiles has implemented 4 broad schemes to solve the above-mentioned problems faced by the artisans and to uplift their art forms.

1. **Ambedkar Hastshilp Vikas Yojna**

   This scheme was launched in the year 2001-02 with an aim to targets all the aspects of handicrafts, starting from production to technology and human resource development to help and support the artisanal community. Under this scheme, there are five main subsections, Dastkar Shashktikaran Yojna, Design and Technology Upgradation, Human Resource Development, Direct Benefit to Artisans and Infrastructure and Technology Support to cater overall development of artisans and handicrafts.

   One of the subsection, Dastkar Shashktikaran Yojna empowers the community by segregating all the artisans into self-help groups and independent societies based on their skills and art forms. It also includes the formulation of an implementing agency to guide and supervise these self-help groups and proposing further intervention to facilitate bulk and efficient production of handicrafts.

On the other hand, the subsection of design and technology up-gradation conduct 25 days workshops to teach the art of creating new and contemporary designs which are favourable as per the market demand. It also provides integrated design and technology support to entrepreneurs and exporters for design prototypes and commercial market intelligence.

2. Mega Cluster

This scheme has been formulated in 2015 by the Handicrafts Mega Cluster Mission which emphasizes production channels and infrastructure developments for the handicrafts sector. The main objective of this scheme is to channelise support towards the traditional artisans who were unable to cope up with the modernization and technological developments. It will help them to ensure stability in their business, improve their standard of living and increasing employment opportunities in the country.

Also, a Project Approval and Monitoring Committee has been formulated under this scheme which sanctions all the projects and supervises reports to ensure smooth growth and development of infrastructure.

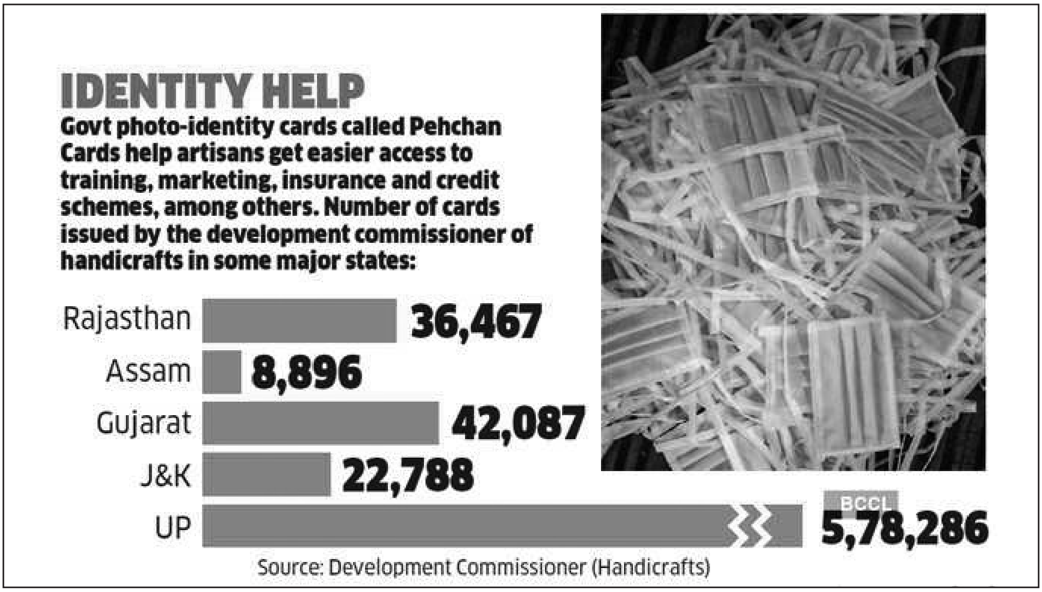
3. Marketing Support and Services

This scheme was introduced to provide advertising and marketing support to the traditional artisans by facilitating financial assistance to participate in trade fairs, buyer-seller meet, workshops, seminars and exhibitions held at any domestic locations in India which facilitate market linkage and promotes businesses. With the launch of this scheme, it has anticipated higher participation by traditional artisans all over India. This scheme also includes promotions and publicity in electronic and print media which highlights various art forms and artisans of Indian handicrafts.

4. Research and Development

This scheme was first initiated in 1956-57 which has been continuing even today. The main objective of this scheme is to generate feedback on economic, social, aesthetical and promotion aspects of traditional handicrafts and artisans and to undertake research and surveys to create an in-depth analysis of important craft forms, their problems and specific aspects to take corrective actions and improvise the policy to ensure that there is no hurdle in the path towards growth and prosperity.

But with time many more additions have also been incorporated in this scheme, which includes conducting studies, identifying problems faced by artisans, financial aid in legal and certification related matters, undertaking technological feasibility studies and market analysis both domestic and international for handicrafts related exports, conducting seminar and workshops to solve specific issues related to handicrafts, assisting exporters to ensure global standards and many more related services.



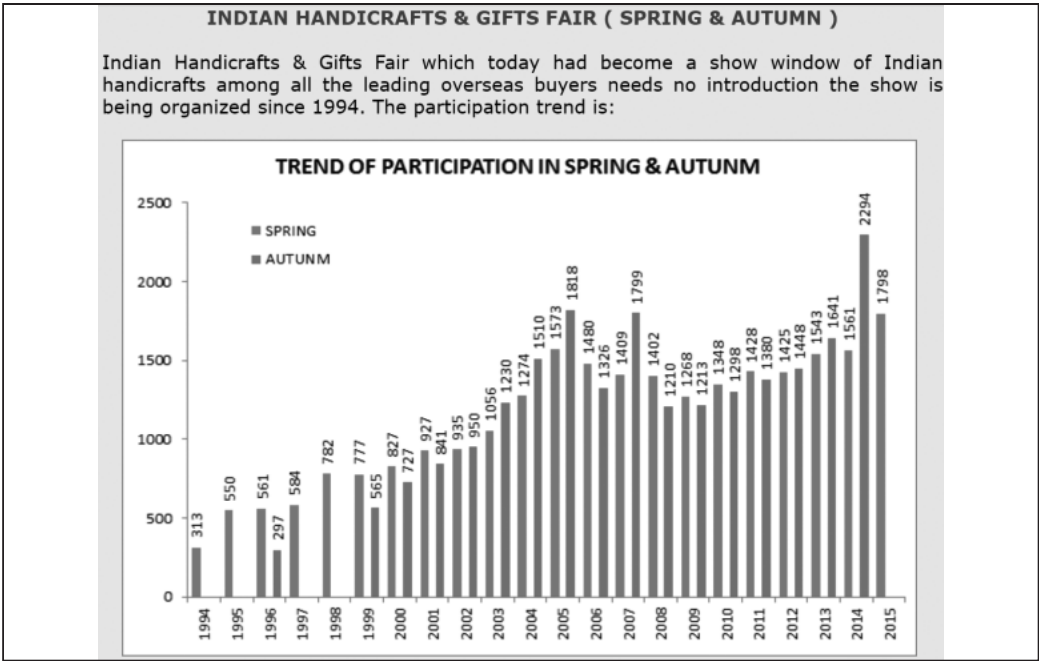
It shows the data of artisans who were issued identity cards by the government to enable them to participate and take the benefits of schemes launched to uplift them.

FUTURE SCOPE

The future of handicrafts is predicted to be very bright with massive growth opportunities due to increasing support from government and non-profit organizations. With globalization and technological developments, artisans are becoming more aware and people across the world have started appreciating handmade and quality products over machine-made products. The "Make in India" movement launched by the government of India has open up millions of new opportunities for craftsmen in 3000 different craft forms. It has increased the employment opportunities and opened up gates for easy business transactions. As per the ASSOCHAM report, it has been said that the export trade in handicrafts will reach up to 24000 crores of turnover by 2020-21 from 17000 crores in 2015-

16.

With the increasing popularity of e-commerce platforms like Amazon and Flipkart, new opportunities to sell handicrafts products at fair prices in very easy steps have been possible which has also boosted this industry to a great extent. In India, thousands of exhibitions are organized regularly in all parts of the country by the government, export promotion board and several non-profit organizations to uplift the local artists and provide them with a platform to showcase their art and develop business relations. Such practices have uplifted several artisans and are expected to reach untouched artists soon.

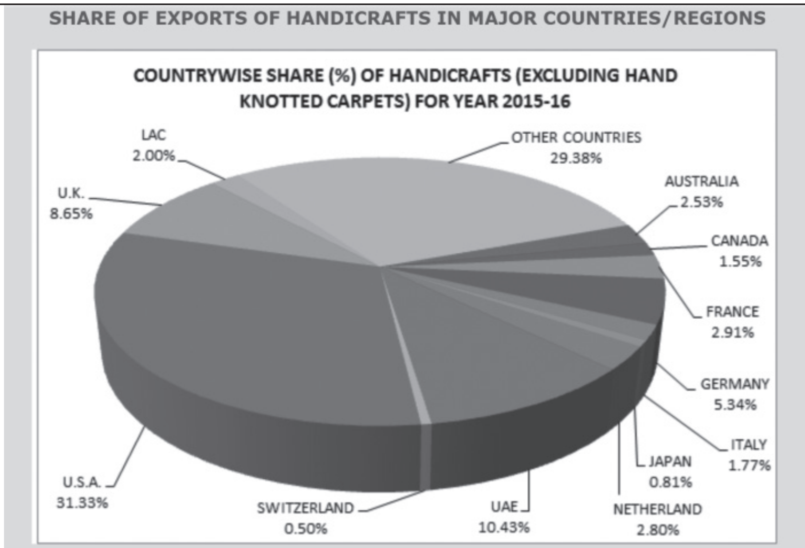


This graph highlights the participation in Asia's largest handicrafts fair (IHGF) from India and abroad organized in Delhi, twice a year by the Export Promotion Board of Handicrafts.
Source: Export Promotion Council for Handicrafts

But due to the sudden lockdown and pandemic situation faced by the world in 2020 has clouded the future of many sectors especially the handicrafts. Most of the small businesses and artisans working independently have suffered huge losses due to sudden fall in demand. Not just that, even the big handicraft makers are facing a sharp decline in the demand for their products. This pandemic situation led to the cancellation of around 30% of the export orders during the lockdown period, refusal by customers to accept orders and making payments for handicraft products.

As per the Export Promotion Broad for Handicrafts, there has been a loss of Rs. 8,000 to 10,000 crore in the handicrafts industry and it will have an elongated effect even post lockdown period. However, this pandemic has created a global demand for hygienic kits and face masks for the handicrafts industry but is still not enough to cope up with the huge losses of the original businesses. The Export Promotion Council for Handicrafts has also recently announced to cancel the 49th edition of Indian Handicrafts and Gifts Fair (IHGF) which is one of the Asia's largest handicrafts fairs organised in wake of lockdown situation in India and abroad. This fair usually witnesses participation by more than 10,000 plus visitors, including 7,000 plus overseas buyers who participate in 3,200 exhibitions organized under this fair showcasing the finest handicraft products from all parts of the country. It is also predicted that Covid19 has adversely affected all types of exhibitions and trade fairs that were supposed to be organized for handicrafts promotion at least for 1 year from now.

But once the effects of this global pandemic are over, several new opportunities will come to cover up for this loss and to ensure growth and prosperity for this sector.



The diagram shows the demand for Indian handicrafts across the world.
Source: Export Promotion Board for Handicrafts

CONCLUSION

Handicrafts industry is one of the strongest pillars of India since its origin which provides the largest employment opportunities to various demographic sectors of the country. It is a great source of exports and foreign exchange earnings for India. And despite the hardships and problems faced by the traditional artisans, it has been supported by the government and several changes have been undertaken by the artisans to customize the designs and revamp the traditional look of the products to satisfy the dynamic tastes and preferences of the customers which is widely appreciated by the people and has helped in the revival of the dying art forms of the country.

RECOMMENDATION

Handicrafts has reached the stage of revival and calls for action by the youth of India, which has the potential to again make India the "Golden Bird", by working towards the development and growth of handicrafts industry. To make this happen, handicrafts must be recognized as a specialized subject for graduation and post-graduation. Students must be encouraged to create startups to uplift the handicrafts industry and by bringing a change in the mindset of people towards handicrafts as not just a rural occupation. If such positive steps are undertaken to uplift and sustain this industry with a pinch of modern customization, it can do wonders for India and the whole economy.

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Redressing Climate Changes: The Green Bonds


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ABSTRACT

The paper studies the potential of green bonds in mobilising funds for financing the climate change and various benefits available for investors to invest in climate bonds market. An analysis of ongoing market trends and key sectors and agents involved in facilitating the flow of market is presented. The results highlight emerging economies still struggle and lack public support in green bonds market. There are many impediments which restrain the overall development of this market, including lack of aggregations mechanisms, relevant framework and risk profile. In order to overpower such barriers, some policy measures have been discussed from demand, supply and general side.

KEYWORDS:

climate change, green bonds, developing economies, public agents, market development.

OVERVIEW

Mounting temperature, shrinking glaciers, depleting natural resources, retreating ice sheets, burgeoning incidences of droughts, accelerated rising of sea levels, stronger and much-intensified heat waves and all the other considerable inimical climate alterations on earth highlight what a formidable catastrophe we might have to confront due to this meltdown. The global climate crisis has already seen many observable adverse implications on the environment and a report by IPCC (The Intergovernmental Panel on Climate Change) draws attention towards a temperature surge of around 2.5-10 degrees Fahrenheit over the following century owing to immense greenhouse gas emissions. The net damage costs of such crisis are likely to be significant and would escalate eventually. Energy, being lifeblood to all sectors, amounts for 70% of the emissions from burning of fossils and it is high time for transmogrifying from current energy system to a more sustainable and renewable energy-based regime. Electrification of transport and espousing a circular economy that solicits curtailments in waste and demand for energy is the need of the hour but petitions trillions of dollars of investment. The sheer enormity of these deepening concerns cannot be accommodated by mere taxes, subsidies or any such regulations. An estimate by 'Bloomberg New Energy Finance' in 2015 insinuates that in order to keep the globe below the 2 degrees Celsius projection would demand over 12 trillion dollars auxiliary to huge sums imperative to conform to deleterious conditions. Furthermore, OECD, 2017 report alleges that USD 93 trillion would be necessitous for infrastructural investments in the coming 15 years for a low- carbon future. In this paper, let us explore the source of such a tremendous amount of funds, its effectiveness, the market for such a solution, what might be the impediments in growth of this market, followed by a set of plausible measures which can be undertaken by the public sector.

LITERATURE REVIEW

This paper pertains to various strands of the financial literature which consider social and environmental aspects. Sharfman and Fernando, 2008; Chava, 2014 report examines the lower cost of capital been documented for firms which have better environmental risk management and greater environmental performance. Also, few papers including Hachenberg and Schiereck (2018) have explored the assessment of price of climate bonds and identified compelling evidence that green bonds are priced in a significantly unusual way as compared to ordinary bonds. Even though climate bonds are a contemporary setting, the study fits into the available literature on socially responsible investing. Renneboog, Ter Horst, and Zhang (2008) survey highlights that a subset of investors is willing to meet social objectives and thus accept lower financial performance and trade-off higher returns on other investment opportunities.

In order to promote green bonds, the Climate Bonds Initiative was also set up to mobilise the USD 100 trillion bond market for finding a solution for climate change.

It is an investor-focused not-for-profit organisation operating internationally. It focusses on helping drive down the cost of capital to support governments seeking investments in the capital market and for large-scale climate and infrastructure projects to attain environmental goals. Much of the data has been taken from reports published by the entity to analyse the recent development in the market for such bonds and various bottlenecks restraining its growth.

Another strand of literature recognizes the need of the public sector to play a crucial role in the evolution of the bond market. However, there are divergent views on this public intervention. While some experts believe mainly private actors drive the growth with limited government role, other stakeholders examine public sector to play a larger role. Against this background, the paper examines a wide range of key impediments in growth and few potential policy measures to address them through public intervention.

1. Financing the way out of Climate Variability

In the wake of truancy and inefficacies in a global carbon pricing system, bond markets play a pivotal role in financing initiatives to channel funds in environmentally amicable motives while concomitantly raising awareness and sensitivity towards environmental risks. Among all the instruments of sustainable finance, green bonds exemplify the most promising and budding market-based solution. In this section, let us see what exactly qualifies as a green bond and the benefits it derives an investor of a green project.

Green bonds are those securities whose proceeds are explicitly designated and earmarked to be employed for environment- friendly projects or business activities. They stimulate the flow of funds towards sustainability and climate-related matters. In basic terms, they are just like a conventional debt instrument with a key difference in its usage to endorse green projects financially. Also titled as climate bonds popularly, they are generally asset-linked and banked by the balance sheet of the issuing body. In a broad sense, the avenues of investment for green bonds incorporate all the green projects which are aimed at a whole lot of following eco- friendly operations:

- Renewable and sustainable sources of energy like solar or wind energy
- Clean or pollution-free transportation
- Sustainable water management
- Effective waste management

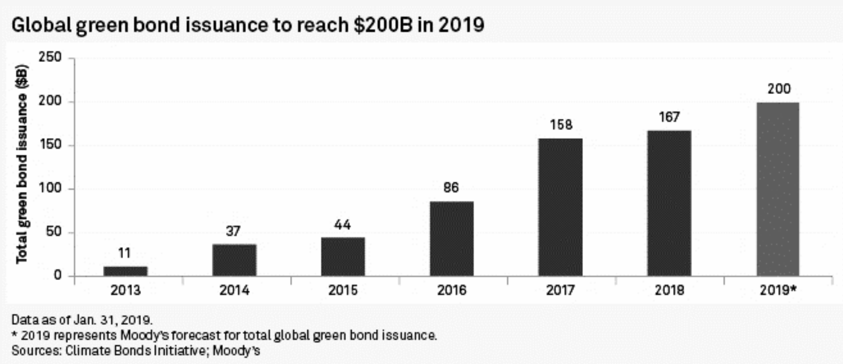
- Contamination control
- Energy potency
- Biodiversity conservation
- Climate change adaptation
- Nature-based assets including land utilization, sustainable agriculture, forestry and fishery
- Industry and energy-intensive commercial
- Cultivation of ecologically pure technologies

This class of financial obligation fosters and strengthens the eminence and public goodwill of the issuer on account of an exhibition of commitment towards comprehensive sustainable development. Due to subsistence of the "green angle", it additionally opens up the window of opportunity for enticing investors globally who seek just green ventures. It has something to do with the fact that pro-environmental inclinations and other non- pecuniary drivers induce investors to hold onto the green assets. Consequently, the issue of green bonds is likely to mitigate the cost of capital as an elevated demand for such bonds from investors lowers the borrowing costs. On the investors' standpoint, minimized expenses of borrowing means decreased expenditures which descend to investors in the guise of dividends and declining operational costs for bonds or ETFs (Exchange-Traded Funds). Furthermore, they stipulate tax incentives like exemptions and tax credits for financiers with a feeling of personal complacency that comes from the conviction that their funds are being applied towards favourable causes and in a responsible and positive manner. Overall, a green bond engenders monetary impetus to tackle conspicuous environment-related concerns and encouraging a move towards sustainable energy sources by investing in them. Substantiation by third parties such as the 'Climate Bond Standard Board' is indispensable to authenticate the green bond status.

Besides the public sectors, the corporate world is also progressively and gradually moving towards the use of corporate green bonds for mobilising their finance requirements. They are so tremendously in vogue now that the 'Morgan Stanley' cites this phylogeny as the "green bond boom". As an instance, Unilever issued almost £250 million worth of climate bonds in 2014 with the intention of cutting down the quantum of water usage, waste and greenhouse gas emissions by half of the prevailing factories. Similarly, as reported by Forbes, 2017, the American multinational tech giant, Apple, made green bonds of an estimated cost of 1 billion dollars publicly available for the sake of capitalising funds needed to encompass renewable and efficient energy within its supply chain and across its facilities. A fundamental concern for green-minded investors that whether the issuers would genuinely embark to keep the funds reserved for climate control or not remains largely due to the odious practise of "greenwashing".

Simply stated, greenwashing denotes the act of making fallacious and uncorroborated claims with regard to the company's onus of doing well to the earth. For ensuring satisfactory incitements for boosting both the demand and supply side of the green bond market, policy intervention is apparently cardinal allowing enhancement of the market. Financial institutions also play a crucial role and have been one of the most dominant players in this market so far. In fact, banks minimize the lending to more polluting sectors, thus "greening" both the sides of its balance sheets up to some extent. Albeit various findings validate that there has been a persistent rise in the environmental scores, assessed by the ratings given by Thomson Reuters' ASSET4, of several companies accompanied by lessened CO2 emissions. Also, there has been an up rise in the filing of green patents lately indicating a push by investors towards amelioration in environmental footprint.

2. The Market For Climate Bonds

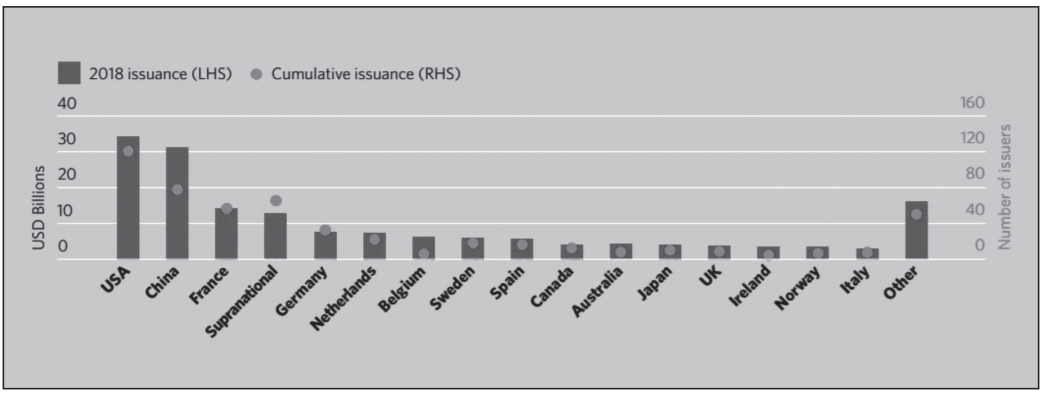


The green bonds embark its foundation from the year 2007 when it kicked off as an AAA-rated issuance from EIB (European Investment Bank) as well as the World Bank. It acquired its momentum and rose to prominence with the issue of first USD 1 billion worth of green bonds in March 2013 by the supranational issuing body, International Finance Corporation. Eventually, corporate bodies too stared engaging in this market and French utility EDF and Vasakronan, the

Swedish property development corporation, were among the first to commence the issue of corporate bonds. As a matter of fact, voluntary guidelines have also been formulated by a consortium of investment banks in 2014 for the proper regulation of the market. These guiding principles, termed as the "Green Bond Principles", take into consideration basic four elements, precisely, the use of proceeds; the process of evaluation of projects undertaken for environmental purposes; management of such proceeds obtained from bond issue; and reporting and disclosing such proceeds and project so financed.

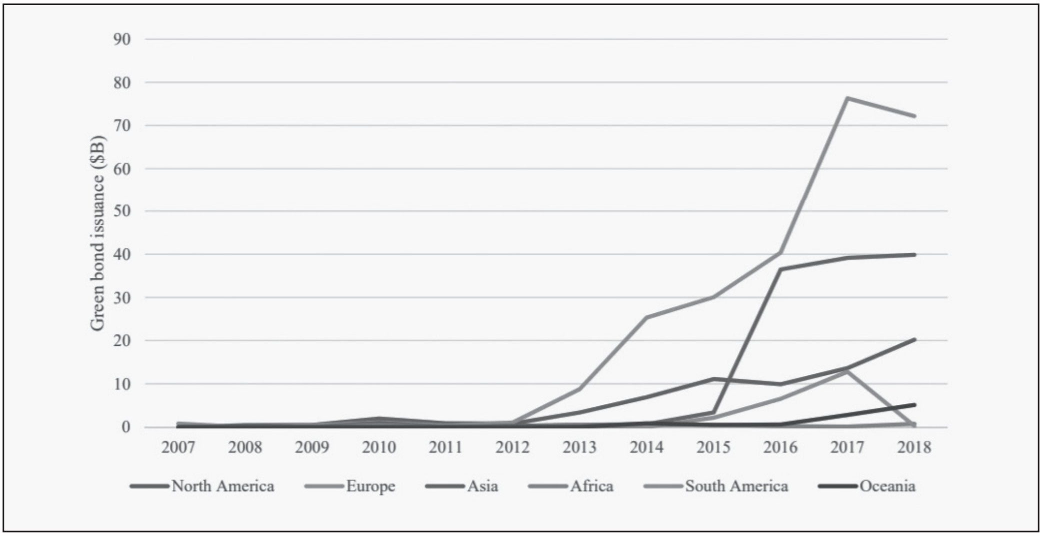
The adjacent figure portrays total dissemination of climate bonds initiating from the year 2013 till the projection for the year 2019 in billion dollars. Accounting for just a pint-sized fraction of the entire bonds market, the green bond market has grown exponentially over a couple of years. It was virtually negligible in 2012 but heightened in 2017 by growing at a terrific rate of 78 per cent from last year and attaining $158 billion valuations globally.

Since its incipience, large volumes of green bonds are being traded at an increasing rate and the potential of proliferation of the market remains gigantic de facto Moody's reckons it to reach over USD 200 billion worldwide in 2019 by burgeoning at a rate of almost 20% despite the sluggish demand in the past year where whole bond issuance dwindled around the world. This is chiefly owing to higher active participation from nonfinancial corporations, robust investor demand for greener and more sustainable investments and greater push by governments on addressing climate variation- related issues. Having said that, now let us take a look at the largest contributing economies at a global scale.



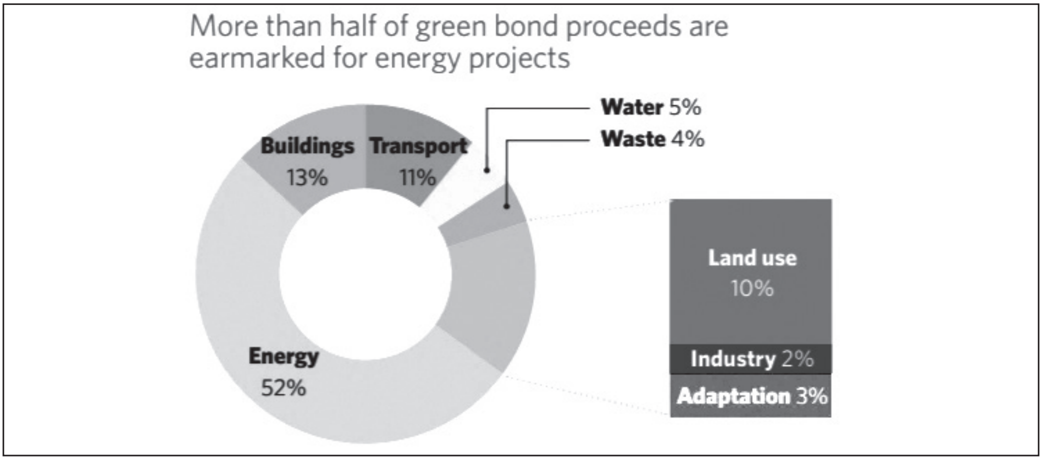
This type of debt instrument presents a prospect for financing long- term and sustainable infrastructure. At the commencement of green bonds issuance, only a few multilateral development banks like World Bank, the European Investment Bank, etc. entered into this market to carry out transactions. Steadily, it picked up its pace and spread to commercial banks, institutional investors and a couple of corporations. The aforementioned figure outlines the biggest issuing economies as of 2018 in concordance with the report published by Climate Bonds Initiative. The United States of America being the grandest contributor holds 20% of the market share with green bonds valued over $34 billion. In 2018, near 63 issuing bodies actively participated in the market from the USA. Federal National Mortgage Association, popularly referred to as Fannie Mae, is a US government-sponsored enterprise which remained the most prominent issuer not just in the USA but worldwide with proceeds above 20.1 billion dollars. The USA was followed by China that garnered 18% market share amassed by its 69 issuing entities. A fair share in enabling China to grow out as the second-biggest issuer of green bonds was contributed by the Industrial Bank with bonds worth USD 9.6 billion. With about 8 per cent of proportion in the entire market and institutes like the Republic of France that catered to green investors pooling roughly around 6 billion US dollars, the Western European country – France turned out to be a herculean economy which issued climate bonds valued at over $14 billion.

A majority of developing nations are not yet included in this booming market of mobilising proceeds for climate finance as still have a long way to go for implementing mitigation and adaptation projects. Nonetheless, a magnifying number of emerging economies are incrementally penetrating in this market. 2018 saw issuance from 8 new markets inter alia Iceland, Portugal, Thailand, etc. amounting to USD 3.3 billion. An incredible fact is the year saw 130 of repeat issuers from the preceding annum which were instrumental in contributing up to 63% of volume worth USD 106 billion.



Observing the following figure, in accordance with the statistics disseminated by Bloomberg, confers an evident demonstration of the evolution of these bonds from their origin in 2007 to 2018 regionally throughout the world. Europe dominates all the other areas as the issuance has mushroomed perpetually since 2013 on a massive scale. Also, remarkable progress has been exhibited by the largest continent – Asia in the recent years by means of a stark growth in 2016 from a mere marginal development in 2015.

Climate Bonds Initiatives alleges that as of today, green bonds predominantly enrich the renewable energy sector granting 52% of its accumulated proceeds to investments in this division. 13% and 11% of the collected funds are allocated to expenditures in low- carbon buildings and transport sector mutatis mutandis. Another essential sector for which 10% of funds are earmarked is sustainable land use. It has been emphasized over the last 2 years, especially with the issuance of bonds from the pulp and paper industry in Brazil. In the emerging markets, sustainable agriculture, fisheries and forestry are the chief sectors that green investors desire investing in. Even pension funds and insurance companies are fast entering into this source of finance by diversifying their portfolios triggering demand for climate bonds to rise rapidly. In compliance with global commitment to transform into low carbon and sustainable economy, the market for such bonds will keep on ascending by alluring diverse investors and issuers.



3. Principal Actors in the Market of Green Bonds

The core players in investments for environmentally friendly ambitions involve:

- Issuers such as financial institutions, municipalities, corporations and supranational entities who indeed are the borrowers of money so raised.

Their quality essentially signifies the credit risk of a given bond.

- Underwriters who supervise the public distribution and issue of bonds and operate jointly with issuing bodies to establish the bond- offering price.
- External reviewers to basically validate the "greenness" of the bonds and affirm the alignment of bonds with the set guidelines, composing of specialized consultants, certifiers and rating agencies.
- Other market intermediaries like stock exchanges which list the securities. Currently, 11 stock exchanges provide a platform for green bond issuance.
- Index providers, in particular bank and credit rating facilities, to design indexes for benchmarking the efficiency of bonds.
- Investors who finance green projects or invest in green assets covering banks, insurance companies, private investors, pension funds, etc.

Apart from these, policymakers, multi-stakeholder groups and civil society organisations also play a pivotal role in market development by imparting transparency in the whole system.

4. Critical Bottlenecks In Green Bonds Market

Regardless of immense potential in these form of bonds to cater to a significant proportion of climate finance by attracting multiple investors, this market is till now plagued by plenty of obstacles. They are relatively more challenging for the developing economies and despite their tremendous growth in recent times, the market share of green bonds is extremely small in comparison to the bond market in totality. In this section, let us investigate some of most principle impediments which torment this market from developing to its thorough potential.

4.1. Lack of Relevant Framework:

One of the greatest blockade in market development for climate bonds globally and nationally is a lack of any proper and uniform green bonds definition and structure. There is an urgency of drafting sound green credentials in order to benefit the environment. Right now, only Climate Bonds Standards and Green Bonds Principles form the basis of international frameworks employed to label green bonds but no adequate monitoring apparatus is available to safeguard the meeting of compliance. Given this, issuing bodies, such as financial institutions and companies, may find it tricky to label certain assets as eligible for green projects which would ineluctably restrain them in issuing green bonds. Inexistence of any penalty arrangements like an obligation to buy back bonds due to default in purpose for which green bonds were issued or forfeiture of any tax benefits available, etc. might also suppress willingness of financers to invest in green assets.

Moreover, missing common standards can drive up higher transactional costs as issuers have to depend upon external reviewers for examining the credentials of green labelled bonds due to lack of clarity in regulations.

4.2. A Dearth of Aggregation Mechanisms:

Another challenge faced by the market is paucity in the formulation of suitable aggregation mechanisms, suchlike ABS (Asset-Backed Securities) or covered bonds, as green projects are commonly small-sized in relation to the conventional infrastructure investments. In reality, a huge segment of bonds issued is commonly miniature for large institutional investors who appreciate investing in higher bond values with issuance sizes of 200 million to 1 billion dollars deals. Much of energy efficiency and renewable energy funding projects are lesser in size and often fragmented leading to discouragement among financers. Presence of aggregation mechanisms can ensure the reach of assets accessible for investments to the large investors. As a consequence of a dearth of these mechanisms and models, even cash flows may be unstable and underlying contracts and projects are not normalised.

4.3. Inadequacy of Green Bonds and Projects Pipelines:

Even though the issuance of climate bonds has risen enormously over the past few years, supply is still very meagre. The investor demand for such bonds is quite strong but continues to transcend supply dramatically. Bonds released some of the eminent financial institutions like European Investment Bank of KfW – a development bank in Germany, are generally oversubscribed by a multiple of 5 or 6. This situation also prevails in case of corporate issues by large entities and several regional government bonds. The market falls short on viable and bankable projects for financing for climate change which is desirable for raising funds through bond issuance. There is no as such transparent and well-drafted strategic project pipeline by governments on national or regional levels that are instrumental in building a positive and conducive environment for mobilising private sector investors. On the other hand, even the investors have limited capabilities due to which government authorities remain dubious of the fact that whether the sponsors would be willing to offer their capital for funding some projects. This inevitably creates a vicious circle. Investors need to be enlightened to know the positive implications of green bonds and issuers should be stimulated to diversify their portfolios for tapping resources from green bonds issuance.

4.4. Poor Market Knowledge and Information:

The market faces yet another detrimental scenario wherein market participants in a climate bonds market, especially of lesser developed economies, have confined and insufficient knowledge and acquaintance with green projects. Probable issuing entities are not able to assess green investments and requirements to raise funds from issuing such debt securities. Rating agencies, such as S&P and Moody’s, normally have a tendency of awarding good credit ratings, a prerequisite for inducing investors – particularly large ones, only to investments with long records of performance and past issuers. This makes it intricate for new entrants with novel business models in the market to get higher ratings, thus constraining them to tap green bond markets.

Over and above this, investors may not be able to track the authentic influence of green projects they are investing in due to lack of transparency. Imperatively, forming annual reports for investors would enhance the information system.

4.5. Ambiguity in the Risk Profile of Green Investments:

The climate bond market is not established enough to integrate mature and advances technologies critical to assess related opportunities and risks associated owing to a paucity of sufficient historical records and confirmation of performance. Undeniably, this leads rating agencies and large institutional investors to measure the technology risk to be far greater for emerging green investments than the established sectors with past performance. For instance, DG CLIMA, in a study on climate investments, claimed that utility companies with a bigger share of traditional sources of energy in their energy mix obtained greater credit ratings than the ones with more renewable and eco- friendly energy sources. Green investments generally mitigate risks by countering climate alterations and mitigating other risks associated with the environment for the economy. But climate mitigation and adaptation impacts materialise in the long run, creating troubles for investors looking for a short term horizon. These long- term climatic trends are not taken into consideration or incorporated into their investment estimates. Since no proper risk calculation methods have been formulated, funding in proven fields as in case of oil and gas industry might appear to be less perilous than green investments from a short-run perspective.

5. Measures to Overcome Impediments in the Green Bond Market

For any unaccustomed bond market, public sectors play a vital role in engendering an enabling environment to assist dynamic growth. With a focus on alleviating the market from the key bottlenecks, they can utilise certain tools ordinarily used in general bond market and implement them in a more concentrated fashion to expedite particular green investments for the overall development of the climate bond market. This section attempts to provide some public measures that can help in dealing with the constraints in market development. These policy actions are studied as a measure related to the supply side and demand side of the market coupled with some generic measures that impact both the market forces.

5.1. Demand-Side Arrangements (linked to investments)

5.1.1. Strategic Public Investment in Green Bond

Government spending indicates a prominent signalling effect and private investments into the green bond market can be facilitated by setting an appropriate example by the state. This is because it denotes the fact that public agents reflect the bond to be as a credible and reputable investment, enabling the reduction in first- mover and perceived risks for private sector financiers. By prescribing funding targets for green projects or modifying investment regulations to make green bonds more propitious, authorities can relocate inclination of public investors such as sovereign wealth funds, development banks and public pension funds from conventional bonds to climate bonds. For public institutes which already have decreed to issue decisions related to investment, administrative costs tend to be fairly low and where guidelines or rules are to be amended, these costs are moderate and occur only once.

This scheme works optimally for the lesser developed economies and new bond markets, wherein public agents can act as cornerstones for private investors for their more active participation. However, this measure is not that effectual developed markets and markets where demand outweighs the supply of green bonds as is the case with most of the markets currently.

5.2. Supply-Side Initiatives (with regard to issuance)

5.2.1. Public Issuance of Climate Bonds

As mentioned earlier, the demand for green bonds presently outrun the supply significantly and there is a pressing need for public entities to kickstart the green bond market by strategic public issuances. It can engage many investors by demonstrating the functioning of this asset class, thereby incentivising private actors to tap this form of market. The key players in this regard can be national governments, international and national development banks, cities, provinces and public utilities. Administrative costs are lower for large public entities and financial institutes which are already familiar with this process of the issue but comparatively higher for smaller public bodies or new entities. Thus, growth of the market can be encouraged by public issues, effective promotion and enhancing knowledge about the green bonds market.

5.2.2. Credit Enhancements

In nascent stages of the market, issuing bodies are not able to obtain satisfactory ratings crucial for investments from private investors, primarily large institutional investors. To combat this predicament, public financial institutes should reinforce good credit ratings by absorbing some portion of risks in these investments, portraying the bonds to be financially competitive. To do so, loan guarantees at project financing stage can be done, financial insurances can be provided to cover principal and interest of bonds by these entities. Additionally, to compensate investors, in case policy that formed the basis of investment decision is altered, policy risk insurance schemes can be formulated.

5.2.3. Assistance in Aggregation and Securitization

Green projects in smaller denominations are unattractive for large investors, as stated earlier, leading to higher costs of capital for such projects. Public financial bodies and financial regulators can effectively mitigate this concern. They need to step in to support securitisation and aggregation mechanisms for building bonds that address the needs of investors with regard to volume as well as diversification of risk portfolio, thus lowering the costs and enhancing project pipeline. Warehousing, which involves aggregation of loans or cash flows underneath a unified entity called a financial warehouse, allows packaging of loans to be issued in the form of asset-backed securities. For the purpose of securitization of loans, new green loans should be standardised by direct assistance from public sectors to existing market efforts financially. Furthermore, offering preferential lending rates can induce the inception of standardised loans to finance green projects. This proved beneficial in Mexico where local and international development entities partnered to offer a minimal rate of interest to fund sustainable homes. Green covered bond is yet another tool to stimulate market development as it benefits investors by providing them access to long- term funding at low costs and risks involved due to the presence of high-quality underlying assets.

5.4. Other Considerable Measures

5.3.1 Tax Incentives

Abatement of taxes for both issuers and investors can facilitate their active role in market development by making green bonds more appealing than traditional bonds on which taxes can be increased. Since supply is way too less than demand, currently target should be on bond issuers by tax alterations and subsidising the issuance. Tax- credit bonds, on which investors gain tax credits instead of payment of interest; tax-exempt bonds, on which no tax is applicable on interest; and direct subsidy bonds, which entail direct financial support from the government on interest payments, are substantial strategies which can be employed by finance ministries in this respect.

5.3.2. Establishing Relevant Frameworks

As discussed before, the biggest problem with further market development is the inexistence of pertinent frameworks and green bonds definition. Presence of harmonised standards would mitigate transaction costs, consequently raising demand and supply of green bonds. Financial regulators, ministries of finance, public entities and municipalities can be key actors in this. Compliance, transparency, stimulation of cooperation between various stakeholders and mandating accounting and disclosure requirements can help in the attainment of the overall green bonds market.

CONCLUSION

Present and future generations face a daunting challenge due to climate change which impersonates an existential threat to all communities and ecosystems throughout the world. This calls for a gargantuan amount of funds and a significant market-based solution to mobilise funds for the welfare of the environment seems to be the use of green bonds. The market for these bonds is growing steadfastly owing to elements like increasing climate awareness, similar maturity yields as compared to conventional bonds and tax benefits. The market for climate bonds initiated in 2007 and has been growing ever since with a projected 200 billion dollars capitalisation by 2019. Issuing entities, underwriters, external reviewers, investors and other intermediaries are key agents in the market for green bonds. This paper also attempts to note the reasons why despite tremendous growth and rising global commitment for being environmentally friendly, the share of climate bond market still remains considerably low. Lack of appropriate frameworks, concern for good credit ratings and paucity of aggregation mechanisms are few of the impediments in this regard. The paper also demonstrates that the public sector role is crucial for combating such bottlenecks. It outlines public investment, public issuance, standardisation and aggregation mechanisms, credit enhancements and other tools that can be employed by the public entities. Both the nation's efforts and private solutions are prudent for overall market development. The need for addressing climate variations is imminent and green bonds provide an effective front-line response from the financial markets which ought to be availed.

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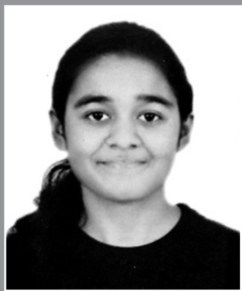

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Agrophotovoltaics: Towards a New Path of Energy-cum-Food Generation

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ABSTRACT

The paper discusses an innovative approach of agricultural mechanism- food production along with energy generation which benefits farmers economically and provides a new scope of development and revival in Indian Agriculture. According to the studies, it provides far reaching benefits to the agricultural sector when compared to the traditional and conventional methods of farming. The data and statistical figures reflect the scale of crop production being enhanced due to implementation of the agrophotovoltaics system through experiments conducted at grape farming lands in India as well as in the arid regions. The paper also mentions the cost benefit analysis as well as the critical approach of adopting the mechanism through various aspects of economy and environment. Moreover, the achievements in India towards the mechanism till now have also been discussed along with a focus on establishing the system all over the country with the available resources and technology. Apart from the food generation capacity, the mechanism also provides for a comprehensive use of solar energy, which is

a renewable resource, in order to fulfill the increased demand of energy in the country.

INTRODUCTION

Agrophotovoltaics refers to the innovative idea of developing the same area of land for solar energy generation as well as for agricultural production through photovoltaic methodology. It is also known as agrivoltaics. The idea was originally being conceived by Adolf Goetzenberger and Armin Zastrow in 1981. Since 2004, this technique has been extensively tried and implemented in Japan and later in many countries of Asia and Europe. The idea implies the co-existence of solar panels and crops in the fields and thus, facilitating sharing of solar light for both energy production and food production. Harvesting crops and solar energy together on a single shared land provides a promising and efficient solution for India's land and water scarcity problems. Thus, the method facilitates better crop productions in arid and semi-arid regions.

The two essential requirements for human beings are energy and food production. Due to the rapidly increasing population, demands for these two resources are also increasing at a greater pace. In order to fulfill the present as well as future requirements of these resources, the role of agrovoltaics has been discussed and proved through various research and experiments conducted worldwide. These experiments reflect the great potential of this the technique in enhancing farmer's income and in improving their livelihood. Since, the mechanism involves participation of a renewable resource i.e. sun, it can be used at a varied scale enormously. Agrivoltaics works extensively well for the shade resistant plants. Some plants with such potential functioning crops are hog peanut, alfalfa, yam, taro, cassava, sweet potato and lettuce. Also, it has been found that agrivoltaics is most beneficial for summer crops because of the microclimate created by sun and its solar energy effects on earth's surface along with the temperature conditions, specifically for equatorial land. Agrivoltaics system has effects in terms of three aspects that directly affect plant growth and reproduction, which are air temperatures, direct sunlight, and lastly water vapor in atmosphere. Photovoltaic panels help to provide shade to the land in which it is installed, which in turn results in comparatively cooler temperatures during day and warmer temperatures in night than the traditional farming which has open sky planting system i.e. without any upper shade system. Also, a lower vapor pressure deficit in the agrivoltaics system is observed which reflects that there is more moisture present in the air because of those panels.

EDGE OVER TRADITIONAL FARMING

"Many of us want more renewable energy, but where do you put all of those panels? As solar installations grow, they tend to be out on the edges of cities, and this is historically where we have already been growing our food," says Greg Barron-Gafford, a lead author of Nature Sustainability (Science Daily, 2019, para.2). A recent study in Nature found that current croplands are the "land covers with the greatest solar PV power potential" based on an extensive analysis of incoming sunlight, air temperature, and relative humidity (Science Daily, 2019, para.3).

The Fraunhofer experts in there researches mentions that the costs of agro PV installations are expected to fall in the near future because of the economies of scale and learning effects. Also, they are already cost competitive with the small rooftop solar panels. PV system owners could also gain an additional source of income from energy storage on the arable land specifically or from the rising use of electric vehicles in agriculture. The advantages of agroPV use reportedly go beyond increased crop yields. The innovative method provides a substantial edge over the conventional methods of farming in various aspects along with environmental sustainability. The mechanism provides the varying benefits such as prevention of wind and soil erosion because of the implementation of panels in the fields which will be strong enough to hold the soil firmly. Solar plants can also provide shade for livestock, thus facilitating spacious use of field for livestock farming since livestock farming is itself an additional source of income for farmers. It can prove to be the improved pollinator habitats. It enhances increased market opportunities for shade tolerant crops like grapes, making the crop production economically viable and feasible. A study by **Sustainable Energy Technologies and Assessments** explores the viability of agrivoltaics system deployment on the grape farms already existing in India. The economic value of these farms deploying the proposed systems may increase more than fifteen times as compared to conventional farming, because of the shade tolerance capability of the grape plant. It has a very important effect on power generation which gets increased over 16000GWH electricity amount which in turn reflects the potential of meeting energy needs and demands of more than 15 million people. Through this estimation, one can analyze the enhanced value of land, which will in turn provide good economic utility to the farmers. Grape based agrivoltaics can be implemented in rural areas to enable village electrification effectively. Thereby, fulfilling and solving the electricity crisis in rural parts of the country, which lack in terms of financial resources.

Since the plants are on elevated platform, there is no need of any additional waterproofing since the pots/containers are not in contact with the roof (Unlike traditional rooftop gardens where additional water proofing may be required). Some of the other benefits include protection against extreme temperatures, extreme frost, and heat waves and also protects from hail. It provides soil hydrometric sunlight, and plants physiological needs might be controlled via innovative sensors and swing PV. The method facilitates increased pasture fields production on dry, unirrigated farmlands. Renewable energy production and farming are a winning combination. Solar energy can be harvested forever, providing farmers with a long term source of income i.e. throughout the year. The solar heat collectors can be used to dry crops and warm homes, livestock buildings and greenhouses.

CHALLENGES TO THE TECHNIQUE

Though the method has far reaching advantages, yet few challenges appear to take place as a result of implementation. The most important among them is that the adoption of such technique requires deployment of heavy financial resources i.e. a huge investment is required which increases the cost of production.

Also, the technology does not work for sunshine addicted crops. Shade resistant crops are not typically grown in industrial agricultural systems. For instance, wheat crops do not fare well in a low light environment, meaning they would not work with agrivoltaics. Agrivoltaics do not yet work with greenhouses. Greenhouses with half of the roof covered in panels were simulated, and the resulting crop output reduced by 64% and panel productivity reduced by 84%. Also, the swarm of elevating solar plants may increase humidity ratio and can also attract and favor the growth of parasitic plants. It also possesses a negative visual impact on natural landscape since the plants are highly visible from a great distance.

Thus, a viable solution is needed to overcome the challenges faced in implementing the technology, among which the first priority is to make sure of the availability of the financial resources to the farmers so that the benefits could be reaped. It could be done through government initiatives either through private public partnerships or through public investments, as well as private sector participation is also required in order to get a good performance.

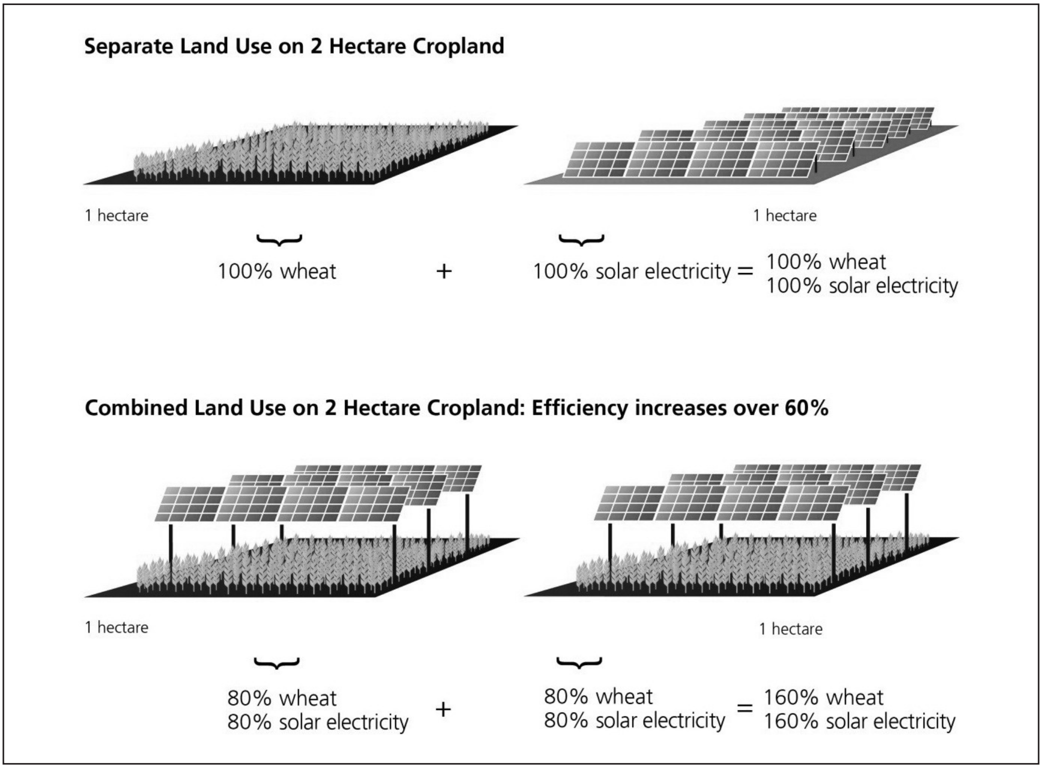
EFFECTIVE IMPLEMENTATION IN INDIA

Agrophotovoltaics lies as the solution for a global energy transformation, increasing world energy demand, negative global warming effects, and global water scarcity. It tends to offer a promising investment to farmers and new opportunities for ecologically sustainable livelihoods. For the fulfillment of the mentioned purposes, various studies and researches are conducted in various countries as well as India. The technology has a great potential in India.

The **Fraunhofer Institute,** the largest institute for solar energy system in Europe has been conducting an experiment near Lake Constance, Germany and has now shown that both uses i.e. crop generation and energy generation are compatible. In the first year, they found that the combination of solar energy and agriculture has made the land 160% more productive. Along with that, it is also resource efficient and it reduces competition for land and additionally opens up a new source of income for farmers.

Similarly, a study by **Max Trommsdorff of Fraunhofer ISE** made this compatible analysis for Indian agricultural system also. The Maharashtra State Power Generation Company (Mahagenco) performed setting up 10MW of agricultural solar PV. It included the creation of green house and poly house sheds in their experiments. Mahagenco expresses to increase the height of solar module erecting structures so as to facilitate the provision of extra space beneath the modules which can be used for horticulture, floriculture and some other allied activities. The ply houses for sheds established along with the solar panels can be given for earning and operational activities to the agro-developers, co-operative organizations, farmers and also to the unemployed youth in the rural areas for commercial house farming. Meanwhile, shifting over system would help to save huge sums of money and would help in generating income for farmers nationwide, according to a research by the Institute for Energy Economics and Financial Analysis (IEEFA). In Maharashtra, there is a good potential for implementing the mechanism in arid and semi-arid regions of the state. It demonstrated the shading impacts on crops as discussed above and also about the less evaporation with results of up to 40% higher yield for tomatoes and cotton crops. In certain cases, the results yielded nearly double the efficiency for the region. Besides less evaporation and lower temperature, harvesting the rain water with PV modules also plays a significant role. It is possible to collect and store rainwater from the top surface of PV modules in the system. Therefore, rain-water harvesting system in the developed solar panel system has also been designed. This water harvesting system contains of rectangular sheet water collector channels, underground water conveying PVC pipes and an underground water storage tank of 1 lakh liter capacity. Apart from this, the utilization of power generated indigenously by solar panels to run solar water pumps for irrigation lowers the dependency on government's electricity supply or diesel generators which tremendously causes pollution. Among the various benefits, one is the ability to save water resource as demonstrated by **CAZRI** that water left from cleaning solar panels can be used for crops below panel area. However, Agrophotovoltaics are still at an early stage of development, hence they are still under technical progress and quality improvements. Nevertheless, the system shows an incredible potential in meeting environmental needs and solving its varied concerns. It helps in achieving both sustainable agriculture and rural development.

Figure: Pictorial Presentation of Increased Capacity



Source: GREENOMICS WORLD

(Agrophotovoltaics or Agrovoltaics – The Future of Modern Farming)

The importance and requirement for renewable energy has been steadily increasing in India than ever before because it serves as a solution for the insufficient non-renewable energy resource, which is not being capable to fulfill demands of such a rapidly increasing population. Among the renewable energy resources, solar energy has proved to be the most widely used because of its enormous availability in a country like India, with such a climate appearing in Thar Desert. Photovoltaic based electricity generation shares a major portion of renewable energy generation in India now-a-days. Another essential reason behind the use of solar energy is that fossil fuels are being exhausted rapidly. Energy generation through biomass or bio-plants is claimed to be a possible substitute or a solution to the incapability of fossil fuels, yet land area required for biofuels largely exceeds cropland area of planet. Biofuels extracted from cereals or oil crops are generally produced by ethanol pathway or trans-esterification methods. Also, estimations are there that a hectare land of cereals will be sufficient to manufacture bioenergy which can allow a car to run up to 18,000 km and it can also run up to 22,000 km, if most efficient trans-esterification method is used. **ICAR** researches shows that the low efficiency of photosynthetic process of most energy crops which is about 3% will not be able to cope up with increased energy demands. In contrast, commercially available photovoltaic panels have an efficiency of 12-15% and can constantly and thoroughly supply future energy needs of India.

INDIA'S APPROACH AND FUTURE PROSPECTS

In a country like India, which has the second largest extent of arable land in the world- almost 395 million acres and world's largest extent of irrigated croplands where 58% population is dependent on agriculture directly or indirectly, agrivoltaics can give an excellent performance. Using such a vast stretch of land, India can effectively implement the mechanism. In its approach, Central Arid Zone Research Institute (CAZRI) established a one acre 105kwp pilot project in Jodhpur in 2017. Later on, it also added a 25kwp project at its regional research center in Bhuj, Rajasthan. The structural parameters for installation of solar panels are slightly different from that in a conventional solar power plant. Installation of such systems in farmers' field may fetch additional income from sale of electricity in addition to crop production. At CAZRI, Jodhpur, 105 kW capacity solar plants has been established with three experimental designs, which are- PV arrays of one row PV module and 3 m interspaces between arrays; PV arrays of two row PV modules and 6 m interspaces between arrays and PV arrays of three row PV modules and 9 m interspaces between arrays. Such projects, installed at isolated sites are also being conducted by Amity University in Noida.

After installation, it was its rainwater harvesting potential which attracted attention. The rainwater collection efficiency of CAZRI Jodhpur has increased by 69.2% according to PV Magazine. This research published in 2017, also looks at the potential of agrivoltaism for vineyards in India. About 49% land area of a solar PV-installation system can be used to cultivate crops, which is otherwise left as fallow for no use throughout the year. Some of the selected crops are mungbean, mothbean, clusterbean, isabgol, cumin, and chickpea. Apart from these, medicinal plants e.g. Aloevera, sonamukhi, sankhpuspi etc. can also be grown. All these crops are generally low heighted crops and require less amount of water and thus are suitable for AgroPV system.

India is looking forward to double its agricultural sector income by 2022. In its efforts, latest practices and experiments can be seen at India's second AgroPV session at **Renewable Energy India Expo, Sep 2019.** The expo was a more of an industrial nature exhibition where some of the prestigious policy-makers, decision-makers, influencers, techno experts and professionals from across the globe met to discuss the global challenges prevailing all over the world, reforms, and technological advancements and to develop a roadmap for seamless growth in this field. This was a packed session entitled-'Agrophotovoltaics- Harvesting sun for food and power'. International participants were also present to explore future business opportunities for investments in India in combining farming and solar energy generation. There were projects and presentations explained by various sector experts and consultants hailing from CAZRI, AMITY, Next2Sun, Astron Solar Power regarding the ongoing research as well as commercial projects under implementation in India. At last, Informa Markets in India (Formerly UBM India) in this session, succeeded in conducting the 13th edition of Renewable Energy India (REI) Expo from 18th to 20th September 2019 at the India Expo Center, Noida, Uttar Pradesh.

The future 14th epic edition of REI Expo scheduled to be held during 10th to 12th December 2020 is expecting to attract over 800+ Exhibitors, 40,000+ trade visitors and multiple Country Pavilions.

CONCLUSION

The increasing growth of land-based solar photovoltaic energy generation can create a land use conflict with agricultural production. Fortunately, this issue can be resolved using the concept of agrivoltaics, which is co-development of land area for both solar PV and agriculture. Also, fossil fuels are continuously being depleted with their simultaneous negative consequence on environment. This demands a greater use of renewable energy source to enable to internalize current externalities and disable the carbon generation in environment. The value of solar generated electricity coupled to shade-tolerant crop production created an over 30% increase in economic context from farms using the agrivoltaic systems instead of conventional agriculture. It has been postulated that agrivoltaics would be beneficial for summer crops as they create the side effect of heat and water flow control.

Among the benefits, there are sort of serious challenges to be faced in working of this mechanism. First of all, the major issue is the investment requirement in the system as its implementation involves huge cost. The system is not fit for taller crops of more than 5-6 feet such as wheat, millet and jowar. Other challenges could be the crop damage form heavy falls of water during cleaning of solar PV modules, uprooting of plants due to repairs of underground wiring.

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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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RELEASE OF FOUNDATION ISSUE OF STRIDES

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 held on April 13, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.

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