



# ECOLLOQUIAL 2019

ANNUAL JOURNAL  
DEPARTMENT OF ECONOMICS  
LADY SHRI RAM COLLEGE FOR WOMEN  
NEW DELHI

# **ECOLLOQUIAL 2019**

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Editorial Board 2018-19

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**Note from the Faculty-in-Charge**

The Academic Journal Ecolloquial 2019 seeks to provide a platform for students to delve into important economic issues. The aim is to encourage them to read, analyze and present a clear perspective. Many thanks to Dr. Rathin Roy for his insightful views on current economic scenario. Apart from the interview, the editorial team has incorporated book reviews and an opinion piece competition 'Redefining Contours'. I thank the team for its dedication and hard work.

**Ms. Neha Grover**

**Note from Editorial Board**

It is with great honour, humility and pleasure that the Editorial Board presents to you the Annual Journal of the Department of Economics 2019. The Ecolloquial 2019 aims to expand horizons and kindle interest in the varied and dynamic fields of economics. From economics impacting us in our daily lives through an analysis of inter-generational educational mobility in developing nations and viewing the *Swachh Bharat Abhiyaan* through a gendered lens to deconstructing the Cuban Missile Crisis of 1962 using a game theoretic approach, we have attempted to compile a wide array of thought provoking research papers and articles in the Journal.

This year we are proud to announce that we conducted an opinion article writing competition called Redefining Contours across all years and departments of Lady Shri Ram College to encourage students to vocalize their opinions about the intricacies of the world we live in. We have introduced a new section called Redefining Contours which aims to include these opinion pieces shedding light on the brimming and disruptive ideas of today.

The Editorial board is delighted that it received an overwhelming response of submissions from the student body. We hope that this journal serves as an inspiration for future research and ignites discussions of contemporary and pertinent issues.

The Annual Journal of the Department of Economics 2019, is a culmination of months of hard work on the part of the authors and the editorial team. The Editorial Board is excited to present this year's journal and hopes that the reader enjoys and gains from it as much as we did.

**The Editorial Board 2018-2019**



**The Editorial Board 2018-2019**

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## Abstract

"We're eyeball to eyeball, and I think the other fellow just blinked" were the eerie words of Secretary of State Dean Rusk at the height of the Cuban missile crisis in October 1962. He was referring to signals by the Soviet Union that it desired to defuse the most dangerous nuclear confrontation ever to occur between the superpowers, which many analysts have interpreted as a classic instance of nuclear "Chicken". The Cuban Missile crisis has been a subject of extensive discussion, debate and research in the domain of game theory. Numerous developments have taken place in this regard and a long distance has been traversed from the initial usage of the Chicken game to model the crisis to the evolution of Bram's theory of moves, the theory of metagames and others. This paper critically evaluates the appropriateness of different theories and games in modelling the crisis. At the same time, an attempt has been made to reason out the outcome of the conflict by using multiple game theoretic approaches.

Keywords: Cuban Missile Crisis, Chicken Game, Theory of Moves, Brinkmanship

JEL Classification: C70

## 1. Introduction

"The history of science is a history of the successive replacement of one explanation by another," as written by Abraham Kaplan ([1], p. 354) is a fitting description for all the attempts made by game theorists till date to understand and analyse the Cuban Missile Crisis of 1962, a major flashpoint during the Cold War that occurred more than 50 years ago. The US and USSR engaged in a tense, thirteen day political and military standoff in October 1962 over the installation of nuclear-armed Soviet missiles in Cuba, only 90 miles from US shores. The missiles were a secret that American U2 spy planes brought to President Kennedy's notice and then began the weighing of varied American responses to this new threatening finding amidst an already very cold, Cold War. It was against a backdrop of immense uncertainty and risk that the thirteen days of the Crisis are known as the week the world stood still with President Kennedy himself estimating the chance of war to be as high as 50%.

An analysis of The Cuban Missile Crisis is incomplete without an understanding of the policy of brinkmanship undertaken by both the USSR and the USA during the emergency. An aggressive risk-taking foreign policy in which "one of both parties force the interaction between them to the threshold of confrontation in order to gain an advantageous negotiation position over the other," that is reckless and often well understood by the famous cartoons of 1962 that show both Khrushchev's and Kennedy's fingers a hair-strand away from the trigger buttons to nuclear war and mutually assured destruction of at least the Northern Hemisphere.

Varying developments in game theoretic explanations of the Cuban Missile Crisis have emerged recently aiming to reflect and refine the application of game theory to a case-by-case

basis instead of a generic model. In this essay, attempts are made to evaluate and link the existing game theoretic lenses to view the Crisis while breaking down different decisions during the thirteen days through games modelled for specific days in the timeline.

This paper starts with the most commonly discussed game of Chicken which is used to model various conflicts in International Relations where the players are on a collision course. We discuss why this model fails to explain the Crisis and how an alternative approach referring to Brahm's theory of moves which models two of US's strategies, to Blockade or to Strike against USSR's to Withdraw or to Maintain, is an improvement to the Chicken. Moreover, we discuss a new game which models the negotiation between US and USSR on the removal of US missiles in Turkey for Soviet missiles in Cuba. Finally, in our concluding remarks we highlight the assumptions and limitations of the games and our model.

## 2. The Chicken and the Alternative

The Cuban missile crisis, like any other conflict where the players are on a route to collision, can be modelled as a Chicken game. The two players are the Soviet Union and the US. The two moves at the former player's disposal are to *withdraw* (*W*) and to *maintain* (*M*) the installation of missiles while the latter player's moves are to go ahead with a *blockade* (*B*) or an *airstrike* (*A*).

This results in  $2 \times 2 = 4$  outcomes.

1. W/A : This results in US victory and thwarting of the Soviet Union.
2. W/B : This results in a compromise as as both sides decide to cooperate or back down.
3. M/B : This results in Soviet victory and US defeat.
4. M/A : This results in nuclear war or an escalation of conflict as neither side backs down.

As is the case in a classic chicken game, both players maximise their payoffs in the case of their victory where the other player defects (swerves) or back down. The second most preferred outcome is that of compromise and the worst outcome is of conflict.

		USSR	
		Withdraw	Maintenance
	Blockade	(3,3)	<b>(2,4)</b>
US	Air Strike	<b>(4,2)</b>	(1,1)

Key: (payoff to US, payoff to USSR)

4= best, 3=next best, 2=next worst, 1=worst

The chicken game gives two Nash equilibria in pure strategy. It predicts two outcomes: US victory and USSR victory. A Nash equilibrium is the accepted measure of rational behavior

in normal-form games with complete information. But the two Nash equilibria are neither equivalent—that is, they are associated with different payoffs to the players—nor interchangeable in the sense that the strategies associated with them may not have identical consequences. Needless to say, the existence of two or more non-equivalent and/or non-interchangeable equilibria, Nash or otherwise, confounds game-theoretic explanations and predictions (Zagare 2014). Moreover, neither of the two predicted outcomes actually translated into reality which was a situation of compromise which is also the mutual next best outcome for the two players. The chicken game's inability to predict compromise as an outcome of a conflict situation leads us to discard this model.

Why does the Chicken game fail to capture the essence of the Cuban Missile Crisis? The Chicken game assumes that the two players choose their strategies simultaneously which is exactly where the Cuban Missile Crisis differs. USSR's decision to withdraw the missiles was a call made by them after the imposition of the blockade by US. The question that we are faced with is that in the event of naval blockade by US, why does USSR decide to withdraw and not maintain the missiles in Cuba even though maintenance would result in a higher payoff for them. Even if we were to look at this crisis as a sequential game, we still fail to understand the choice of USSR's move given that US is the first mover and the move chosen by them is *blockade*.

To solve this puzzle, we refer to Brahm's Theory of moves and the alternative game of sequential bargaining.

		USSR	
		Withdraw	Maintain
		<i>Compromise</i>	<i>Soviet Victory; US Capitulation</i>
	Blockade	( <b>3,3</b> )*	(1,4)
USA		<i>Dishonourable US action</i> <i>Soviets thwarted</i>	<i>Honourable US action</i> <i>Soviets thwarted</i>
	Air Strike	(2,2)	(4,1)

Key: (payoff to US, payoff to USSR)

4= best, 3=next best, 2=next worst, 1=worst

\* non-myopic equilibrium

Brams modifies the payoff matrix to abandon the chicken analogy. The matrix is given above. Brams assumes that once a game begins either player can move from whatever outcome is the initial state (or status quo outcome) and, if it does, the other can respond, the first can counter-respond, and so on. The process continues until one player decides not to respond, and the outcome that they are at is the final outcome. Any outcome from which



neither player, looking ahead indefinitely, has an incentive to move to another state of the world, including the initial state, is said to be a non myopic equilibrium.

*Compromise* is not the Nash equilibrium but it is the nonmyopic equilibrium. The theory of moves makes use of intuitive logic to reach the nonmyopic equilibrium. The game starts with the installation of missiles in Cuba by USSR. It is followed by a blockade by the US navy wherein Soviet ships on their way to Cuba are intercepted. This outcome is labelled as “Soviet victory”. To address the question of why would USSR settle for compromise when it can increase its pay off by sticking with the *maintain* move, we analyse the “threat power” possessed by US. The *blockade* move opted by the US carries with it implicit threat of escalation of conflict in case US decides to up its game by engaging in air strikes. Brams’ explanation is that the *Compromise* outcome is a non myopic equilibrium, that is, neither player can do better by moving the game to another state of the world by changing its strategy choice, given that the other might then switch to another strategy, it might then be forced to also change its strategy, and so on.

### 3. Cuba and Turkey in the Cold War

The Kennedy administration having finally deciding on the naval blockade, a *Compromise* sent a letter to the Kremlin that very day on the 22<sup>nd</sup> of October; the first in a series of direct and indirect communication between the White House and the Kremlin. After a series of exchanges and a stalemate later, on 27<sup>th</sup> of October, Khrushchev sent a message indicating that any proposed deal for a resolution must include the removal of US Jupiter missiles from Turkey. That was the moment Kennedy faced another dilemma.

This dilemma again can be modelled by a Chicken game similar to the one discussed above wherein USSR’s two possible moves remain to *withdraw* or to *maintain* the installation of missiles. However, US’s two possible moves now were to either respond to Kremlin’s message and *Remove* the Jupiter missiles in exchange for the Cuban missiles or to *Not Remove* and stand firm on American demands given to USSR. Like the classic Chicken game, again we see that there exist two Nash equilibrium, one where *USA wins* as USSR withdraws missiles but the Jupiters remain and the other where *USSR wins* and USA withdraws Jupiters but the Cuban missiles remain. The middle ground lies in *Compromise* once again where USA pursues *Remove* and USSR pursues *Withdraw*. Lastly, if neither budge then the two enter into a *Mexican Standoff* and no party achieves victories and strategic tension is maintained with a still unresolved crisis.

In reality, Kennedy ignored the second message and made a bold move by instead sending Khrushchev a message listing the proposed steps for the removal of Soviet missiles from Cuba under supervision of the United States. However, later it was revealed that the United States was planning to remove the Jupiter missiles from Turkey anyway and it would do so soon. This message was communicated in secret by Attorney General Robert Kennedy to the Soviet Ambassador but this secret could not be and was not a part of public resolution as per USA. In the end, on 28<sup>th</sup> of October 1962, Khrushchev issued a public statement that the missiles in Cuba would be dismantled and finally in November the naval blockade was lifted as well. Thus, in our game, this time it was not a *Compromise* but rather a *US victory* as even

though the Jupiters were removed they were not removed as an immediate response to Kremlin's demands but rather as a secret, delayed chain of actions in April 1963 when the Jupiters were dismantled.

## USSR

		Withdraw	Maintain
	Remove	<i>Compromise</i>	<i>USSR wins</i>
USA		(3,3)	( <u>2</u> , <u>4</u> )
	Not remove	<i>USA wins</i>	<i>Mexican Standoff</i>
		( <u>4</u> , <u>2</u> )	( 1,1)

Key: (payoff to US, payoff to USSR)

4= best, 3=next best, 2=next worst, 1=worst

*Why US prevails?*

The Chicken game described above has two Nash equilibria such that there is a 50-50 chance of US victory and Soviet victory. However, in reality US was able to prevail over USSR in the sense that it was successful in getting USSR to remove its missiles from Cuba without conceding to the Soviet demand that the US remove its missiles from Turkey. Not enough attempts have been made to reason out this outcome. In this paper, we rely on the intuition behind Nigel Howard's *Theory of Metagames* to explain the same. Without delving into the details of metagames, we can successfully use the logic behind them which is that players send signals to one another before the game begins. These signals, verbal or otherwise, allow each of the players to anticipate the other's strategy choice. In other words, the theory of metagames attempts to model the impact of pre-play communication in a non-cooperative game environment.

Because preplay communication allows the players to form a common conjecture about the way the game will be played, the problem of multiple non-interchangeable and non-equivalent equilibria is potentially rendered moot (Zagare 2014).

The reason USA gets an upper hand in this scenario is because they make the first move and demand the removal of Soviet missiles from Cuba by conducting a blockade while there is a delayed response from Soviet Union in demanding the removal of US missiles in Turkey. This delay acts a signal of Soviet weakness and lack of seriousness and urgency with respect to their demands in this game. This is exploited by the United States to turn the tables in its favour.

## Concluding Comments

All these attempts made to explain the crisis are less than perfect. To begin with, these games don't fully capture the dynamic nature of the crisis. They don't take into account any secret channels of information that may have existed with the players that may have allowed them to not only preempt the moves and strategies of their enemy or make conjectures about them but to definitively know these moves which would then allow them to rig the game.

Also, one of the starkest deficiencies of these games is their inability to incorporate the different perceptions with which the two sides view the same game.

### *References*

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## Contraceptive Usage in India

*A Cross-Sectional Econometric Analysis of Indian States and Union Territories.*

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### Abstract

India was the first country in the world to have launched the National Program for Family Planning in 1952. With time, this program has transformed in terms of its policies and implementation. Currently, the goal is to stabilize population growth, promotion of reproductive health and reduction of maternal, infant and child mortality and morbidity. To stabilize population growth, use of contraceptives is one of the key factors. There are a number of factors that can affect its usage, ranging from number of years of education to poverty. The 29 states and 7 Union territories of India vary significantly in these factors and these differences are also expected to be reflected in the states' contraceptive use. This paper aims to study the effect these factors have on the use of modern methods of contraception and the efficiency of government family planning schemes. Two econometric models have been constructed to understand these socio-economic factors and efficiency of the services. In Model 1 our dependent variable is Use of Modern methods of Contraception in each state and union territory and the explanatory variables are Poverty Rate, Total Fertility Rate, Health worker ever talked to the female non-users of family planning (which accounts for the awareness of the public and effectiveness of health workers), the Female Median age at first marriage and Proportion of women with ten or more years of schooling. In Model 2 our dependent variable is again Use of Modern method of Contraception, and the independent variables are the Informed choices by women, Total Unmet needs and the Use of Any Method of Contraception (both modern and traditional).

*Keywords:* National Program for Family Planning, Contraceptive Usage, Population, Reproductive Health, Modern Methods, Traditional Methods.

JEL classifications: C21,I12

### 1. Introduction

In the early 1950s, India was the first country in the world to launch the National Program for Family Planning, with the main objective to slow down population growth. The program was accorded special priority in 1960-70s, but it received severe political backlash, especially during the years of National Emergency (1975-77). Nevertheless, the program was able to achieve universal awareness of the need and methods of family planning, and quadrupled the couple protection rate from 10.4% (1971) to 44% (1999). Mass media campaign, with the objective of relevant communication, provision of available database and quality broadcast, has played an important role in promotion and acceptability of contraception. After the Emergency period (1975-77), the National Family Planning Program was renamed as National Family Welfare Program.

Family planning through use of contraceptives tries to achieve a twin objective of reduced fertility rate, which is to have only a desired number of children, and to have those children with proper spacing in pregnancies. A number of spacing methods are used, including IUCD, Injectable contraceptive MPA, combined oral contraceptive, Centchroman pill, Progesterone-Only Pill, Condoms, Emergency Contraceptive pills, conventional vasectomy, minilap and so on. The newly launched methods of Injectable contraceptive MPA (Antara Program) and a non-hormonal weekly Centchroman pill, Chhaya, are said to be easy to use and can be discontinued when a woman wants to conceive. These are the modern methods. Traditional methods include rhythm, withdrawal and so on.

Contraceptive use is a vital element of quality of care and provision of family planning services in India. The program also tries to cover the socio-economic aspects of family planning, which includes, improving the quality of life, health and family planning.

The history of the National Family Welfare Program teaches us that we can do a lot by trying and creating the conditions for demographic transition, say with the policies and schemes, but most of the demographic variables (especially the ones related to human fertility) are majorly matters of economic, social and cultural changes. The factors such as total fertility rate, women talking to a health worker regarding the family planning methods (indicating the level of awareness), and women with at least 10 years of schooling, poverty rate and so on, reflect these economic, social and cultural changes, with a dimension of women's reproductive rights.

## **2. Literature Review**

Family Planning was important to the fifth Millennium Development Goals (MDGs) focusing on the improvement of maternal health (MDG 5) and certainly needed to be greatly focused on, to achieve Sustainable Development Goals (SDGs) - Goal 2 (ensuring healthy life and promoting well-being for all and at all ages) and Goal 5 (to achieve gender equality and empower all women and girls).

Family Planning 2020 is a global partnership committed to empower women and girls by investing in rights-based family planning. India, being one of the prime protagonists in this global platform, has extended its efforts to achieve the set goals. The focus has been on reducing the unmet needs by improved voluntary family planning services, supplies and information, expanding the basket of choices, increasing the access to contraceptives through community health workers, addressing equity in access to quality services for the poorest and most vulnerable and fostering partnerships with non-government sectors for improved service delivery.

One of the main objectives of the family planning and welfare program is to spread the knowledge of different planning methods, increase awareness, and to develop among the people an attitude in the favor of the use of contraceptives. Since the inception of the program, several knowledge, attitude and practice of family planning (KAP) studies have been conducted. In the late 1960s, scales were developed and utilized in KAP surveys, sample size increased and studies were done concerning the correlation of knowledge, attitude and practice of family planning. Knowledge and practice of family planning are strongly related to higher level of education, to labor force participation, to fertility. In most studies it is found that education is the prime influencing factor, with direct effect on fertility,

since it affects attitudinal and behavioral patterns of the individual (Drakshayani P. Kongawad, G.K Boodeppa, 2014).

A study by Ross & Stover found that the use of modern contraception increases when more modern methods are available (Ross & Stover, 2013). A Taiwan analysis showed a significant rise in the duration of contraceptive use when family planning programs began multiple methods, estimating that the addition of one method would increase total contraceptive use by about 12 percentage points from 30% to 42%. (Ranjan K P, Amit B, Hanimi R, Ranjan K P, 2018).

The traditional methods of family planning like rhythm and withdrawal may have health repercussions on both partners. High failure rates, lack of protection from sexually transmitted diseases are some of them (Faujdar Ram, ChanderShekhar, Biswabandita Chowdhury, 2014).

The contraceptive prevalence rates (CPR) in many states are low because of their dependence on government facilities, which are insufficient to meet the needs of the people. The private sector can be one of the partners in strengthening the status of contraceptive use in the Indian states. This approach, successfully established and implemented in many other countries to enhance the contraceptive use, is termed as total market approach or TMA. The TMA has been implemented in Nicaragua, Vietnam, Eastern Europe and Central Asia to create a sustainable model to make contraceptives available to even the poorest citizens. This approach directs people who can pay for the service to the private sector, freeing up public resources for those most in need and increasing family planning access to consistently underserved populations. (Drake JK, Thanh LHT, Suraratdecha C, Thu HPT, Vail JG, 2010; Drake JK, Espinoza H, Suraratdecha C, Lacayo Y, Keith BM, et al., 2011).

### **3. Why contraceptive usage trends are important?**

Contraceptive use helps couples and individuals realize their basic right to decide freely and responsibly if, when and how many children to have. The growing use of contraceptives has resulted in not only improvements in health-related outcomes such as reduced maternal mortality and infant mortality (Ahmed and others, 2012; Bhutta and others, 2014; Rutstein and Winter, 2015), but also improvements in schooling and economic outcomes, especially for girls and women (Canning and Schultz, 2012; Schultz and Joshi, 2013).

The landmark Programme of Action of the International Conference on Population and Development (ICPD) in 1994 recommended that all countries should seek to provide universal access to a full range of safe and reliable family-planning methods by the year 2015 (United Nations, 1994). More recent global partnerships that include efforts to expand contraceptive information, counseling and services include Family Planning 2020, which focuses on 69 of the world's poorest countries, and Every Woman Every Child, which has a broader strategy of accelerating improvements in the health of all women, children and adolescents by 2030. The United Nations General Assembly reaffirmed these commitments when it adopted the 2030 Agenda for Sustainable Development (United Nations, 2015). The new development agenda includes two targets relevant for family planning under broader goals on health, gender equality and the empowerment of women and girls.

The evidence on where the world stands now (especially with countries like India, with the second largest population in the world) with respect to the extent to which couples are

exercising their basic right to plan their families and, given the past rates of change, where the world is headed by 2030 serves as a summary of progress made this far and a signal of where further investments are needed (Trends in Contraceptive Use Worldwide 2015, United Nations).

#### 4. Methodology and Data

The data used for the model is secondary data, for each Indian State and Union Territory, collected from the National Family Health Survey (Round 4) for 2015-16. To understand the effect of various factors on the use of contraceptives and efficiency of government services we have constructed two econometric models in this paper using cross-sectional data for the following variables:

##### *MODEL 1:*

Model 1 shows the socio-economic factors affecting the use of modern methods of contraception.

*Dependent Variable: Using any modern method of Contraception (%):* Our dependent variable is the percentage use of modern methods of contraception in all the states and union territories of India. Different methods like female and male sterilization, injectables, condoms, implants, contraceptive pills, IUDs, emergency contraception and so on, are included in the same.

##### *Independent Variables:*

- *Female Median Age at First Marriage:* Age by which half of the respondents have been married (sample age group for women: 20-49 years).
- *Poverty rate (%):* The ratio of number of people (in a given age group) whose income falls below the poverty line (pre-calculated poverty line).
- *Women with 10 or more years of schooling (%):* Percent distribution of women in the age group of 15-49 years, by years of schooling completed (10 or more years of schooling).
- *Health worker ever talked to female non-users of family planning (%):* This variable shows the quality of services of the health workers and awareness of women (age group for women respondents: 20-49 years).
- *Total Fertility Rate:* The average number of children a woman would have by the end of childbearing years if she bore children at the current age-specific fertility rates. Age specific fertility rates are calculated for three years before the survey, based on detailed birth histories provided by women. Women, in the sample are in the age group of 15-49 years.

##### *MODEL 2:*

Model 2 shows the effectiveness of government family planning services in promoting the use of modern methods of contraception.

*Dependent Variable: Using any modern method of Contraception (%):*

Our dependent variable is the percentage use of modern methods of contraception in all the states and union territories of India. Different methods like female and male sterilization,



injectables, condoms, implants, contraceptive pills, IUDs, emergency contraception and so on, are included in the same.

*Independent Variables:*

- *Informed Choices by women (%)*: Informed choice refers to the percentage of women being informed at the time they started the current episode of method use, about the method's side effects, what to do if they experience any, and other methods they could use, by a health or family planning worker.
- *Total Unmet Needs (%)*: Proportion of women who (1) are not pregnant and not postpartum amenorrhea, are considered fecund, and want to postpone their next birth for 2 or more years or stop childbearing altogether, but are not using a contraceptive method, or (2) have a mistimed or unwanted current pregnancy, or (3) are postpartum amenorrhea and their last birth in the last two years was mistimed or unwanted. All women respondents in the sample are currently married and sexually active unmarried in the age group of 15-49 years.
- *Using any method of contraception (%)*: Percent distribution of currently married women in the age group of 15-49 years, by contraceptive method currently used by them, including both modern and traditional methods.

## 5. Empirical Analysis

*Model 1:*

<i>Variable:</i>	<i>Type of Variable:</i>	<i>Abbreviation</i>	<i>Unit:</i>
Y- Any modern method of contraception	Dependent	AnyModernMethod	%
X2- Female Median Age at First Marriage	Independent	MedianAgeMarriage	Years
X3- Poverty Rate	Independent	PovertyRate	%
X4- Women with 10 or more years of schooling	Independent	YearsofSchooling	%
X5- Health worker ever talked to female non-users of family planning	Independent	Awareness	%
X6- Total Fertility Rate	Independent	TFR	%



```

Model 1: OLS, using observations 1-36 (n = 20)
Missing or incomplete observations dropped: 16
Dependent variable: AnyModernMethod

-----
                coefficient   std. error   t-ratio   p-value
-----
const           155.303         42.7202    3.635     0.0027 ***
MedianAgeMarriage -3.61474         1.94704   -1.857     0.0845 *
PovertyRate     -0.541608         0.228364  -2.372     0.0326 **
YearsofSchooling -0.219091         0.179716  -1.219     0.2429
Awareness       0.770224         0.270247   2.850     0.0128 **
TFR             -10.1013          3.61382   -2.795     0.0143 **

Mean dependent var 49.50000   S.D. dependent var 11.33945
Sum squared resid 549.9961   S.E. of regression 6.267810
R-squared          0.774876   Adjusted R-squared 0.694474
F(5, 14)          9.637586   P-value(F)         0.000376
Log-likelihood    -61.52056   Akaike criterion   135.0411
Schwarz criterion 141.0155   Hannan-Quinn      136.2074

Excluding the constant, p-value was highest for variable 4 (YearsofSchooling)
    
```

$$AnyModernMethod = 155.303 - 3.61 (MedianAgeMarriage) - 0.54(PovertyRate) - 0.21 (YearsofSchooling) + 0.77(Awareness) - 10.10(TFR)$$

Our model encompasses of 5 independent variables that we chose for this analysis. The B<sub>2</sub> coefficient was -3.61, inferring that for every one unit (100 percentage points) increase in the median age of marriage, there is a corresponding 3.61 percentage point decrease in the use of modern method of contraception. The B<sub>3</sub> coefficient for Poverty Rate was -0.54 that is for every one percentage point increase in poverty, the contraceptive use decreases by 0.54 percentage points. The B<sub>4</sub> coefficient was -0.21, indicating that for every one percentage point increase in Women with 10 or more years of schooling, there is 0.21 percentage point decrease in the use of modern method of contraception. The B<sub>5</sub> coefficient for Awareness was 0.77 that is for every one percentage point increase in awareness, the contraceptive use increases by 0.77 percentage points. The B<sub>6</sub> coefficient for Total Fertility Rate was -10.10, that is for every one percentage point increase in TFR, the contraceptive use decreases by 10.10 percentage points. The respective t-values for the variables are -1.857, -2.372, -1.219, 2.850 and -2.795 all of which are significant at 95% level of significance *except for the “YearsofSchooling” variable.*

**MODEL 2:**

<i>Variable:</i>	<i>Type of Variable:</i>	<i>Abbreviation:</i>	<i>Unit :</i>
Y- Any modern method of contraception	Dependent	AnyModernMethod	%
X1- Informed Choices by Women	Independent	InformedChoices	%
X2- Total Unmet Needs	Independent	TotalUnmetNeeds	%
X3- Using any method of contraceptives	Independent	AnyMethod	%

Model 3: OLS, using observations 1-36 (n = 35)				
Missing or incomplete observations dropped: 1				
Dependent variable: AnyModernMethod				
	coefficient	std. error	t-ratio	p-value
-----	-----	-----	-----	-----
const	28.6650	11.6502	2.460	0.0196 **
InformedChoices	-0.0228799	0.0613345	-0.3730	0.7117
TotalUnmetNeeds	-0.829412	0.338998	-2.447	0.0203 **
Anymethod	0.588199	0.131660	4.468	9.82e-05 ***
Mean dependent var	44.70857	S.D. dependent var	13.99889	
Sum squared resid	778.2959	S.E. of regression	5.010621	
R-squared	0.883190	Adjusted R-squared	0.871886	
F(3, 31)	78.12976	P-value(F)	1.51e-14	
Log-likelihood	-103.9436	Akaike criterion	215.8873	
Schwarz criterion	222.1086	Hannan-Quinn	218.0349	
Excluding the constant, p-value was highest for variable 7 (InformedChoices)				

$$\text{AnyModernMethod} = 28.6650 - 0.022\text{InformedChoices} - 0.82(\text{TotalUnmetNeeds}) + 0.58(\text{AnyMethod})$$

This model encompasses of 3 independent variables now. The  $B_2$  coefficient was -0.022, inferring that for every one percentage point increase in the informed choices, there is a corresponding 0.022 percentage point decrease in the use of modern method of contraception. The  $B_3$  coefficient for Total Unmet Need was -0.82 that is for every percentage point increase in total unmet needs, the contraceptive use decreases by 0.82 percentage points. The  $B_4$  coefficient was 0.58, for every percentage point increase in any method of contraception use; there is a 0.58 percentage point increase in the use of modern method of contraception. The respective t-values for the variables are -0.3730, -2.447 and 4.468 all of which are significant at 95% level of significance *except for the "InformedChoices" variable.*

## 6. Conclusion

### MODEL 1:

In this model, we *regressed use of modern methods of contraception* on female median age of first marriage, poverty rate, percentage of women with 10 or more years of schooling, total fertility rate and percentage of health workers who have talked to female non-users of family planning. This model aims to show the effect of economic and sociological factors on this use.

The *median age of first marriage* has a *negative coefficient and is significant* in its effect on the usage of modern methods of contraception. This shows the higher the Age by which half of the female respondents have been married at their first marriage; the less likely they are to use any modern methods of contraception. The coefficient of *poverty rate is negative and highly significant.* This suggests that the lower the poverty rate, the higher will the use of modern methods. The factor that shows the *percentage of health workers who have ever talked to the female non-users of family planning* can also reflect the level of awareness among the users and the efficiency of health workers. The coefficient of this variable is *positive, with high significance,* showing that the higher the proportion of health workers

talking to female non-users, the higher is the use of modern methods, which probably means that, the more aware the non-users are and the more efficient the health workers are, more women start using the said methods. *Total fertility rate*, calculating the average number of children a woman would have by the end of childbearing years if she bore children at the current age-specific fertility rates, has a *negative coefficient and is highly significant*, that is, the lower the rate the higher is the use of modern methods of contraception.

However, *proportion of women with ten or more years of schooling* is an *insignificant variable with a negative coefficient*, probably because the quality of education matters more. This can be taken up for further research.

From this model, we can conclude that economic factors like poverty and hence income level and social factors like total fertility rate, awareness and women's age at first marriage are very important in determining the use of contraceptives, especially the modern methods.

#### MODEL 2:

In this model, we *regressed use of modern methods of contraception* on informed choices by women, total unmet needs and use of any method of family planning, including both modern and traditional ways. This model aims to show the efficiency of government family planning services on the use of modern methods of contraception.

The variable, *total proportion of women with unmet needs* is *highly significant* in our result, with a *negative coefficient*, showing that the lower the percentage of women's unmet needs, the higher the use of modern methods of contraception. *Using any method of contraception* shows the percent distribution of currently married women in the age group of 15-49 years by contraceptive method currently used by them, including both modern and traditional methods. A *positive sign of the coefficient* and *high statistical significance* of the variable reflects that the higher the level of use of any method, the higher will be use of modern methods of contraception.

However, *percentage of women making informed choices* is an *insignificant variable with a negative coefficient*, and this can be taken up for further research.

From this model, we can conclude, that the factors like use of any method, that is both traditional and modern methods and the total unmet needs of women are very important in influencing the use of modern methods of contraception. These reflect the efficacy of government services, because usually most people depend on public sources of contraceptives, and probably there is a need for the government to tie-up with private sources for increasing the supply of contraceptives, as successfully done by some other countries. Perhaps, the health workers working in this field, need to be more efficient in making women more aware of different methods, their side effects and what is the solution if they face any, as it will help women make more informed and aware choices.

One of the main problems we faced while working on this paper was the lack of availability of data for each state. Some of the factors such as the median birth interval and exposure to family planning messages couldn't be included in the model because the detailed information for each state and union territory was not available in the government survey report. Some of the other factors that could have been incorporated are the needs and demands for family planning, men's contraception-related perception and knowledge, and so on.

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## Effect of Immigration on Demand and Supply of Feminised Jobs: A Comparative Analysis

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### Abstract

The paper focuses on women who leave their country of origin in search of economic opportunities and work. Many migrant women are invisible players in the global economy and often suffer pervasive violations of their human and labor rights. Women contributed \$300.6 billion dollars in 2016, which equals half of the world's remittances. This indicates that women move as much money as their male counterparts, however at a greater percentage of their income, because they usually earn lower wages than men. The feminization of migration is a dynamic and multidimensional phenomenon. A major objective of our study is to expose the unprotected status and vulnerability of migrant women. Irrespective of the sector or job they are employed in, migrants face much more unfavorable conditions, for long hours and for lower amounts of payment. Also, they have no channels to claim their rights in cases of non-payment of wages. A migrant woman also faces the additional risks of sexual harassment and, in the case of working in the commercial sex industry, sexual violence and sexually transmitted diseases. In the United States of America, victims of trafficking are almost exclusively immigrants, and the majority of them women. This paper looks at the effect of migration on the demand and supply mechanism of feminised jobs with the help of a comparative analysis. The methodology adopted is that of empirical-statistical analysis.

Keywords: Feminisation, Migration, Personal Remittances paid

JEL Classification: J61

### 1.Introduction

Arlie Hochschild first used the term "global care chain" to refer to "a series of personal relationships between people worldwide based on paid or unpaid care work." In this pioneering work, it has typically been seen that a global care chain involves: an older daughter from a poor family who cares for her siblings while her mother works as a nanny caring for the children of a migrant nanny who, in turn, cares for the child of a rich country family. Many analysts talk about the internationalization of households, whereby this domestic labor trade creates transnational networks between different households and families around the world.

The global care chain is therefore started by a woman in a rich, developed country who is unable to fulfil her "domestic duties" after entering the labor force. She then employs another woman to take on the workload at home. This other woman usually comes from a poorer household and is an international migrant. Most of the time, this other woman also has dependent children in her home destination and therefore requests the help of another woman from an even poorer background to replace her in her home work. The chain continues

gradually and, as we go down, the value attributed to the work decreases and at the end of the chain often becomes unpaid.

The global care chain is a feature of an increasingly globalized world in which the demand for migrant workers in developed countries continues as well as the supply of migrants from less developed countries, continues to grow. The underlying causes of this phenomenon include the entry of women into the workforce in the developed world, which leads to a reduced ability to care for children and the elderly, the lack of family-friendly policies and childcare facilities in the workplace increases the demand for caregivers at home, changes in the structure of the family, the "care deficit" i.e., lack of public care in developed countries, increasing longevity and size of the elderly population in developed countries and lastly, increasing prosperity in richer countries.

The global care chain analysis has opened theoretical perspectives and discursive spaces for the sophisticated understanding of the processes of globalization. Based on the methodology of the global network and knowledge of the grounded, textured and embodied nature of transnationalization of care, the global care chain analysis has contributed significantly to a better understanding of the socio-spatial dimensions of various forms of care worldwide and the identification of transnational policy and policy responses. It becomes important, therefore, to place international domestic labor trade in the context of an overall increase in international migration and, in particular, the feminisation of international migration.

## **2. Review of Literature**

The Global Care Chain approach is primarily concerned with the transfer of care workers and resources from poor to rich countries through the employment of women from poor countries as caregivers in their middle-class homes. This transfer has emotional and material consequences for the organization of care in migrant caregivers' families, often leading to transnational care constellations that include "personal links between people around the world based on paid and unpaid care work" (Parreñas 2001). Early focus on transnational domestic workers and their experience with exploitative labor and citizenship regimes has been expanded to include service sector studies and intimate economies covering a variety of care mobility regionalities (Ehrenreich and Hochschild 2003).

Critical accounts of global capitalism, including analysis of the global care chain, tend to be based on the distinction between economic and moral, market and society. On the one hand, collective interest and altruism dominate self-interest and profit (Yeates 2012). On the other hand, the neoliberal concept of autonomy invokes a rational subject that is risk-taking, self-choosing and capable of pursuing private interests vis-à-vis fellow human beings in competition. Dependence is scorned for the neoliberal subject and lack of self-care is a mark of social inferiority. Therefore, a wall is built between the self and others, between the dependent and the sovereign (Tronto 2013).

Another strand of literature deals with the redistribution of care in the world's southern sending countries. Haidinger (2008) and Parreñas (2005) suggest that other women usually take over the caring responsibilities of women migrants, and that men's migration also often reinforces traditional gender parenting roles (Parrenas 2005). However, Manalansan (2006) outlines how the migration of the mother can also lead to the husband's taking over the work of "mothering." However, the research of the social dynamics of gender migration is still too narrowly focused on the relationship between South and North and a specific selection of countries. They argue for increased interest as care importers in southern and middle-income countries. The social care structures in these countries often differ significantly from those in the global North, and the global care chains that emerge in these contexts are therefore also very different.

However, it is clear that when women and men emigrate to work on a massive scale, leaving their families behind, gender-based social structures in source countries are changed in complex ways. This is especially true when it is recognized that the change is linked to the migration of fathers, mothers and sons and daughters, both single and married, who represent a complexity of sexual identities (Manalansan 2006). In fact, it is now widely acknowledged that the restructuring of care involves processes in which the global outsourcing of care work not only reproduces gendered social orders, but also interacts with other forms of inequality. In some cases, paid domestic work allows middle-class women to achieve greater equality while maintaining working-class and migrant women in non-standard jobs that are traditionally feminized (Sarti and Scrinzi 2010). Similarly, however, during the migration experience, and often quite strategically, the gendered social position, sexuality and class of the migrant can experience changes (Näre 2010).

### **3. Methodology**

Research presented in the paper relies heavily on the empirical-statistical methodology, and data used for observation has been drawn from publications of governmental and international organisations. According to the author, the research required using macroeconomic data which is essentially secondary in nature. The data used in the paper is taken from the period 1995-2015.

The authors have taken five major centres that attract immigrants due to their economic size. These centres are the United States, Russia, India, Germany and Saudi Arabia.

We observed the trends of two variables - Personal Remittances Paid, in million USD and Female Migrants, as a share of Total Migration for the time period mentioned above. Though the variables do not produce a precise image of the situation due to lack of information on important parameters such as remittances sent by women, however, the general pattern that emerges is instructive and informative.



## 4. Results

The results indicate that as more number of women migrate as a share of total migration, the remittances paid to the country of origin show a decline in the growth rate. This trend hints towards the phenomenon that women tend to get concentrated in low paying jobs - mainly domestic work. However, this model doesn't explain the trends noticed in the case of India and Saudi Arabia. The authors argue that due to the fact that female labor force participation rate is low in both India and Saudi Arabia, there is less demand for domestic workers, and thus less inflow of women migrants for low-paying jobs into the country. The other three nations, however, show high rates of female labor force participation, and thus women who have a job require another woman to take care of her children, creating demand for domestic work.

### *The United States of America*

The data exhibits a trend of a decrease in remittances growth along with increased migration of women. The red line indicates the percentage of women, as a proportion of total migration that enter the USA annually. The blue line indicates growth in remittance paid.

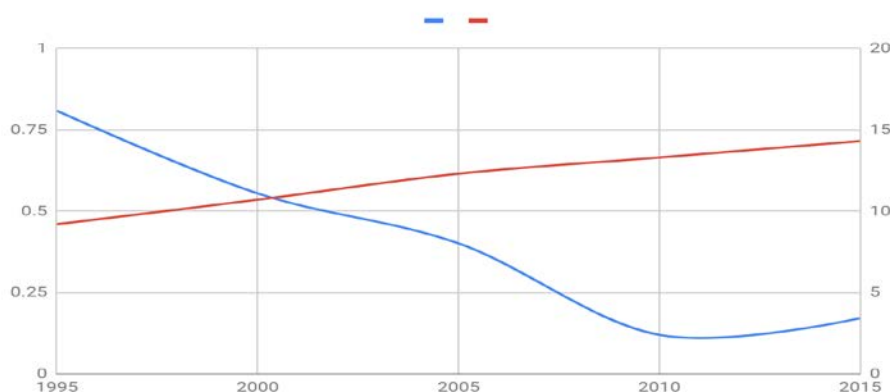


Figure 1: Female Migration and Remittances Growth for the USA (1995-2015)

Source: UN DESA

### *Germany*

The data exhibits a trend of a decrease in remittances growth along with increased migration of women. The red line indicates the percentage of women, as a proportion of total migration that enter Germany annually. The blue line indicates growth in remittance paid on an annual basis.



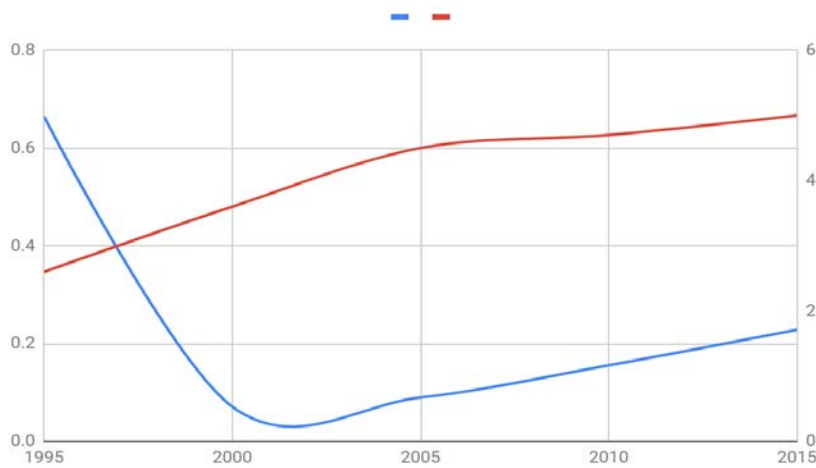


Figure 2: Female Migration and Remittances Growth for Germany (1995-2015)  
Source: UN DESA

**India**

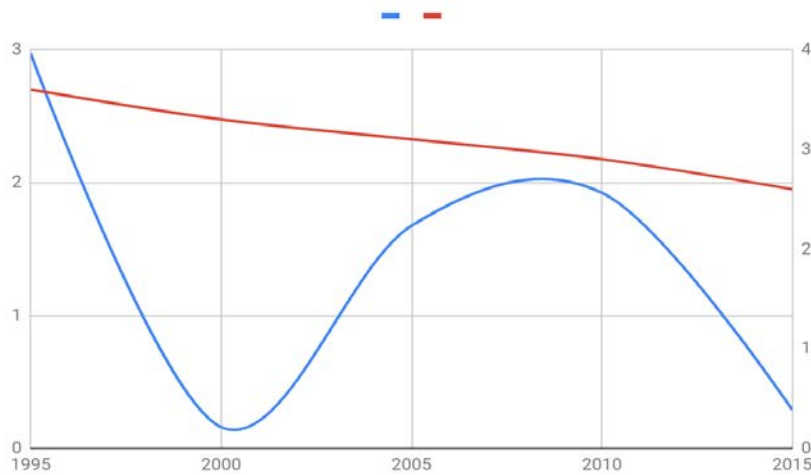


Figure 3: Female Migration and Remittances Growth for India (1995-2015)  
Source: UN DESA

The data doesn't exhibit any particular pattern that could explain the relationship between the two variables. The red line indicates the percentage of women, as a proportion of total migration that enter India annually. The blue line indicates growth in remittance paid on an annual basis.

**Saudi Arabia**

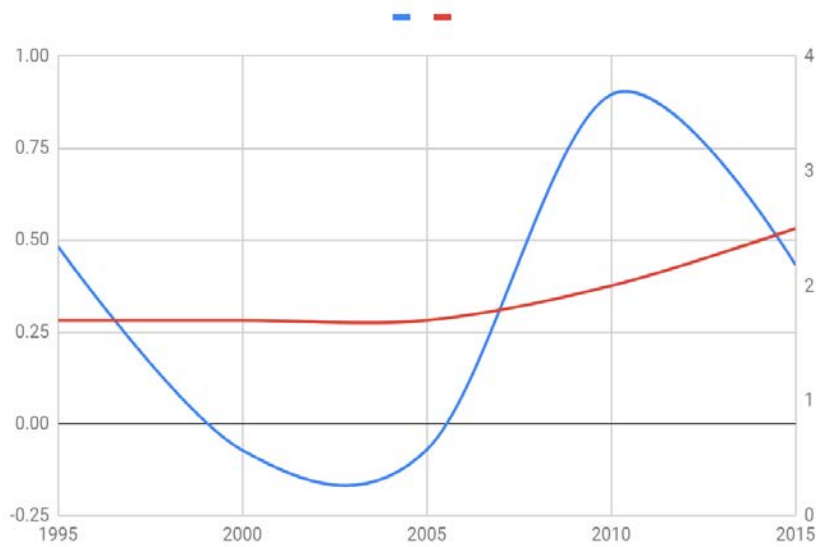


Figure 4: Female Migration and Remittances Growth for Saudi Arabia (1995-2015)  
Source: UN DESA

The data doesn't exhibit any particular pattern that could explain the relationship between the two variables. The red line indicates the percentage of women, as a proportion of total migration that enter Saudi Arabia annually. The blue line indicates growth in remittance paid on an annual basis.

**Russia**

The data exhibits a trend of a decrease in remittances growth along with increased migration of women. The red line indicates the percentage of women, as a proportion of total migration that enter Russia annually. The blue line indicates growth in remittance paid on an annual basis.

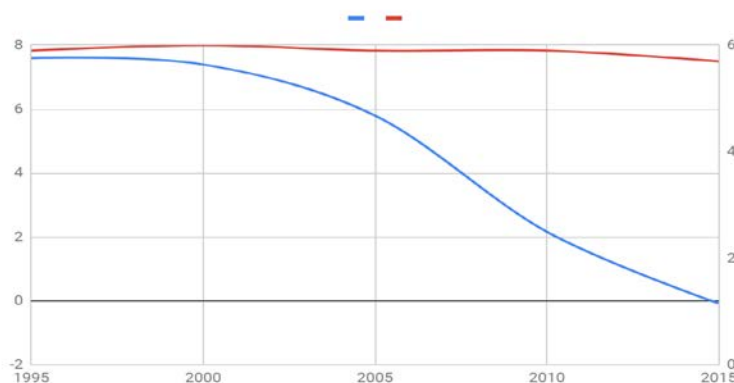


Figure 5: Female Migration and Remittances Growth for the Russian Federation (1995-2015)  
Source: UN DESA

## 5. Limitations

Since the country-level data on remittances, as part of the balance of payments, are not broken down by gender, it is difficult to estimate the impact of the increasing feminisation of international migration on the amount of remittances received by developing countries. Also, the gender of migrants influences the underlying motives for migration and remittance and the frequency and quantity of remittances. The impact of remittances on economic development can also be significantly affected by the gender of migrants. Research, however, is limited in terms of gender and remittance development outcomes. It is therefore difficult to predict the possible influence on remittances of the feminization of international migration flows and their correlation with economic growth and poverty reduction.

## 6. Inferences

Today, women represent approximately half of the world's total migrant population. As independent workers, they move more and more to more developed countries in search of a better life for themselves and their families. They tend to find work in traditionally female-dominated occupations such as domestic work, reproducing patterns of gender inequality. The connections between domestic work and the international migration of women are well established. The growing demand for domestic services by households is considered to be one of the main triggers for the feminization of labor migration in recent decades.

Migrant domestic workers provide essential services to the countries in which they travel, contributing to the richness of ageing societies and the sustainability of the welfare and employment systems of these countries. However, as with other migrant workers, domestic migrant workers can face additional vulnerabilities, leading to human and labor rights violations. Their vulnerabilities are often linked to precarious recruitment processes, social and cultural isolation due to language and cultural differences, lack of advance information and accurate information on employment conditions, lack of coverage and enforcement of labor law.

Domestic workers often work too long hours, with little pay and almost no access to social protection. Migrant domestic workers hidden in private households are vulnerable to a number of human rights violations. Many are vulnerable to sexual and gender-based violence and cannot freely meet or practice their religion with friends and associates.

Migrant domestic workers are disproportionately exposed to abuse compared to nationals in the same sector and face specific disadvantages because they are non-nationals, including dependence on recruitment agencies, lack of reliable information on migration procedures, limited freedom to change employers, substitution of contracts, retention of travel and identity documents and insufficient housing. When they are in an irregular migration status, their vulnerability is exacerbated.

## 7. Conclusion

Gender mainly affects remittances due to the conditions in which migrants find themselves in host labor markets and the strength of their family relationships. Although studies on the feminisation of migrants and remittances are inconclusive and depend on the examined corridor (which links the sending and receiving countries of migrants), women's migration at global level appears to be positively correlated with the remittances received by developing countries. The remittances of women migrants are more resilient and reliable than the remittances of men.

The phenomenon of the global care chain also has a potential destabilising effect on the family. Having one parent, or in many cases both, living abroad can have a detrimental effect on the well-being of children left behind, although it has been highlighted that remittance gains have helped improve the education of children left behind. Migration therefore seldom allows for a stable, united family.

Potential positive effects of remittances from women migrants on poverty reduction in home countries pose challenges to policymakers. More relevant and detailed gender-based information would help them develop policies to reduce the employment, wage and remittance costs of women migrants. Improved working conditions for migrant women (long-term contracts, better-paid jobs, better matching jobs) and lower bank charges would allow them to remit more money.

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## Global Growth Trilemma: A South Asian Perspective

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### Abstract

This paper explores the interlinkages between two different international laws and then examines their implication on sustainable growth in South Asia, with special emphasis on India. The first law is the Paris Agreement on Climate Change which requires signatories to incorporate into their national agenda and policies the goal of abatement of carbon emissions. The paper seeks to examine the effect that reduction in carbon emission has on economic growth. The second international issue that we are dealing with is that of climate migrants. This issue has been hotly debated in the last decade. Climate migrants haven't been granted the status of refugee due to certain ambiguities regarding the nature of this form of migration. Yet, climate migrants continue to cross international borders to seek protection against climate disasters. There is a great chance that the Refugee Convention may be modified in the coming years to grant refugee status to climate migrants as the doom is impending. An attempt has been made to discuss the implications of climate migration on host countries in South Asia. This paper envisages a scenario in which the interactions between these two international commitments can trap a country within a trilemma between economic growth, sustainable growth through environment protection and inclusive growth through human rights protection.

Keyword: Growth Trilemma, Climate migrants, Carbon emission

JEL Classifications: C32, K33, O33, Q01

### 1. Introduction

One metre rise in sea level will can put 145 million people at risk, out of which 41% will be in South Asia. Currently, 20 million people are migrating from Bangladesh to India annually owing to flooding of low lying regions due to global warming. If climate migrants are granted refugee status then India will be legally responsible for the integration of these migrants into India. These refugees will expand India's population. In the last 40 years, Bangladeshi refugees have expanded India's population by 12 to 17 million. These refugees will add to the labour force of India. In the past, refugees were welcome in most countries because output was limited by labour. But the situation is different now as output is being limited by land and capital in developing countries. This swelling of workforce will put a strain on the scarce resources. According to the Solow Model, the aggregate output grows at a rate equal to the rate of population growth, in the absence of technological progress. CO<sub>2</sub> emissions have been found to granger cause GDP, so an increase in aggregate output due to increase in population will raise the level of carbon emission, thus posing an impediment in the path to fulfilling the commitment towards Paris agreement and environment protection. It has been found that the relationship between population size and total carbon dioxide emissions has remained very stable through time, and this holds for developed countries and less-developed countries.

Population size continues to have a large effect on the scale of anthropogenic carbon dioxide emissions and thus climate change. Simply, population size is a major contributor to total carbon dioxide emissions.

Also the role of energy efficiency in reducing net carbon emissions is called into question because carbon intensity or energy efficiency is only one of the contributors to net carbon emission. Population and GDP can put a limit to the amount of restraint you can put on CO<sub>2</sub> emission by energy efficiency. This brings us back to where we started that the increase in population due to inflow of climate refugees can put a break on the reduction of carbon emission. We have observed that these international commitments can come in the way of each other and can have a conflicting nature. Countries will have to tread carefully when trying to balance these goals lest they find themselves in this trilemma. The paper also suggests ways out of the trilemma which involve taking gradual steps towards reducing carbon emission in ways that do not hamper the growth of the developing world while also allowing for better management of the refugee crisis.

This paper is divided into four sections. The first section deals with climate migration in South Asia and the implication of increase in population of India in particular. The second section discusses the CO<sub>2</sub> emission abatement and its implication on economic growth. The third section brings together the findings from the first two sections and elucidates on the trilemma. The final section gives policy recommendations and suggests ways out of the trilemma.

## **2.Literature Review**

There is no literature available on global growth trilemma, however separate aspects of the trilemma have been researched and conclusions have been drawn. To begin with, UC Jha(2004) and Architesh Panda (2010) point out the rise in soil degradation and deforestation leading to environmental refugees from villages of Bangladesh to resource scarce cities of India. This coupled with ongoing debate on the law of climate refugees by United Nations have widespread implications on economic growth as well as environmental protection in India.

The rise in unskilled population due to migration from Bangladesh to India would have adverse impact on the economic growth in India as noted by implications of rising population on GDP growth in Harrod-Domar model, Solow model and the new growth theory of conditional divergence. Robert Chambers (1986) points out the distributional effects and rise in social marginal cost of refugee influx on the host countries. Jorgenson, Andrew K., and Brett Clark (2010) conclude that the relationship between population size and total carbon dioxide emissions has remained very stable through time, and this holds for developed countries and less-developed countries. While they found no evidence of decoupling or intensification of this population/environment relationship, they emphasise that population size continues to have a large effect on the scale of anthropogenic carbon dioxide emissions and thus climate change. Simply, population size is a major contributor to total



carbon dioxide emissions, and according to their results it has been consistently so for close to 50 years.

The Paris Agreement recognizes the rise in Carbon emissions of the world and mandates its participants (of which India is a part) to maintain a prescribed low level of emissions every year. H.A.C. Prasad and J.S. Kochher(2009) point towards the perspective of the developed countries on carbon emission reduction in developing countries. The OECD and some other developed countries want the developing countries to reduce their carbon emissions to ensure carbon equity in the long run. On the other hand, they state that the energy demand of India will rise with increasing industrialisation to meet the demands of growing population. Any GHG abatement in India would come at a high cost of fall in economic growth, as it requires a shift from cheap fossil fuels to costlier non-carbon energy. Tiwari, Aviral Kumar (2012) show that that environmental degradation (i.e., CO<sub>2</sub> emissions) granger-causes economic growth in the long run. Schmalensee, Richard, Thomas M. Stoker, and Ruth A. Judson (1998) conclude the positive relationship between economic growth and Carbon emissions in developing countries, as also validated by the inverted U-shaped environmental Kuznets curve proposed by Brock, William A., and M. Scott Taylor (2010). Mark R. Greer (1995) shows that the excise tax on fossil fuels aimed at environmental protection would result in fall in economic growth.

Mark R. Greer (1995) and Brock, William A. and M. Scott Taylor (2010) provide ways out of the trilemma. They use technological progress as a means of ensuring high GDP growth along with environment protection. Mark in addition emphasises on the need to gradually phase out fossil fuels and create a demand for environmental friendly technology. This demand induced technological progress would help (here, USA) to develop a comparative advantage in that technology and result in better terms of trade; thus spurring higher economic growth.

### **3.Data Collection and Research Methodology**

Data has been collected from World Bank website. Since the time series data for several variables overlaps only over few years, carbon dioxide emissions are forecasted for four years (2014-2018) by fitting a linear trend.

The theories have been proven using the following methods-

Existing research

Correlation among variables of interest

Econometric analysis using linear regression models

Granger Causality test among variables of interest

Throughout the paper, it has been assumed that the CLRM (Classical Linear Regression Models) are satisfied. While proving relation between two variables, all other economic factors are held constant.

### **4.Climate Refugees**

The 1951 Refugee Convention is a key international law and it defines a refugee as ““someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion.””



Back in the 1950s when this definition was being drafted, the only possible reasons for persecution that world leaders and lawmakers could envisage were the ones that have been included in the extant definition of a refugee. But over the years new challenges have presented themselves in front of the global community and the most germane one to this discussion has been climate change and global warming. Global warming is a gradual rise in the average temperature across the globe. This rise in temperature can primarily be attributed to the excessive emission of greenhouse gases, especially CO<sub>2</sub> and the depletion of the ozone layer due to CFCs. Global warming is causing ice caps to melt resulting in a rise in sea level. Although, this process is taking place at a glacial pace, scientists and environmentalists over the world have confirmed that the threat is imminent. The rise in sea level will cause islands to submerge and flooding of low lying areas and coastal regions. Several islands have begun to experience occasional flooding. Islands like Maldives, Kiribati and Tuvalu are expected to submerge fully in the next 30 to 50 years.

Moreover, global warming is resulting in erratic monsoon leading to crop failure and a loss of arable land. This threat to life and livelihood posed by climate change is leading to migration. People are moving to areas that they find safer and areas where they can find decent work. What needs to be noted, however, is that this kind of migration is not a one of kind case but this may be something bigger and may have a pattern. In such a case, it becomes important that the global community recognises migration driven by climate change as a form of persecution. Although the climate migrants haven't been granted a refugee status yet, there is a high chance that this might change owing to the amount of attention that this issue has attracted in the last decade and world leaders have begun to deliberate on the question of whether or not climate migrants should be granted refugee status. In the event, that this happens and the Refugee convention is modified, countries will become obliged to grant asylum to climate migrants and integrate them into their population. Even in the absence of this provision large scale migration continues to happen.

#### *4.1 Displacement in South Asia*

As mentioned earlier, India enjoys a dominant position in the geopolitically in South Asia. Even when it comes to climate change driven relocation and displacement, India's position continues to be important. India shares border with Bangladesh. Bangladesh has been experienced coastal flooding in the past few decades owing to climate change. Furthermore, the amount of arable land in Bangladesh has shrunk from 73% of total land in 1988 to around 59% in 2015. The use of the linear trend model to forecast the amount of arable land shows that by 2050 the amount of arable land in Bangladesh will be 44.15% of total land.<sup>1</sup> When the amount of arable land in Bangladesh is regressed on 'time't' and CO<sub>2</sub> emissions from 1972 to 2015, the slope coefficients have a negative sign which is in accordance with our a priori expectation. As CO<sub>2</sub> emission increases by 1 unit, the amount of arable land decreases by 0.000138 percentage points. Every year the amount of arable land decreases by 0.12

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<sup>1</sup> To forecast the percentage of arable land, carbon dioxide emissions have been forecasted by fitting a linear trend model to the available data.

percentage points. The t ratios turn out to be significant at 5% level of significance. The results have been attached in the appendix.

The loss of arable land coupled with flooding has and will continue to drive Bangladeshis into India in search of safety and livelihood.

Flooding currently displaces 5,00,000 people every year in Bangladesh. It has been estimated that currently 20 million people are migrating from Bangladesh to India annually. One of the studies by Homer Dixon has concluded that Bangladeshi migrants have expanded India's population by 12 to 17 million in the past 40 years due to environmental reasons. This trend is likely to increase in the future with effects of climate change becoming more catastrophic (Panda, 2010).

#### *4.2 Increase in Population due to Climate Migration: Implications*

As the size of population grows, both the number of consumers and labour (producers) rises. Population is said to put a downward drag on per capita income. According to the Harrod Domar equation,  $g^* = s/\theta - n$ , Per capita growth rate ( $g^*$ ) falls as population growth rate ( $n$ ) rises, other things remaining the same. In the Harrod Domar model, population is acting only as a consumer.

The Solow model treats population growth a bit differently. It postulates that total output grows at a rate that is equal to the population growth rate. This implies that a larger population would mean more working hands. At the same time, a higher population growth rate will tend to lower per capita output as the existing capital stock will be spread more thinly over a larger population. A look at these models helps to understand the basic nature of population growth rate. With increase in the number of climate migrants moving to India from across the border, the size of population will rise as well as the population growth rate will witness an upward trend. Let us delve a little deeper into how this form of population growth will impact economic growth in India.

India is already burdened with a large population and the prodigious size of its population has proved to be a major bottleneck in its path to development. In earlier times, labour was the limiting factor in growth of output but in the 21st century, land is the limiting factor. An increase in the amount of labour beyond a point will add very little to agricultural production. Looking at the profile of these migrants, one can conclude that this cohort will largely consist of unskilled labour or farm labour. With agricultural production close to saturation, the unskilled labour will be looking at the informal services sector for employment. Industrial expansion has been slow in India and may not be able to keep pace with the rising population. One may argue that the low physical capital relative to unskilled labour may increase the rate of return to physical capital thus increasing the pace of output growth, making India grow faster than before. But the presence of unskilled labour lowers the ratio of human capital to unskilled labour which brings down the rate of return to physical capital. Thus, the effect of the presence of unskilled labour on rate of return to physical capital is ambiguous (Ray, 1998). On running Granger causality tests, we find that for a time series data of India, population granger causes GDP as well as CO<sub>2</sub>. This result is quite insightful as it brings to light another dimension of population growth rate: its effect on carbon emissions and the environment. If population granger causes CO<sub>2</sub>, then past values of population must contain some information that helps predict values of CO<sub>2</sub>. If population is expected to rise, then CO<sub>2</sub>

emissions will also rise. The cross sectional correlation between population and carbon emission for the year 2014 is 0.8 which shows that larger values of population can be associated with larger values of carbon emission. The time series correlation between population and carbon emission for India is 0.9.

These results help to confirm the hypothesis that an increase in population due to migration can lead to an increase in CO<sub>2</sub> emission.

A more welcome effect of increasing population is its effect on rate of technical progress. A large population can drive innovation and technical advancement as it has a larger number of innovators and inventors. If the total population is  $P$  and the proportion of the population engaged in the production of ideas in the economy, then  $uP$  is the number of people working in the knowledge and research sector. Even if  $u$  remains constant over time, a rise in  $P$  will increase  $uP$ . The production of ideas is an increasing fraction of  $uP$ , then as  $uP$  rises, the stock of ideas and the the production of knowledge will also rise.

However, this rosy picture needs to be viewed with a lens of skepticism and a caveat needs to be established. Technical progress requires a skilled workforce . If the level of human capital in the economy is low, then technical progress may not be so easily achieved. South Asian countries don't have excellent human capital indicators. Hence, this process may not occur as smoothly as it appears.

## **5. Carbon emissions and the Paris Climate Agreement**

The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse-gas-emissions mitigation, adaptation, and finance, starting in the year 2020. It has 195 signatories. The Paris Agreement's long-term goal is to keep the increase in global average temperature to well below 2 °C above pre-industrial levels; and to limit the increase to 1.5 °C, since this would substantially reduce the risks and effects of climate change. Under the Paris Agreement, each country must determine, plan, and regularly report on the contribution that it undertakes to mitigate global warming. It requires countries to work out a strategy to mitigate their carbon footprint.

### *5.1 Abatement of CO<sub>2</sub> emission : Implications*

GDP growth and sustainable growth at times appear to be at loggerheads with each other. The unwillingness on part of nations to become party to agreements that require them to cut down their carbon emission stems from the fear that this will dampen their rate of economic growth. Most nations place a higher value on current consumption over the perils of environmental degradation that seem distant. This inhibits the rate at which CO<sub>2</sub> abatement takes place. This fear, however, is not baseless. There is a bidirectional causality between CO<sub>2</sub> emission and GDP. CO<sub>2</sub> emissions granger cause GDP and GDP granger causes CO<sub>2</sub>

emissions. Moreover, the time series correlation between CO<sub>2</sub> emission and GDP for India is 0.9.

To make the analysis more pertinent to the 21st century, we look at the time series correlation between CO<sub>2</sub> emission and ease of doing business rank for India from 2008 onwards.<sup>2</sup> There is a negative correlation between them indicating that a reduction in CO<sub>2</sub> emission brought about by compliance to stringent environmental regulations on the part of businesses negatively impacts the ease of doing business rank, i.e, it is associated with a lower rank on the ease of doing business index. The rate of investment in a country is affected by its rank on the ease of doing business index. Investment is a function of the expected future profitability of the investment or marginal efficiency of investment.

So how will international commitment towards abatement of carbon emission impact investors' decisions in South Asia? To better understand this, we present two cases:

1. Technical progress in pollution abatement takes place.
2. No technical progress in pollution abatement.

The first case requires us to invoke the Green Solow Model. The Solow model postulates that the rate of growth of per capita income is equal to the rate of technical progress in production which can be labelled as labour augmenting technical progress as it enhances the efficiency of labour.

The Green Solow model, on the other hand talks about growth in per capita income accompanied by rising environmental quality. Here, exogenous technical progress is of two types, labour augmenting and pollution abating. Technological progress in goods production is necessary to generate per capita income growth. Technological progress in abatement must exceed growth in aggregate output which is equal to the population growth rate plus technological progress in order for pollution to fall and the environment to improve (Taylor, Brock 2010). Hence, if countries have to continue to grow while simultaneously meeting their CO<sub>2</sub> abatement commitments, then technical progress in pollution abatement needs to take place. This kind of technical progress requires investment in R&D. This brings us to the conclusion that if a part of current investment is diverted towards research in pollution abatement, then the future profitability of current investment will rise due to the economy following a balanced growth path. This diversion of investment will require a certain push from the state. State funded projects may be required as well if private investment falls short. However, if such technical progress does not take place, then the only way in which countries can meet the requirements of the Paris Agreement will be by cutting back on production resulting in lower GDP growth rate in the future. This will lead to a fall in the current rate of investment which will further dampen growth rate.

Not to mention that even in the case of technical progress in pollution abatement, there is a limit to the amount of reduction in net CO<sub>2</sub> emissions that can be brought about by energy efficiency alone.

Net CO<sub>2</sub> emission=Gross CO<sub>2</sub> emission-reabsorption

Gross CO<sub>2</sub> emission = CO<sub>2</sub>/energy\* energy/GDP\* GDP/ Population\*Population

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<sup>2</sup>Ease of doing business is an index published by the World Bank. It is an aggregate figure that includes different parameters, which define the ease of doing business in a country. Economies are ranked on their ease of doing business, from 1 to 190. A high ease of doing business ranking means the regulatory environment is more conducive to the starting and operation of a local firm.

So carbon intensity or energy efficiency is only one contributory factor. Population and GDP can put a limit to the amount of restraint you can put on CO2 emission by energy efficiency (Pearson et al 1996).

To get around the problem of bidirectional causality between CO2 and GDP which results in endogeneity in a simple econometric model thus giving inconsistent estimators of the slope coefficients, we formulate a system of simultaneous equations:

Equilibrium condition in the real (output) economy is given by the condition  $AD=AS$

$$Y = C + I + G + (X - M) \quad (1)$$

$$C = C + cY \quad (2)$$

Substituting 2 in 1, we get

$$Y = (C + G + NX) / (1 - c) + I / (1 - c) \quad (3)$$

Investment can be expressed as a function of energy and interest rate.

$$I = f(E, r)$$

$$I = I + \alpha E - \beta r \quad (4)$$

On replacing I in 3 with 4, we get

$$Y = \bar{Y} + \beta_1 E - \beta_2 r$$

$$\text{Where } \bar{Y} = C + I + G + NX, a = \alpha / (1 - c), b = \beta / (1 - c) \quad (5)$$

Upon transforming 6 to express it as a double log econometric model,

$$\ln Y = \ln \bar{Y} + a \ln E + b \ln r + u \quad (6)$$

The above model can be expressed as :

On taking first and second partial derivatives of Y with E,

$$\partial Y / \partial E = \bar{Y} a E^{a-1} r^b \quad (7)$$

As  $\partial Y / \partial E$  is expected to be greater than zero and  $\bar{Y}$ , E and r are positive terms, must be greater than zero as well.

$$\partial^2 Y / \partial E^2 = \bar{Y} a(a-1) E^{a-2} r^b \quad (8)$$

Since,  $a > 0$ ,  $\partial^2 Y / \partial E^2$  is positive if  $a > 1$  and negative if  $0 < a < 1$ . This implies that output increases at a decreasing rate if  $a < 1$  whereas output increases at an increasing rate when  $a > 1$ .

“a” is the marginal efficiency of energy. In the former case ( $a < 1$ ), energy is being used inefficiently in the production of output or in other words, each additional unit of energy is contributing lesser and lesser to output generation whereas in the latter case, each additional unit is contributing more and more output generation.

Now let us look at the energy function. Energy is defined as a function of population and output.

$$E = Y^g P^h / A \quad (9)$$

A in (9) represents the technological constant. Higher the value of A, the lower is the amount of energy consumed for a given value of Y and P.

$$\ln E = -\ln A + g \ln Y + h \ln P + v \text{ where } v \text{ is the random error term} \quad (10)$$

On further algebraic manipulation, we get two simultaneous equations in terms of population and interest rate.

$$\ln Y = (\ln \bar{Y} - a \ln A) / (1 - ag) + (ah / (1 - ag)) \ln P + (b / (1 - ag)) \ln r + (av + u) / (1 - ag)$$

$$\ln E = (g \ln \bar{Y} - \ln A) / (1 - ag) + (bg / (1 - ag)) \ln r + (h / (1 - ag)) \ln P + (gu + v) / (1 - ag)$$

$$\ln Y = (\ln \bar{Y} - a \ln A) / (1 - ag) + (ah / (1 - ag)) \ln P + (b / (1 - ag)) \ln r + m \quad (11)$$

$$\ln E = (g \ln \bar{Y} - \ln A) / (1 - ag) + (bg / (1 - ag)) \ln r + (h / (1 - ag)) \ln P + n \quad (12)$$

We use two cases to illustrate what happens to “a” when A (level of technology) is kept constant and when it is increased over time.

For the former case, we get the following results upon running regression for (11) and (12)

$$\ln Y = -44.9338 + 3.4933 * \ln P - 0.2662 * \ln r$$

$$\ln E = -46.74954 + 3.54335 * \ln P - 0.02466 * \ln r$$

The values we get for parameters a, g, lnA and lnY are as follows.

$$a = 0.985874949$$

$$g = 0.092637115$$

$$\ln A = 42.5870024$$

$$\ln Y = 1.155400356$$

We observe that  $a < 1$  in case of technological stagnancy which reinforces our hypothesis that energy is used inefficiently in the case of constant A.

Now suppose A (level of technology) is an exogenous variable rather than a constant and increases at a constant rate linearly over the time. Let us assume that A takes values 1, 2 and so on so that the rate of increase is constant i.e. 1 overtime.

We obtain the following results-

$$\ln Y = -77.44697 - 0.39453 * \ln A + 5.11291 * \ln P - 0.22430 * \ln r$$

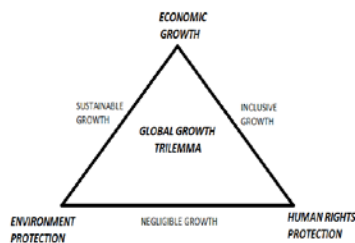
$$\ln E = -46.008551 + 0.008992 * \ln A + 3.506441 * \ln P - 0.025620 * \ln r$$

Using coefficients of  $\ln P$  and  $\ln r$  as we did earlier to find value of a, and g; we get

$$a = 1.45814802, \quad g = 0.114222024$$

The value of a exceeds 1 in this case implying that energy is being used more efficiently in the case of technological progress. In particular, we are referring to carbon abating technological progress which ensures that the same amount of energy produces a higher level of output. These results are in tandem with the conclusions of the Green Solow Model as mentioned earlier. Hence, such technological progress will enable countries to honour their Paris Agreement commitments without putting a damper on their growth prospects.

## 6. The Growth Trilemma



Now we shall put together all the pieces and relationships discussed in the earlier sections to see how the interlinkages and interactions between all these factors result in a situation where different SDGs can come in the way of each other, resulting in a three way dilemma, or a trilemma between economic growth, inclusive growth and sustainable (eco friendly) growth.

Acceptance of climate refugees on humanitarian grounds will increase the population of the country which will result in increased carbon emission as proved earlier in section 4.2.

Over the long term, population growth is the major source of new energy consumers, adding massively to total energy consumption (Pearson et al 1996). As shown in (2), population also acts as a limiting factor to the amount of restraint you can put on CO<sub>2</sub> emission by energy efficiency. So inclusive growth along with fast pace of economic growth can come in the way of eco friendly growth.

Eco friendly growth along with inclusive growth will come at the cost of compromised GDP growth as the country will be required to slow down its growth momentum to ensure that carbon emissions do not rise despite high population growth rate as can also be seen from (2). The slowdown of output growth will put the country behind on other development indicators as well as in terms of the demographic cycle resulting in a slump.

GDP growth and eco friendly growth will require us to put a cap on population growth rate and will come in the way of extending help to climate migrants. Thus, it becomes difficult to simultaneously achieve all three goals in the absence of some external stimulus or policy intervention.

## 7. Policy Recommendations and Conclusion

To prevent the economy from spiralling into a slump due to carbon emission restrictions, it becomes imperative to phase out fossil fuels from the production process slowly and steadily starting with replacement of thermal power to cleaner sources of power and energy. An analogous case would be the phasing out of old vehicles from the roads of Delhi to reduce air pollution. Instead of banning these vehicles from roads right away, these vehicles were taken off the roads in several cycles. This process of phasing out of fossil fuels needs to be



accompanied by gradual invention and innovation in the clean energy sector. In South Asia, one does not see this kind of investment emerging primarily from the private sector. Private investment is spurred by profits. This leaves policy makers with three options. One is to go ahead with public investment in the clean energy sector. The second is to make the usage of clean energy profitable for the private sector by way of subsidies, tax exemptions, etc or to attract foreign direct investment in this sector. The third is import of technology from the West. All three options seem to put a strain on the government expenditure and the fiscal deficit. However, the second option comes with an added benefit of home grown technical progress and faster technical progress due to competition in the private sector.

An important point to be noted is that if the economy is able to maintain its growth momentum and is able to avoid any set back while trying to achieve multiple sustainable development goals, then as the the output will continue to grow, the emission to output ratio will decline as is postulated by the Environmental Kuznets Ratio.<sup>3</sup> The EKC holds for US data. Hence, over time CO<sub>2</sub> abatement will become easier.

On the question of climate migrants, it might help to grant them the refugee status. Legal and illegal cross border migration continues to take place in status quo. Granting refugee status to these migrants will ensure that the responsibility of their rehabilitation is shared collectively by the whole world and not just by the neighbouring countries. This will fix the problem of disproportionate burden sharing and also keep in check the multiple problems that this kind of population explosion poses for the neighbouring countries. Additionally, this will help the global community to provide better aid to these migrants and work towards their welfare. Investment in human capital will also combat some of the problems mentioned earlier.

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<sup>3</sup>The EKC is an inverted U shaped curve. It postulates that as income rises, CO<sub>2</sub> emission at first rises and then reaches a peak post which it falls.



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## **International Laws and their Implications for Sustainable Growth**

Winning Entry of Saroj Gupta Memorial Paper Presentation  
Kathmandu College of Manangement

### **Abstract**

This paper throws light on how well international laws integrate international sustainability goals. Sustainable growth has received a lot of attention in international treaties and conventions with inclusion in more than 300 conventions and various non-binding legal agreements. Environmental laws integrated with social and economic issues are the minimum requirements of sustainable development goals which may act as a norm to make judiciary decisions. In the past, as the evidence suggests the international judiciary system has made their decisions keeping in mind the sustainability issues. The paper further discusses how to integrate the goals to regional and local contexts by learning from the practices of our neighboring country.

Keywords: MDGs, SDGs, Genuine Progress Indicator

JELclassifications:K33,O19

### **1. Introduction**

International laws are the treaties, agreements and a set of rules between countries that govern how nations interact with other nations, citizens of other nations and businesses of other nations. The laws address issues like human rights, treatment of refugees, prosecution of international crimes, arms agreements and control, how states can claim new territories, regulating common spaces like water and outer space, trade between states, preventing war, preserving the environment etc.

Sustainable Growth refers to economic growth which satisfies the needs of present generation as well as the future generation. There are various elements of growth; these include natural

resources, physical infrastructure, population, human resource, technology and laws. The Millennium Development goals 2015 and Sustainable Development Goals have shown concern for sustainable development of the nations.

## 2. What can be treated as International Laws?

Sustainable growth has received a lot of attention in international treaties and conventions. Instances of such goals can be found in various non-binding legal agreements. Environmental laws integrated with social and economic issues are the minimum requirement of sustainable goals which might act as a norm to make judiciary decisions.

Globally the more successful alignment to development has been through economic integration efforts in various economies. Currently the European Union stands one best example on how development efforts can be aligned through integration of various frameworks and treaties that govern the operational mechanism of member countries. If we want to see it closer to the region, the South Asian Association for Regional Cooperation (SAARC) in South Asia, BIMSTEC, and ASEAN would be good examples. These formal economically integrated units have helped bolster trade, development and cooperation between countries – the forums like SAARC have explicitly highlighted the cooperation and agreement around achievement of Sustainable Development Goals. This has worked out well despite absence of any forms of international law governing these agreements.

There have also been international summits and declaration on global platforms that have explicitly outlined various points that mandates the compliance of sustainable development goals. One such treaty that has been universally accepted is the Rio Summit/Declaration. Some of the declaration points that are directly related to the sustainable growth and development as stated in the declaration:

- People are entitled to a healthy and productive life in harmony with nature which means that the people have right to enjoy the nature and feel protected in it.
- Development today must not threaten the needs of present and future generations.
- Nations have the right to exploit their own resources but without causing environmental damage beyond their borders.
- Environmental protection shall constitute an integral part of the development process.
- Eradicating poverty and reducing disparities in living standards in different parts of the world are essential if we are to achieve sustainable development whilst meeting the needs of majority of the people.
- Environmental issues are best handled with the participation of all concerned citizens.

- The polluter should, in principle, bear the cost of pollution.
- Sustainable development requires better scientific understanding of the problems. Nations should share knowledge and technologies to achieve the goal of sustainability. (Rio Declaration)

Another treaty that has been developed for sustainable development as well as economic growth is 2030 Agenda. Sustainable development goals are the 17 global goals set by the United Nations General assembly in the year 2015. These goals are also known as Agenda 2030. The SDG's include social as well as economic development issues like poverty, hunger, education, global warming, water, sanitation, environment and social justice.

Given the definition above, we can conclude that SDGs are not necessarily governed by International law but is rather a guiding document to track development goals that have been globally agreed to and facilitated by the United Nations. There are no legal repercussions for not complying or achieving the SDG targets within the time-frame.

Since there is correlation of development agenda of one country to the other, it is hard to justify international laws governing the achievement and compliance of the same. In fact, more practical approach to govern the progress of sustainable development goals is through international treaties and agreements. This can be binding upon each country but to achieve this, international law may not be the way out.

### **3. Millennium Development Goals: Achievements and Learning**

Millennium Development Goals can give us insights on how goals set at international level can be an impetus for the countries growth and development.

Millennium Development Goals (MDGs) were the eight goals adopted by the 189 nations under the United Nations in the year 2000. The goals were inter-dependent and emphasized the improvement in health. The goals were to eradicate poverty, hunger, diseases, illiteracy, women discrimination and environmental degradation to be achieved till 2015 using 1990 as the benchmark. All goals had clearly stated indicators and targets for the countries.

The eight goals under MDGs were:

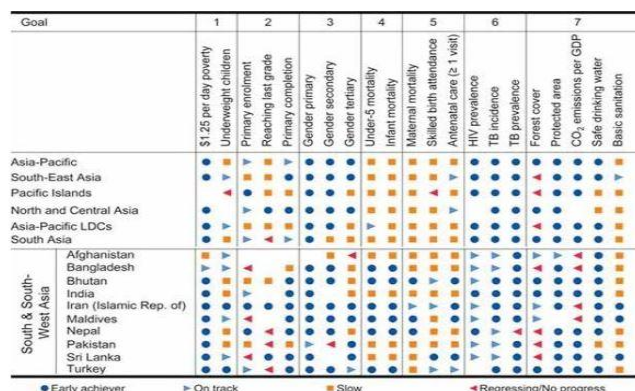
1. to eradicate extreme poverty and hunger
2. to achieve universal primary education
3. to promote gender equality and empower women
4. to reduce child mortality
5. to improve maternal health

6. to combat HIV/AIDS, malaria, and other diseases
7. to ensure environmental sustainability
8. to develop a global partnership for development

### 3.1. Achievements

Different countries had different approach towards the goals. The progress of these goals also varied across different nations and regions. (Figure 1)

**Figure 1 Progress of MDGs**



Source: UNESCAP, ADB and UNDP (2015).  
Notes: \$1.25 per day represents the national poverty line in Afghanistan. LDCs = least developed countries.

### Goal 1: Eradicate extreme poverty and hunger

In 2015, 14 percent of the population living in developing world lived on less than \$1.25 a day. The number of people living in extreme poverty has declined by 50%, (1.9 billion in 1990 to 836 million in 2015) globally.

The South Asian region had reduced the poverty by 54.7% from the 1990.

**Table 1 Regional comparison with respect to poverty**

Country	Proportion of population below \$1.25PPP per day (Year)	Proportion of population below national poverty line (Year)	Poverty gap ratio at \$1.25 PPP per day (Year)	Share of poorest quintile in national income or consumption(Year)
Afghanistan	...	35.8(2011)	...	9.4(2007)
Bangladesh	43.3(2010)	31.5(2010)	11.2(2010)	8.9(2010)
India	23.6(2012)	21.9(2011)	4.8(2011)	8.5(2009)
Pakistan	12.7(2010)	22.3(2005)	1.9(2010)	9.6(2010)
Nepal	23.7(2010)	25.2(2010)	5.2(2010)	8.3(2010)
Maldives	1.5(2004)	...	0.1(2004)	6.5(2004)
Sri Lanka	4.1(2009)	6.7(2013)	0.7(2009)	7.7(2007)
Bhutan	2.4(2012)	12(2012)	0.4(2012)	6.8(2012)

Source:

[mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

### Goal 2: Achieve universal primary education

The global literacy rate among youth aged 15 to 24 jumped from 82 percent to 91 percent between the years 1990 to 2015. The primary school net enrolment rate in the developing regions had reached 91 per cent in 2015, up from 83 per cent in 2000.

**Table 2 Regional Comparison with respect to Primary Education**

Country	Net enrolment ratio in primary education, both sexes (Year)	Percentage of pupils starting grade 1 who reach last grade of primary, both sexes (Year)	Primary completion rate, both sexes (Year)	Literacy rate of 15-24 year-olds (Year)
Afghanistan	28(1993)	87.8(1993)	28.8(1993)	47(2011)
Bangladesh	96.2(2013)	66.2(2009)	74.6(2011)	79.9(2012)
India	98.6(2012)	61.4(2001)	96.5(2011)	76.4(2006)
Pakistan	71.9 (2013)	62.2(2012)	73.1(2013)	70.8(2011)
Nepal	98.7(2013)	60.4(2012)	101.6(2014)	82.4(2011)
Maldives	93.1(2007)	82.8(2011)	132.3(2006)	99.3(2006)
Sri Lanka	94.3(2013)	98.5(2012)	97.4(2013)	98.2(2010)
Bhutan	90.7(2013)	78.9(2012)	98.4(2013)	74.4(2005)

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

The South Asian region achieved its target of universal primary enrollment and completion. However, it was behind in meeting the global net secondary enrollment rate which stood at 59% against the global rate 64% in 2014.

### **Goal 3: Promote gender equality and empower women**

Girls had more inclusion in education in 2015 than in 1990. The developing regions as a whole were able to achieve the target to eliminate gender disparity in primary, secondary and tertiary education. 103 girls were enrolled in primary education for every 100 boys in the South Asian regions in 2015. This rate increased from 74 girls for every 100 boys in 1990. 41 percent of paid workforce outside Agricultural sector were women, an increase from 35 percent in 1990.

**Table 3 Regional Comparison on Gender**

Country	GPI at Primary (Year)	GPI at Secondary (Year)	GPI at Tertiary (Year)	Share of women in wage employment in the non-agricultural sector (Year)	Seats held by women in national parliament (in 2015)
Afghanistan	0.70(2013)	0.55(2013)	0.33(2011)	18.4(2004)	69
Bangladesh	1.06(2011)	1.14(2012)	0.72(2012)	13.3(2010)	70
India	1.03(2012)	0.95(2012)	0.92(2013)	19.3(2010)	65
Pakistan	0.87(2013)	0.73(2013)	0.98(2013)	12.6(2008)	67
Nepal	1.09(2014)	1.06(2014)	0.81(2013)	14.0(2014)	176
Maldives	0.97(2007)	1.13(2004)	1.13(2008)	40.5(2010)	5
Sri Lanka	0.99(2013)	1.06(2013)	1.60(2013)	32.4(2013)	13



Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

#### Goal 4: Reduce Child mortality

The under-five mortality rate has declined from 90 to 43 deaths per 1,000 live births between 1990 and 2015. There has been a decline in number of deaths per children under five from 12.7 million in 1990 to almost 6 million in 2015 globally.

**Table 4 Regional Comparison With respect to Child Mortality**

Country	Children under five mortality rate per 1,000 live births (in 2013)	Infant mortality rate (0-1 year) per 1,000 live births (in 2013)	Children 1 year old immunized against measles, percentage (in 2013)
Afghanistan	23.8	70.2	75
Bangladesh	41.1	33.2	93
India	52.7	41.4	74
Pakistan	85.5	69	61
Nepal	39.7	32.2	88
Maldives	9.9	8.4	99
Sri Lanka	9.6	8.2	99
Bhutan	36.2	29.7	94

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

South Asian countries did not do well in meeting the targets of child mortality, sanitation and reducing the proportion of underweight children. Nepal, however, achieved all the targets of the MDGs which included reducing infant mortality rate, under five mortality rate and increasing immunization against measles. Under five mortality rate in South Asian region was very high which was 50 deaths per 1000 live births in 2015

#### Goal 5: Improve Maternal Health

Maternity Mortality ratio declined by 45 percent from 1990 to 2015 and Southern Asia witnessed the drop in this ratio by 64 percent.

**Table 5 Regional Comparison with respect to Maternal Health**

Country	Maternal mortality ratio per 100,000 live births (in 2013)	Births attended by skilled health personnel, percentage (Year)
Afghanistan	400	38.6(2011)
Bangladesh	170	42.1(2014)
India	190	52.3(2008)
Pakistan	170	52.1(2013)
Nepal	190	55.6(2014)
Maldives	31	98.9(2011)
Sri Lanka	29	98.6(2008)
Bhutan	120	74.6(2012)



Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

The maternal mortality ratio in South Asia significantly reduced by 67% between 1990 and 2015 though the MDG target was 75%. Sri Lanka was way ahead in maternal mortality ratio reduction in the South Asian region with 33 per 100, 000 in 2010 as compared to 100 in 1990.

### **Goal 6: Combat HIV/AIDS, malaria, and other diseases**

New HIV infections fell from 3.5 million cases to 2.1 million globally between 2000 and 2013. The people living with HIV who received antiretroviral therapy (ART) increased significantly from 80,000 people to 13.6 million people as measured in June 2014.

There was 37 percent fall in global malaria incidence rate and 58 percent in the mortality rate. Similarly, the tuberculosis mortality rate fell by 45 percent between the years 1990 to 2013.

**Table 6 Regional comparison for HIV, TB and Malaria**

Country	AIDS Death (in 2013)	People living with HIV, 15-49 years old, percentage (in 2013)	Percentage of population aged 15–24 years with comprehensive correct knowledge of HIV/AIDS (Year)	Malaria death rate per 100,000 population, all ages (in 2012)	Tuberculosis prevalence rate per 100,000 population (mid-point) (Year)
Afghanistan	292	0.01	Woman-1.8(2011)	0	340 (2013)
Bangladesh	485	0.01	Man-14.4 (2011) Woman-11.9(2011)	14	402 (2012)
India	127,232	0.26	Man-39.1(2006) Woman-19.9(2006)	04	211 (2013)
Pakistan	2,174	0.07	Man-5.2(2013) Woman-4.2(2013)	02	342 (2013)
Nepal	3,251	0.23	Man-33.9(2011) Woman-36.4(2014)	0	211 (2013)
Maldives	2	0.01	Woman-35(2009)	...	57 (2013)
Sri Lanka	92	0.02	-	0	103 (2013)
Bhutan	31	0.13	Woman-21(2010)	58	196 (2013)

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

### **Goal 7: Ensure environmental sustainability**

91 percent of the global population had access to improved drinking water source in 2015 compared to 76 percent in 1990. Globally, 147 countries had met the drinking water target, 95 countries had met the sanitation target and 77 countries had met both the targets. Out of the total population living in slum more than 320 million people were

given access to good water sources, sanitation facilities and durable housing between 2000 and 2014.

**Table 7 Regional Comparison with respect to environmental sustainability**

Country	Proportion of land area covered by forest, percentage (2010)	Carbon dioxide emissions (CO <sub>2</sub> ), metric tons of CO <sub>2</sub> per capita (CDIAC) (2011)	Consumption of all Ozone-Depleting Substances in ODP metric tons (2013)	Proportion of total water resources used, percentage (Year)	Terrestrial and marine areas protected to total territorial area, percentage (2014)
Afghanistan	2.1	0.4209	17.7	31(2000)	0.46
Bangladesh	11.1	0.3733	64.9	2.9(2010)	3.41
India	23	1.6987	956.1	33.9(2010)	3.13
Pakistan	2.2	0.9278	247	74.4(2010)	8.60
Nepal	25.4	0.1596	0.7	4.5(2005)	22.93
Maldives	3.3	3.3250	3.2	15.7(2010)	0.07
Sri Lanka	28.8	0.7279	13.4	24.5(2005)	2.64
Bhutan	69.1	0.7692	0.3	-	47.30

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

**Table 8 Regional Comparison of population using improved drinking water sources, sanitation and slum population**

Country	Proportion of the population using improved drinking water sources, total (2015)	Proportion of the population using improved sanitation facilities, total (2015)	Slum population as percentage of urban, percentage (2014)
Afghanistan	55	32	62.7
Bangladesh	87	61	55.1
India	94	40	24
Pakistan	91	64	45.5
Nepal	92	46	54.3
Maldives	99	98	...
Sri Lanka	96	95	---
Bhutan	100	50	...

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

### **Goal 8: Develop a global partnership for development**

In 2014, 79 percent of imports from developing countries to developed countries were duty free. The official development assistance from developed countries amounted to \$135.2 billion, an increase of 66 percent between 2000 and 2014. 95 percent of the world's population was covered by a mobile-cellular signal. The reach of internet increase from 6 percent of world's population in 2000 to 43 percent in 2014.

**Table 9 Regional comparison with respect to communication**

Country	Fixed Telephone Lines per 100 Population (in 2014)	Cellular Subscribers per 100 Population (in 2014)	Internet users per 100 population (in 2014)
Afghanistan	0.33	74.88	6.39
Bangladesh	0.69	75.92	9.60
India	2.13	74.48	18.00
Pakistan	14.61	148.83	67.00
Nepal	2.98	82.49	15.44
Maldives	2.65	73.33	13.80
Sri Lanka	12.49	103.16	25.80
Bhutan	3.11	82.07	34.37

Source: [mdgs.un.org/unsd/mdg/](http://mdgs.un.org/unsd/mdg/)

### 3.2.Important Learning from Millennium Development Goals

South Asian countries were able to meet many targets of the MDGs. There was moderate growth in these regions where targets were met. However, other targets were not achieved because of various reasons. The countries had to learn from the mistakes.

- a) **Framework:** “MDGs ignored the regional framework and capacities of the countries particularly missing governance capabilities while making the goals.” This was claimed by Mishra in the article “Millennium Development Goals: Whose goals and for whom?” The countries also had departments at national level. But they failed to realize the need to start the implementation at local level. This was because of the lack of resources. Moreover, there was lack of commitment from the nations. There were casual disparities and lack of continuous regional monitoring and review mechanisms.
- b) **Investment:** The investment in the MDGs was not sufficient. The countries didn’t have sufficient resources. The expenditure on education as a percentage of GDP was low. Sri Lanka spent 1.7%, Bangladesh spent 2.0%, India 3.9% and Pakistan spent 2.5%. Public health expenditure also remained low which was 1.3% of GDP against the world average of 6%.

Infrastructure development was important to achieve the MDGs. Still a lot of people were deprived of good schools, hospitals, electricity, safe drinking water and health care. Development of the infrastructure leads to growth of nations. So we can say that the Goals in MDGs were directly or indirectly related to growth of nations besides development

Other considerations that need to be taken care of in future agenda are:

- a) **Growing together:** Currently 70 percent of population in South Asian region doesn't have access to good qualities and health services and less than one third of a working-age population of a region are eligible for pension. Being in a twenty first century, participating rate of women in the labor force remains low at 48%. Among the differently abled people, only 30% of them have their income enough for self-support. So, to solve these situations and to make the world a better place for everyone to live by the year 2030 there is opportunity for regional co-operations:
- As knowledge is very important, the first step would be the promoting analytic studies and setting policy to address inequalities
  - Another point would be to support multi-sector policies, strategies and programs to implement in 2030 agenda for gender equality and women empowerment.
  - Full knowledge of the unemployed youth and their skills.
  - Implementation of the Incheon Strategy “Make the Right Real” for differently abled people to overcome the problems they are facing.
- b) **Management of natural resources:** Some natural resources are limited but the regional consumption has been of more than half of the natural resources which leads to scarcity. If natural resources are not managed it might give rise to environmental damage and directly impact the economies of the region. International Laws should be made on the conservations of natural resources and usages of non-renewable resources to protect the natural resources as well as enhance the use of renewable resources more.
- c) **Climate change:** Climate and natural resources are important elements for growth. Severe climate changes can have ill-effects towards the Economy of a nation as well as health of people. To reduce or stop the global warming we should take care of our environment, taking Bhutan as an example of free carbon country many countries have made policy changes to work on the climate related disaster risk reduction.
- d) **Disaster risk reduction and resilience:** As there are many natural calamities happening in this region. According to sources of UN, after 2005 about 60 percent of global death, 80 percent of people are affected and 40 percent of the economics damage due to natural disaster. There should be a way to reduce the damage done by the disaster because one major natural calamity will hamper the whole economy of a region.

#### 4. Sustainable Development Goals and Growth of Nations

Sustainable Development Goals (SDGS) carried ahead the unmet targets of MDGs in South Asian countries and added more targets considering the issues of economic growth, job

creation, industrialization and justice which are covered in the SDG 8,9,10 and 16 and ecological sustainability covered in SDG 11-15 and strong global partnership covered in SDG 17.

Firstly, talking about the framework the countries in South Asia have adopted to implement the SDGs learning from the mistakes earlier. Nepal has the National Planning Commission. Similarly, Bhutan has Gross National Happiness Commission. The Ministry of Planning, Development and Reforms in Pakistan sets goals and plans. It has prepared the Pakistan Vision 2025 aligned with SDGs. Bangladesh has also set up a Planning Commission. In India, National Institution for Transforming India (NITI Aayog) took over the Planning Commission in 2015. Sri Lanka has set up the Ministry of Sustainable Development and Wildlife.

Secondly, there is a need to implement certain changes and bring reforms in policies and institutional framework. To enable faster sustainable growth, there is a need to bring changes in institutions and policies. There is a need to have local level organizations and more degree of decentralization. A considerable amount of investment in terms of resources is required. All stakeholders need to be included in all phases of SDGs implementation, monitoring and review. This may call for the participation of civil authorities as well as the private sector. More degree of cooperation is needed amongst the countries.

Finally, the goals of SDGs that relate to growth and ways to implement them are described below:

**a) Economic Growth through industry, innovation and infrastructure development and eradication of poverty.**

While we look at the goal -Decent work and Economic Growth (SDG 8) in South Asian Countries, India and Bangladesh has been growing at faster rates. Nepal growth was stagnant in the years 1980 to 2015 while Pakistan had a declining rate. Despite the fact that South Asia has emerged from the global financial crisis as the fastest growing region in Asia, the empirical studies show that the current growth is not enough to accelerate the speed of poverty and hunger reduction by 2030. The other part of SDG 8 is job creating economic growth. Dismissively, south Asian countries have failed to create decent jobs for the people as four out of top five countries in the world with very high proportion of informal employment are from south Asia.

It is good to see that the share of agricultural sector in the economy of South Asia has declined but the share of industrial sector has remained stagnant. (Figure 2) Moreover, the service sector with 57% share in GDP in 2013 has not created enough jobs to absorb the surplus workforce from the agricultural sector. Still 46% of workforce is engaged in agriculture. Industrial sector needs a boost as it has the potential to create jobs. The goal 9 with the target to enhance the share of industry in employment and GDP needs to be addressed timely.

**Figure 2 Share sector of employment and value added**



Source: UNESCAP calculation 2016

Efforts are being taken to enhance the manufacturing sector. In India, the Make in India Campaign seeks to improve the manufacturing sector. Moreover, there is need to foster trade and improve transportation to enhance the regional value chains

#### **b) Universal Access to education and health**

As mentioned earlier the expenditure in health and education sector was low in the south Asian countries. Sri Lanka implemented the free education Act in 1945. India has skill India Program and established the Ministry of Skill Development and Entrepreneurship. Conditional Cash Transfers with criteria to enroll in education has helped Afghanistan, Pakistan and Bangladesh to promote schooling.

The SDG 3 and SDG 4 concern with good health and well-being, and quality education respectively. Investing in these sectors can provide opportunity to use the potential of



youth population. The total consumption could increase by nearly \$30 trillion by 2050 in South Asia if youth are provided with opportunities for human resource development (UNESCAP SDG Report).

**c) Financial Inclusion**

The south Asian nations have understood the need of providing social security to the people to eradicate poverty. This would also lead to more flow of money in the economy. Social protection would mean ensuring basic need and social inclusion to the households. However, there are certain challenges for financial inclusion. Only 10.6% of workers have social security coverage in South Asia. Also, only 3% of government transfer occurs through an account. Use of bank-accounts to transfer payments increase financial inclusion, transparency and efficiency. Another challenge is to increase the financial awareness.

South Asian countries have taken steps for financial inclusion. National Financial Inclusion Strategy in Pakistan and Pradhan Mantri Jan-DhanYojana in India were launched to foster financial inclusion.

**d) Energy, sustainable communities, sustainable consumption and production**

SDG 7 relates to affordable and clean energy. It becomes necessary for nations to increase the use of renewable sources of energy. For instance, Bhutan has harnessed the hydropower energy. This has helped Bhutan to meet not only its domestic demand but also export clean energy to neighboring nations. Similarly, India has harnessed the solar energy. These developments can help South Asian countries self-reliant for energy.

For sustainable consumption, there is a need to change in lifestyle. There is need to increase the use of public transport, energy saving equipments and waste management. Waste-to-Wealth consumption can be replicated by nations. Many industries in south Asia has started using cost cutting techniques by recycling waste and enhanced energy efficiency which saves the cost of raw materials and energy.



## 5 Bhutan and Gross National Happiness Index

### 4.1. Gross National Happiness and Sustainable Development

#### a) Bhutanese Concept and Context

His majesty fourth King of Bhutan proclaimed that “Gross National Happiness is more important than Gross National Product”. GNH philosophy is based on four main pillars.

- Equitable socio-economic development :-
- Conservation of the environment
- Preservation and promotion of culture
- Promotion of good governance

### 4.2. Institutional Framework for implementation of GNH

#### a) Central Policy and Planning Support Institutions

Bhutan’s Planning Commission was established in 1971 and was reconstituted as the GNH Commission in January 2008. It ensures that the GNH concept is fully considered in the policy-making, planning and implementation processes. The Centre for Bhutan Studies established in 1999, is engaged in GNH surveys and development of GNH index and tools to screen policies and projects against the GNH concept.

#### b) Sectoral Development Agencies

Policy, plans and programs for the development of the sector are developed and implemented by government ministries and their different agencies. It includes agencies such as the Ministry of Agriculture and Forestry, Foreign Affairs, Finance, Information and Communication, etc.

#### c) Development Policy-making and Planning Framework

- The Royal Government subjects all national and sectoral policies to the GNH policy, which currently covers 23 determinants in nine GNH areas, including living standards, education, health, time consumption, good governance, ecological diversity and resilience, psychological well-being, community vitality and cultural diversity and resilience.
- The FYPs are formulated at the central, sectoral, district and local levels and translated into annual development plans and budgets at the various levels through five-year cycles. They have progressively implanted sustainable development concepts and approaches. Green economy fits very well within the framework of the GNH development philosophy which invades into all

development policies and plans at various levels. (Economic Development Policy of Bhutan, 2010)

### 5.3. Globalizing Happiness for a Sustainable World

The resolution initiated by Bhutan "Happiness: towards a holistic approach to development" at the 65th session of the UN General Assembly in 2011 states that: happiness is a fundamental human goal and universal aspiration; that GDP, by its very nature, does not reflect that goal; that unsustainable patterns of production and consumption impede sustainable development; and that more inclusive, equitable and sustainable development.

### 5.4. Avenues for Green Economy

#### a) Major Sectors

The major sectors for green economic development opportunities include energy, agriculture, forests and biodiversity, sustainable tourism, transportation, industry, education and knowledge-based enterprises etc. whereas, other sectors include Integrated rural-urban planning and regionally-balanced urban development, Human settlement policy and planning, Solid waste management enterprises, Green construction industry, Entertainment industry etc.

#### b) Partnerships with Civil and Private Sector

In this modernization era and democracy, civil societies play a crucial role, as they can effectively complement government efforts and expand the development reach of a society. It also provides an alternative social mobilization mechanism to pursue sustainable development on the ground. The private sector has the immense potential to tackle sustainable development challenges through innovation and the collaboration of ideas and resources. Therefore, various ways of public-private partnership are being explored and sustainable development is being pursued.

## 6. Genuine Progress Indicator (GPI) and Sustainability

The Genuine Progress Indicator is a broader concept than GDP. GPI takes into account the indicators used to calculate GDP. In addition to those indicators, it also takes in more than twenty aspects of the economy which are not included in GDP.

- GDP is the measure of current income but GPI measures the sustainability of that income. Sustainable income means the amount of income that can be consumed in a year by an economy without compromising the consumption need in the next period.
- GPI differentiates between the transactions that add value to well-being which are considered positive elements and those which diminish the well-being which are negative elements.
- GPI adjusts for income distribution, household work and volunteer work. Moreover, it subtracts the cost like crime, pollution, loss of leisure, debt and environmental damage.
- GPI regards the initial pollution as a cost which is usually equal to the cost to clean up the pollutants later and the negative impact of pollution during the period.

GPI can provide the much needed information to the nations to assess the activities they carry out in terms of associated costs involved and know where they stand in terms of sustainable growth

### **Conclusion**

International Laws, Treaties and Conventions have taken into consideration the importance of sustainable growth as well as development of the countries. Sustainable growth would mean the use of the existing outputs to increase the real output. The elements of the growth include technology, capital, and human resource, natural resources as well as law. The issue of sustainability has been raised a lot of times in the past but it was first formally addressed in Rio Summit. Apart from international treaties and conventions, the more successful alignment to development has been through economic integration efforts of economies like SAARC and BIMSTEC.

Millennium development goals set by United Nations show us how targets set at international level can help individual nations to move towards sustainability. South Asia was able to achieve the targets of eradicating extreme poverty and universal primary education. These two have significance in growth of nations in terms of job creation, skill development and human resource development. There was good progress in empowering women and achieve gender parity. However, the countries were not able to achieve all targets due to limitation of resources and good institutional and policy framework. For the future growth it is necessary for the countries to regionally cooperate and understand the need to save natural resources and preserve climate to ensure sustainable growth.

Sustainable Development Goals very well accommodate the issues of economic growth, job creation, sustainable production and consumption, industrialization and justice. The South Asian

countries have brought changes in its institutions with greater degree of decentralization and review and monitoring system.

All the south Asian countries can learn from the Bhutanese model of growth and development. Learning from the Bhutanese model can help in enhancing the overall welfare of the economies by meeting the needs of current generation without sacrificing the needs of future generation. Gross Happiness Index used by Bhutan is perfectly aligned with the sustainable development goals. Moreover, Bhutan has a good network of policy implementation and it has very well decentralized the authority to the local bodies. This could be an important learning for all the nations. Along with GNH, Genuine Progress Indicator can help to access the sustainability of economies.

Finally, international laws, agendas and treaties, though not binding in nature, have effects on the growth of the nations. Nations have adopted international policies targeted for sustainable growth of the nations by carefully altering them to suit their needs and existing resources.

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18. *National Report for the United Nations Conference on Sustainable Development 2012: Bhutan: In pursuit of Sustainable Development*

**Labour Market Rigidity: An obstacle?**

Shivani Pandey

[iishivani@hotmail.com](mailto:iishivani@hotmail.com)**Abstract**

With very high rates of unemployment and high growth rates, India is currently experiencing jobless growth. In such a scenario, it becomes crucial to analyse India's labour market structure to understand the impediments to job creation in the manufacturing sector. Rigid labour laws, a characteristic of the Indian labour market are often held responsible for poor rates of job creation. This paper therefore tries to address the fundamental question of the implications of a rigid labour market on employment generation in the manufacturing sector by looking at both empirical evidence and economic theory. Towards the end, recent reforms in the Indian labour market are also briefly mentioned with their subsequent consequences.

JEL Classification Code: J21, J28, J40, J88

Keywords: Labour Market Rigidity, Employment, Labour Market Flexibility

**Introduction and Background**

India's industrial structure is rather unique. It is dominated by extremely small enterprises, with 87% of manufacturing employment being in micro-enterprises of fewer than 10 employees (Bardhan, 2010). In 2000-2001 about 42%<sup>4</sup> of all manufacturing employment in India was in firms with 6-9 workers. During the same time, 23% of the manufacturing employment was in firms employing 500 plus workers (Mazumdar & Sarkar, 2008). This suggests a missing middle in the Indian firm structure particularly when compared to other developing countries (Bardhan, 2010). This is particularly problematic because of the large productivity gap between the two types of firms. In 2000-2001, labour productivity in the 500 plus worker firms was about 10 times that in the 6-9 worker firms. This is larger than most other developing countries and has increased since the mid-1980s (Bardhan, 2010).

India has not been successful in the expansion of manufacturing jobs of the kind that has transformed the economies of China and Vietnam. As per the Indian labour bureau, even as the economy grew at 7.6% in 2015-16, unemployment rate was as high as 5% (higher than the 4.9% it recorded in 2013-14 when the economy was in a bad shape). India has thus been experiencing a jobless growth. There is widespread agreement on the problems of inadequate finance for small and medium firms and of infrastructural deficiency in India. Another debilitating factor is rigid labour laws. Which of these is more important has not yet been resolved at the level of rigorous empirical analysis (Bardhan, 2010). In this paper, I address a fundamental question for manufacturing job growth - Are rigid labour laws an obstacle to employment in the manufacturing sector?

Labour laws theoretically discourage hiring in large firms. For instance, continental European countries have very strict laws against firing employees and hiring temporary workers. As a result, employers in those countries have less flexibility to adjust their workforces in the face of a

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<sup>4</sup> A rise from 40% in 1984-1985.

recession. A direct effect of this is a small or rather depressed increase in unemployment rates. Although this might mitigate an increase in the unemployment rate during bad times, firms that anticipate the firing restriction might hesitate to hire in the first place, even in good times. This behaviour ultimately translates to higher unemployment or lower employment because of lower hiring rates (Zenkar&Tasci, 2011). But in the case of India, this has not prevented large-scale retrenchment and layoffs (Bardhan, 2010). Between 1995-96 and 2001-02, 1.1 million employees (15% of the workforce) in the organised manufacturing sector lost their jobs (Nagaraj, 2004).

India is in the early phase of its demographic dividend and needs to create 8.1 million jobs annually to gainfully employ its workforce and reap its demographic dividend (World Bank, 2018). A demographic dividend of this magnitude has the potential to lift hundreds of millions of people out of poverty and raise living standards. Therefore, it becomes increasingly crucial to look at all factors impeding the growth of the job-creating or the manufacturing sector. In this paper, I will first present empirical evidence on the negligible impact of labour market rigidity on employment in industry. Next, I describe the theoretical justification for a rigid labour market. Then, I outline reforms in the Indian labour market and their consequences. Finally, I conclude.

### **1. Empirical Evidence on Labour Market Rigidity and Employment**

Some countries have strong employment protection laws while some don't. The Organisation of Economic Cooperation and Development (OECD) releases an "Overall Strictness of Employment Protection" index<sup>5</sup>. The index takes values between 0.2 and 4.1 indicating the most flexible country and the most rigid country respectively.

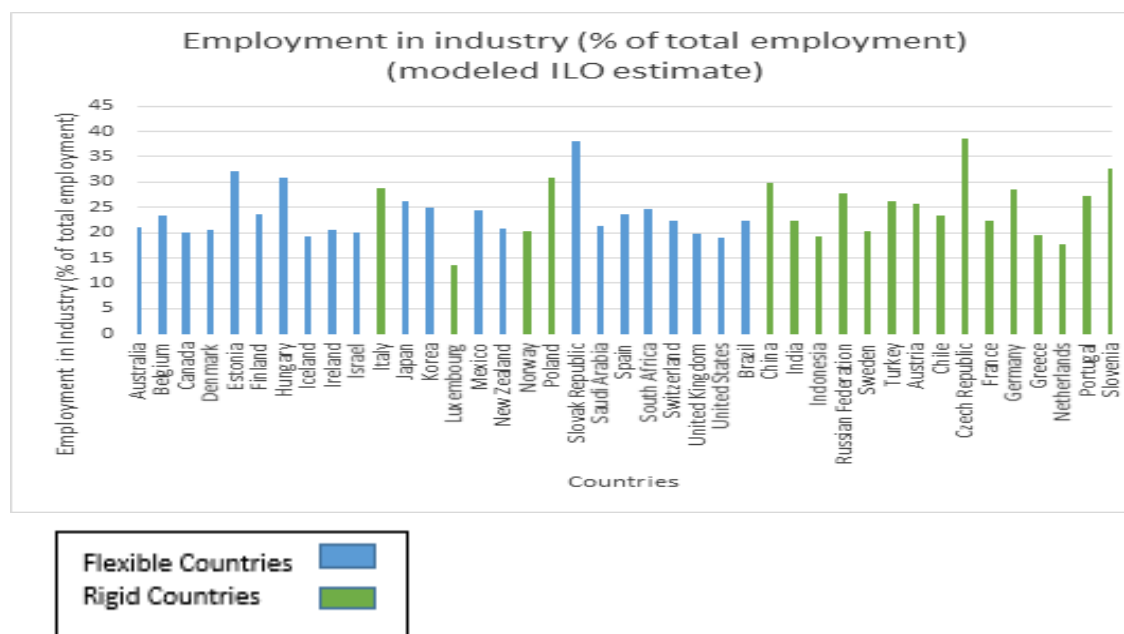
We use this measure to categorise countries as rigid or flexible. The average index value of the 41 countries<sup>6</sup> considered was 2.227437. Countries with an index value less than that were considered flexible while those with an index value above that were considered rigid with respect to their labour markets. The following diagram shows the percentage of total employment in the industrial or manufacturing sector for each of the 41 countries:

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<sup>5</sup> The index provides a measure of the general strictness of the labour market in a country with respect to the processes and costs involved when firing workers or hiring temporary employees (Zenkar&Tasci, 2011).

<sup>6</sup> These 41 countries were chosen on the basis of availability of data with respect to both – the overall strictness of employment protection index and the employment percentages in industry.





**Data Sources: Organization for Economic Cooperation and Development (OECD), World Bank**

**Note: All values presented are 5 year averages between 2008 and 2012**

No discernible pattern between labour market rigidity and employment in the manufacturing sector can be figured out from the diagram. Theoretically, rigid labour laws, a characteristic of the Indian labour market<sup>7</sup>, can provide a disincentive to hire workers. Rigid labour laws make it difficult for large firms to fire workers even when they are inefficient. This discourages new hires by employers (Bardhan, 2010). One would therefore expect a positive relation between flexibility of labour laws and employment in industry or manufacturing. However, the graph exhibits no such pattern.

There is abundant literature supporting the above result. Several papers argue that the effects of rigid labour laws are somewhat exaggerated. Dutta Roy<sup>8</sup>(2004) found that over the period 1960-1961 to 1994-1995, the impact of job security regulations was statistically insignificant in 15 of the 16 industries studied. The rigidities in the adjustment of labour were about the same even before the introduction of stringent job security laws (Dutta Roy, 2004).

A comprehensive survey of about 1300 manufacturing firms across nine industry groups reveal that the existence of labour laws and regulations seem to have only a marginal adverse impact on employment. Many firms were able to change employment as they wanted to (Deshpande, et al., 2004). This is amply evident from the loss of more than one million jobs during the latter half of 1990s in the organised manufacturing sector (Sharma, 2006).

<sup>7</sup> The index measure for India is 3.28 thus showing that the Indian labour laws are extremely rigid.

<sup>8</sup> One limitation of citing many of these studies is the selection problem. We do not know about the firms that did not enter because of the stringent labour laws. A more comprehensive study which can isolate the impact of labour market rigidity on manufacturing employment is required to understand its true impact.

Lastly, a survey of 45,000 firms in 106 developing countries revealed that labour market regulations were mentioned by only 3% of the firms as obstacles to job creation<sup>9</sup>, far behind factors such as deficient infrastructure, access to finance and weakness in skill training (IFC Jobs Study, 2013).

## 2. Theoretical Case against Labour Market Flexibility

Economic theory tells us that free market outcomes are efficient and pareto-optimal. It results in employment of resources at market-clearing prices. This leads to both efficiency (almost all resources are employed) and equity (all are rewarded as per their marginal contribution). Regulation of the market by the state leads to deviations from full employment of resources. Hence, attempts should be made to remove as many of these imperfections in the market as possible. Protective labour legislations are said to be market distorting agents and hence labour markets must be deregulated to stimulate investment and employment (Sharma, 2006).

This view however can be contested if we take social welfare of workers into account.

Competing firms can compete either on the basis of reducing their unit costs by lowering wages and labour standards or by pushing up productivity with innovations in technology, product design, methods etc. Only when the conditions of low wages and low working conditions are barred by labour regulations, firms can become enterprising and invest in technological and organisational innovation (Sharma, 2006).

Even Robert Solow (1998), through an analysis of the Beveridge curve for several countries, shows how labour market rigidity cannot be held responsible for increasing unemployment. Every one of the labour regulations or restrictions was intended to promote a desirable social purpose. Some may do so ineffectively or inefficiently. While that would be worth knowing but the fact remains that the wholesale elimination of these so called 'rigidities' is neither desirable nor feasible.

Moreover, if labour market rigidity is more than a slogan, it must be incorporated into macro-economic model building in the normal way we think about the determination of wages and employment in modern market economies. Lastly, the fact that deregulation of the labour market even in the most advanced capitalist countries has not been able to contain high unemployment<sup>10</sup> even after decades of implementation increases our scepticism about deregulation and its supposed benefits (Solow, 1998).

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<sup>9</sup> Another thing to note is that labour laws in India are openly violated. Court judgements on the interpretation of the laws also vary by states. For instance, the term 'inspection' has not been defined in any of the labour laws thus leading to multiple interpretations of what it could mean. Inspectors, charged with the responsibility of enforcement of labour regulation, cannot be held accountable for not conducting physical on-site inspections because a simple telephone call could also suffice for an inspection (Pandey, et al., 2018). Labour law enforcement has remained diluted and the government continues to ignore its evasion (Nagaraj, 2004).

<sup>10</sup> One must note that flexible markets are generally accompanied by social security benefits. Generous unemployment benefits allow unemployed workers to reject vacant jobs in the hope of finding something better. This 'something better' might include not working for a while and thus reduces an economy's efficiency in terms of full utilisation of all its resources.

### 3. Labour Market Reforms in India

Labour laws in India today are too voluminous and ambiguous to be effective. This only promotes costly litigation and corruption in the labour department. A simple concept of wage has as many as 11 definitions in the corpus of Indian labour legislation. These complications have ironically made the cost of compliance higher than the cost of violation (Sharma, 2006). There is, therefore, a need to simplify, rationalise and consolidate different labour laws.

The Ministry of Labour and Employment has been taking steps for the consolidation of the 44 central labour laws into 4 major codes for simplification and rationalisation. The 4 codes are:

1. Code on Wages
2. Code on Industrial Relations
3. Code on Social Security
4. Code on Occupational Safety, health and working conditions.

The draft code on Wages Bill 2017 was introduced in the Parliament last year and is being examined by the Parliamentary Standing Committee on Labour. The report of the panel is awaited. The draft code on Industrial Relations Bill 2018 was recently sent to the cabinet for consideration after which it will be tabled in the parliament. The other two codes are still not ready and are under different stages of consultation (ET Bureau, 2018).

A major goal of codification is to have common definitions of terms like wages, establishments, employee etc., as presently different terminologies and definitions are used in various labour laws. It is believed that consolidation in a few cognate groups will ensure better enforcement and more effective compliance. In the long run, it may even have a positive impact on expansion of regular employment with simplification of rules and procedures (Ministry of Labour and Employment, 2011).

While there is severe contention about whether these reforms can affect employment, most economists agree on the need for simplification of the current labour laws. However, codification cannot be viewed as just a simplification effort. It proposes several changes such as revision of the minimum wage, the threshold of the number of employees in a firm for specific laws etc. Now codification, when viewed as a reform, has certain problems, which demand attention and are presented as follows:

#### 3.1 Burgeoning Informal Sector

The code continues to focus on the small minority of regular workers employed in the organised sector and does nothing to address the interests of the majority of informal workers (Barnes, 2017). 80.9% of all employed persons in India work in the informal sector (International Labour Organisation, 2018). The burgeoning employment in the informal sector necessitates regulation of the sector. The prevalent abysmal conditions of employment have made the modern informal sector competitive. In the absence of enforcement of even minimum labour standards, it is

inevitably caught in a conundrum of low productivity and low wages. This needs to be disrupted by ensuring a floor of labour standards so that innovation in productivity is the only option left to stay competitive (Sharma, 2006).

### **3.2 Perils of increasing flexibility**

Codification of labour laws was a major part of the currently ruling NDA party's economic reform agenda. Several reforms have already been enacted by NDA-led state governments in areas of labour contractors and hire & fire flexibility. For example, the Government of Rajasthan, Haryana and Madhya Pradesh have made it easier for employers in the organised sector to sack workers. This has been done by modifying the rules of the Industrial Disputes Act 1947, making it possible for firms which employ 300 or more workers to make large-scale layoffs without state permissions. This change will be applied nationally if the Government is able to pass its labour code on industrial relations (Barnes, 2017).

However, one must be wary of such attempts at increasing labour market flexibility. The revolt of young workers in France in 2006 should have alerted us to the possibility of such social unrest anywhere in the world in the name of promoting labour market flexibility if 'free hire and fire' sanction is given to employers (Sharma, 2006).

As one would expect, in September 2016, a massive nationwide strike caused major disruption to the economy. Some unions have claimed that this was the largest general strike in history with up to 150 million workers involved and costs to business of around 2.7 million USD. In fact, since the election in 2014, trade unions have periodically mobilised in large numbers to oppose the government's labour agenda, which involves codification of the labour laws (Barnes, 2017).

## **Conclusion**

Flexible labour markets adversely affect the interests and welfare of workers. Labour market institutions play a minor role, if any at all, in determining employment. This weakens the case for the total removal of labour regulations especially relating to lay-offs and retrenchments. Moreover, Barnes (2017) shows how the insecurity of employment and income that the deregulation of the labour market would engender would be politically unacceptable.

We must also realise that allowing more flexibility in hiring and firing, if at all necessary, has to be combined with a reasonable scheme of unemployment compensation or adjustment assistance<sup>11</sup>. An income security system, consisting of unemployment benefits for a specified period, provisions for re-training and active assistance for job search, must precede the grant of reasonable freedom to employers to retrench workers. Therefore, reforms ensuring income security instead of job security should be considered.

Particularly in the case of India, where labour regulation has remained aspirational with limited enforcement, it does not make sense to allocate resources towards a more flexible labour market at this stage. Codification and consolidation of labour laws is desirable as long as it simplifies the

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<sup>11</sup> India is among the lowest spenders on social security. Even China, whose name is often cited in the context of labour flexibility, adopted a wide range of reforms for the social security of its workers before introducing reforms for labour market flexibility (Sharma, 2006).

current labour regulation in India, without compromising its supposed rigidity. There is little basis for greater freedom for employers to hire and fire and if anything, there is perhaps a need to protect our workers (Nagaraj, 2004). Therefore, other problems such as insufficient access to credit and infrastructural deficiency should receive greater attention to achieve a flourishing manufacturing sector in the foreseeable future, to impede the ongoing jobless growth in India.

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## MOVING UP THE ECONOMIC LADDER

*Cross country evidence on educational mobility in developing countries*

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### ABSTRACT

The concept of economic mobility - the notion that individuals can improve their condition in life through hard work and fulfil their aspirations irrespective of their family background – is a fascinating one. There have been numerous studies on mobility of developed countries. Off late, mobility has been increasing in developing economies, but unevenly. Here we attempt to understand the factors that could possibly explain the differences in educational mobility (which is a good proxy for income mobility) in 34 developing countries and the role of institutions and policies in affecting the same. It was found that institutional and cultural factors play an important role in explaining this.

Keywords: Intergenerational Upward Mobility, family background effects.

JEL Classifications: C50, I3

### INTRODUCTION

#### What is economic mobility?

Economic mobility across generations, also known as intergenerational mobility (IGM) in economic literature, is a key element of human progress. It tells us to what extent children enjoy a higher living standard as compared to their parents. A society can be deemed more or less mobile depending on whether the link between parents' and children's social status as adults is looser or tighter. In a relatively immobile society an individual's wage, education or occupation tends to be strongly related to those of his/her parents.

#### Education mobility - A key element of economic mobility

Education is a key dimension of human progress. Education mobility is an essential element of economic mobility, when economic mobility is understood in terms of well-being rather than income alone. Moreover, because education tends to be a strong predictor of lifetime earnings, mobility in education is a key factor influencing income mobility. Economic theories predict that IGM in education and IGM in income are positively correlated.



Intergenerational educational mobility depends on a host of factors that determine individual economic success, some related to the heritability of traits (such as innate abilities), others related to the social and cultural environment in which individuals develop (such as social norms, work ethics, attitude towards risk and social networks). And lastly, it depends on policy interventions and institutional factors of a country. Sustainable and inclusive growth and public policy must help give scope to such aspirations.

But evidence suggests that, in too many parts of the world, mobility poses a challenge. This concern is especially acute for developing countries as it is harder for them to move from the bottom to the top of the economic ladder.

### **Trends in mobility in developing countries**

Developing countries have increasingly fallen behind developed countries in mobility. Mobility has improved in some developing regions, but declined or stagnated in others.

Although IGM on average has improved across developing economies since the 1950s, the improvements are highly uneven and not evident everywhere. A breakdown of trends in the IGM between the 1950s cohort and the 1980s cohort shows that positive changes are largely concentrated in East Asia and the Pacific, Latin America and the Caribbean, and the Middle East and North Africa. In contrast, absolute IGM has declined in Eastern Europe and Central Asia and stagnated in Africa.

## **REVIEW OF LITERATURE**

There have been many studies highlighting the factors affecting intergenerational education mobility. We have broadly classified these factors into 4 categories.

### **Role of government and influence of government policies:**

Factors like the policies and schemes implemented by the government should have a positive effect on education mobility, that is the mobility will be higher if the policy is good and is implemented effectively (Sutherland and Price, 2007). Similarly, the expenditure incurred by the government on schools and primary education has a positive effect on mobility. Early childhood care and education for the development of cognitive skills at later stages in life has also been recognized as an important factor. (Causa and Chapuis, 2009)

### **Inequality in the region:**

It is widely believed that countries with greater levels of income inequality also have lower levels of intergenerational mobility (Corak 2013). This relationship is known as the Great Gatsby Curve (GGC). We have taken indicators like GINI index and poverty headcount ratio which show this relationship.

### **Cultural variables:**

Family structures differ in how children are motivated to learn, what beliefs they have, the goals

they aim to achieve and in the means of learning. The effect of cultural variables on educational mobility has been established using metrics of hard work, competitiveness and free choice (Kathrin Thiemann, 2016). Since mobility and thus, equality of opportunity also depend on cultural aspects, the political focus should not only be on the design of adequate incentives in school and the labor market, but also on the formation of values and beliefs in early childhood. Children from disadvantaged backgrounds can be motivated by the belief that they will have free choice and control over their lives and by a competitive environment.

### **Child related Health factors:**

Circumstances begin affecting opportunities early in a child's life. Children's endowments at birth are influenced by a number of factors including nutrition, height and weight, basic healthcare and medical services, sanitation, safe drinking water and mother's health. (Fair Progress? By the World Bank Group, 2018).

### **EMPIRICAL ANALYSIS**

This study uses the Ordinary Least Squares approach to understand the factors that determine upward educational mobility. The model will estimate the equation given below:

$$Y = \beta_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7$$

The dependent variable that we have taken here is absolute upward mobility.

According to the World Bank report, 'Fair progress?', "Absolute upward mobility in an economy is measured by the share of respondents in a nationally representative survey who have higher education levels than the maximum level of education among the parents of the respondent (excluding individuals whose parents have tertiary education)".

Like absolute upward mobility, relative mobility is also another way to find out mobility, which measures, as defined by the same report the extent to which the educational attainment of individuals is independent of the education of their parents, using the coefficient from regressions of children's years of education on the education of their parents. Higher values of this regression coefficient indicate greater persistence, and hence lower relative mobility. We have measured the absolute upward mobility for 1980 birth cohorts which means that we have taken the data for the people born in 1980, for 33 countries from 1996 to 2016.

Variable	Description
X1	Government expenditure on education (as % of GDP)
X2	Poverty headcount ratio at \$3.20 a day (2011 PPP) (% of population)
X3	Hard work ratio (value attached by lesser educated people to hard work/value attached by highly educated people to hard work)
X4	Free choice ratio (the liberty of children to choose their career paths on their own- lesser educated/highly educated)
X5	GDP per capita
X6	Account ownership at a financial institution or with a mobile-money-service provider, poorest 40% (% of population ages 15+)
X7	Adjusted net enrollment rate, primary (% of primary school children)

## INTERPRETATION AND RESULTS

Running OLS regression on the above-mentioned independent factors yielded the following results:

-Government expenditure, poverty headcount ratio, adjusted net enrollment rate and GDP per capita are significant at the 5% level.

-Hard work ratio is significant at the 10% level.

Source	SS	df	MS	Number of obs =	30
Model	1.51937881	7	.217054116	F( 7, 22) =	9.57
Residual	.498779325	22	.022671788	Prob > F =	0.0000
				R-squared =	0.7529
				Adj R-squared =	0.6742
Total	2.01815814	29	.06959166	Root MSE =	.15057

Mobility	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Governmentexpenditureoneducat	.0204118	.0026138	7.81	0.000	.0149912 .0258325
Povertyheadcountratioat320	.0077602	.0026028	2.98	0.007	.0023623 .0131581
hardworkratio	-.5164272	.250919	-2.06	0.052	-1.036801 .0039469
freechoicerratio	.0008622	.0069221	0.12	0.902	-.0134933 .0152176
GDPPercapita	.0000406	.0000163	2.49	0.021	6.74e-06 .0000745
Accountownershipofpoorest40	.0010232	.0016631	0.62	0.545	-.0024259 .0044723
Adjustednetenrollmentrate	.0134048	.003568	3.76	0.001	.0060053 .0208044
_cons	-.545627	.3354142	-1.63	0.118	-1.241234 .1499795

## DIAGNOSTIC TESTS

### Multicollinearity

The variance inflation factor was very small indicating no presence of multicollinearity.

```
. vif
```

Variable	VIF	1/VIF
Povertyh~320	4.90	0.203950
GDPPercapita	2.62	0.381147
Adjustedne~e	2.55	0.392260
hardworkra~o	1.83	0.546585
Government~t	1.47	0.679859
Accountow~40	1.45	0.689561
freechoic~o	1.12	0.891671

### Heteroscedasticity

The Breusch Pagan test did not reject the null hypothesis of homoscedasticity indicating no presence of heteroscedasticity.

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: Governmentexpenditureoneducat Povertyheadcounratioat320 hardworkratio freechoiceratio GDPPercapita
Accountownershipofpoorest40 Adjustednetenrollmentrate

chi2(7) = 7.21
Prob > chi2 = 0.4069
```

### Ramsey Reset Test

The Ramsey test did not reject the null hypothesis at 10 percent significant level indicating no presence of functional misspecification in the model.

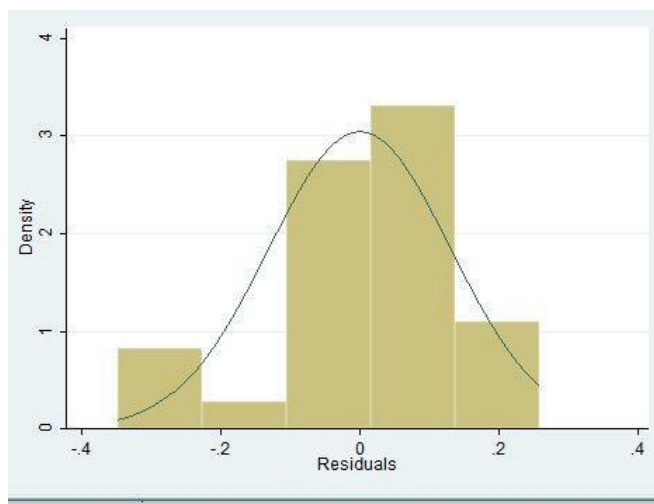
```
Ramsey RESET test using powers of the fitted values of Mobility
Ho: model has no omitted variables
F(3, 19) = 2.11
Prob > F = 0.1331
```

### Normality of Errors

The Jarque Bera test showed that the errors were normally distributed with the null hypothesis not rejected at 5 percent significance level. Along with this, the histogram of residuals bears a close resemblance to a symmetric, bell shaped distribution suggesting that the normality assumption is true.

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint	
				adj chi2 (2)	Prob>chi2
resid	30	0.0732	0.2422	4.62	0.0991



## ANALYSIS AND CONCLUSION

We have regressed education mobility on **government expenditure on education** and the results show that government expenditure is highly significant as the p value is very small, depicting the positive relation between the two.

**Poverty headcount ratio** shows the proportion of people who live below poverty line. The coefficient for it is positive and highly significant which depicts that as more people are below poverty line, any improvement in education will result in upward mobility, whereas if the standard of living is very high in the first place then, any improvement in education will have less potential for upward mobility. A possible explanation of this result is the ‘ceiling effect.’

**Hard work ratio** is ratio of how much value low income group of people attach to hard work to how much value high income group of people attach to hard work. In our model, the coefficient of hard work ratio is negative and significant at 10% which depicts that richer people value hard work more.

**Free choice ratio** refers to the liberty of children to choose a career path on their own, for which the coefficient is positive and significant in our model which shows that if children have more liberty to choose their future path then there will be a higher chance of upward mobility.

**GDP per capita** which is shown in the model is highly significant and positive which depicts that the countries with higher GDP have higher chances of upward mobility.

Account ownership of the poorest 40% is positive and highly significant because it shows that if more of the people have access to credit then incentive to invest in child’s education increases.

**Adjusted net enrollment rate** is also positive and significant which shows that the government policies and schemes will also have a positive effect on the upward mobility.

## DATA SOURCES

### Independent variables

Government expenditure on education, total (% of GDP), Poverty headcount ratio at \$3.20 a day (2011 PPP) (% of population), GDP Per capita, Account ownership at a financial institution or with a mobile-money-service provider, poorest 40% (% of population ages 15+), Adjusted net enrollment rate, primary (% of primary school age children) retrieved from <http://databank.worldbank.org/data/source/world-development-indicators#>

*The World Bank, World Development Indicators* [Data file].

Free choice Ratio, hard work ratio retrieved from  
file:///C:/Users/asus/Downloads/cultureasdeterminant.pdf

*Culture as a determinant of intergenerational educational mobility- Evidence from PISA*

### Dependent variables

*Global Database Intergenerational Mobility*, Development Research Group, World Bank.

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4. *Corak, 2013*
5. *Kathrin Thiemann, 2016*



## Swachh Bharat Abhiyaan – Through the Lens of Gender and Caste

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### Abstract

The challenge of access to sanitation is not new to India. However, what makes this problem more complex is the country's demographic profile and deep-rooted traditions of patriarchy and caste system. For years, access to sanitation facilities and more importantly, to good quality sanitation facilities has been influenced by identities of caste, class and gender. Discrimination and inequitable distribution have led to skewed growth and superficial, lofty statistics. This paper seeks to analyse the implicit framework, implementation and limitations of the Swachh Bharat Abhiyaan – India's largest sanitation project and movement - through the lens of gender, caste and class.

*Keywords: Sanitation, India, Swachh Bharat Abhiyaan, gender, caste, class*

*JEL Classification: I14*

## 1. Introduction

### 1.1 The movement

The Swachh Bharat Mission (SBM) was launched on 2<sup>nd</sup> October, 2014 by the Government of India, with an aim to eliminate open defecation by constructing community and household owned toilets all across the country by 2<sup>nd</sup> October, 2019. The mission is in accordance with the United Nations Sustainable Development Goals (SDG 6) that states, "Ensure availability and sustainable management of water and sanitation for all." The SBM is bifurcated into two sub missions, the Swachh Bharat Mission (Rural) and the Swachh Bharat Mission (Urban). The former operates under the Ministry of Drinking Water and Sanitation and latter under the Ministry of Urban Development.

### 1.2 Expenditure and outlays

Government statistics show significant resource allocation and progress under the programme. As per 2018 Budget documents, the Central Government has spent more than 56,000 crore rupees under the programme. 87% of the spending has been done in rural areas. The actual spending would exceed this amount as the central funding is supposed to be 75% of the total expenditure, with state governments contributing an additional 25% of the funds. State governments can also generate funds over and above its minimum 25 % share to make projects viable. In addition,

companies, especially under their Corporate Social Responsibility programmes, have also contributed to the funds, although there is no authoritative measure of this.

### **1.3 The problem of open defecation**

As the rest of the world steadily works towards eliminating open defecation, this problem continues to persist in India. According to the Swachhta Status Report, published in 2016 by the National Sample Survey Office (NSSO), under the Ministry of Statistics and Programme Implementation, in rural India, 55.4% households contribute to open defecation. This percentage in urban areas is 8.9%.

The practice of open defecation is associated with several negative externalities causing a detrimental impact on health. Infectious diarrhea, malnutrition and stunted growth among children, reduction in India's human capital are a few dire consequences.

In a recent study conducted in five states of rural India, the results indicate a large revealed preference for open defecation which implies that people choose to defecate in the open even when other alternatives are available. The study reports that many people living in households with latrine access nevertheless defecate in the open as a result of cultural and behavioral norms, social norms, infrastructural limitations of government constructed toilets, issues of privacy and safety, lack of access to water.

### **1.4 Past programs and campaigns**

The first major Union Government program on sanitation, Central Rural Sanitation Program (CRSP) was launched in 1986 to improve sanitation coverage in rural areas. This was restructured into the Total Sanitation Campaign which focused on information, communication and education with a 'community led' and 'people centered' approach. The program was reinvented as the Nirmal Bharat Abhiyaan in 2012. And most recently, the Swachh Bharat Abhiyaan is seen as the most ambitious sanitation project and movement in the country till date.

However, access to water and sanitation and the quality of these services is strongly influenced by identities of gender, caste and class in our country. Does the Swachh Bharat Mission take into account the glaring loopholes in infrastructural and social policy with respect to inequality in terms of access to these facilities? Moreover, here we question and analyse how layered this access is and how institutions of patriarchy and the caste system continue to affect the experience of certain sections of the population in negotiating access to sanitation and public spaces.

## 2. Women

Imagine having to calculate, plan and limit one's trips to the toilet on a daily basis. Much of this planning is a consequence of closing times of public toilets for females being as early as six o'clock in the evening, subject to the whims and fancies of toilet attendants. This leaves women with close to no alternatives other than heading to the fields to relieve themselves at night. Even in toilets that don't close early, reports suggest that the condition of the toilets is too deplorable, discouraging women from using them. When we restrict a woman's access to toilets post 6 pm, even though her male counterparts are allowed 24/7 access, the message is clear: women have 'limited' agency to access public places.

Moreover, there are several disconcerting accounts of women keeping a check on what they eat at night. Some often skip dinner and monitor their fluid intake in order to kill the urge altogether which has adverse implications on their health, increasing the chances of suffering from chronic constipation, urinary tract infections, kidney stones and skin problems, accompanied by exhaustive psychological trauma and stress. Complications during pregnancy and in menstruation cycles are also common.

Further, I contend that most women have faced harassment in some form or the other, which further diminishes their access to toilets and deeply impacts their psyche. Often, they are molested and eve teased on their way to the toilets (clearly indicated by the water they carry since several community toilets lack running water). Moreover, the infrastructure of the toilets or lack thereof worsens the situation making women vulnerable and easy targets. For instance, weak structures, faulty design of cubicles, low walls, absence of latches and female attendants, broken latches, weak doors, poor lighting all lead to the prioritization of sexual safety over physical health and well being by the common woman, plunging her in a vicious cycle.

## 3. Caste and Class

The 12<sup>th</sup> Five Year Plan document states, "...there are also some disturbing reports about social exclusion, with SCs, STs and minorities being discriminated against." Historical and institutional discrimination and subjugation of certain classes led to their isolation in society. Even today, Scheduled Castes households, for instance are located on the periphery of villages or cities. Likewise, tribal populations inhabit geographically isolated regions. This poses logistical constraints on water supply accompanied by high costs of building toilets. Hence, it is delusional to deny the role caste ethos plays in access to sanitation in India.

Apart from spatial and geographical variations and constraints, one must acknowledge the practice of manual scavenging as a manifestation of caste based inequality (Kaul 2015). According to Census 2011, 7.94 lakh latrines exist in the country from which night soil is removed by humans.

Most of those engaged in the practice belong to Scheduled Castes and a large proportion of these are women. This stems from the belief that sanitation is the work of the lower castes.

Anand Teltumbde writes, “Indian culture, which is nothing but a caste culture, externalizes the responsibility of maintaining cleanliness to a particular caste. It stigmatizes work as unclean and workers as untouchables. More than untouchability, a caste ethos is pervasively reflected in the behavior of Indians. This ethos which effectively ‘casteises’ and genders various tasks, persists despite the spread of education, globalization and urbanization.” He argues that it will never occur to Modi that his act of beginning the cleanliness drive from Valmiki Colony actually reinforced the association between Valmikis and scavenging. “I do not believe that they [Valmikis] have been doing this job just to sustain their livelihood....At some point of time, somebody must have got the enlightenment that it is their duty to work for the happiness of the entire society and the Gods; that they have to do this job bestowed upon them by Gods; and that this job of cleaning up should continue as an internal spiritual activity for centuries” (Karmyog, collection of speeches by Modi). The use of words like spiritual, enlightenment and ‘Gods’ is deliberate and reaffirms the regressive and discriminatory belief that a person’s livelihood is pre-decided in accordance with his birth into a particular caste and class, perpetuating the principles of a dehumanizing caste system.

#### **4. Conclusion**

Firstly, it is highly unlikely to achieve the target of an ‘open defecation free India’ by 2019 with only an infrastructural push. Merely providing toilet ‘access’ without promoting toilet use is unlikely to reduce open defecation drastically. Programs must concentrate on behavioral change and not just infrastructural change.

Secondly, the interlinkages between sanitation, gender and sexual violence, caste, class and space must be understood and further explored in academic and social policy discourse. The gaps in the present infrastructure must be addressed in order to cater to the needs of different sections of society – pregnant women, people with disabilities, elderly people, transpersons and women with menstrual hygiene requirements.

Thirdly, as long as we as a nation allow our guiding principles in policy making to stem from institutions and systems that perpetuate division, inequality, subjugation and oppression, we can never be truly ‘swachh’. As long as the caste ethos and gender inequality are not dismantled and eradicated, India cannot be swachh (Teltumbde).

The question remains: Will rhetoric be backed by (equitable) result?

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## Women in Politics

*A cross-national study on the determinants of women's representation in parliament*

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*“If you don't have a seat at the table, you're probably on the menu”*

**-ELIZABETH WARREN**

JEL Classifications: C31, C51

### 1.Introduction

Studies show higher numbers of women in parliament generally contribute to stronger attention to women's issues. Women's political participation is a fundamental prerequisite for gender equality and genuine democracy. It facilitates women's direct engagement in publicdecision-making and is a means of ensuring better accountability to women. But the facts and figures show a different trend.

### FACTS AND FIGURES

#### Women in parliaments

- Only 22.8 per cent of all national parliamentarians were women as of June 2016, a slow increase from 11.3 per cent in 1995
- As of October 2017, 11 women are serving as Head of State and 12 are serving as Head of Government.
- Rwanda had the highest number of women parliamentarians worldwide. Women there have won 63.8 percent of seats in the lower house.
- Globally, there are 38 States in which women account for less than 10 percent of parliamentarians in single or lower houses, as of June 2016, including 4 chambers with no women at all.

### CEREMONIAL REPRESENTATION OF WOMEN IN POLITICS

There's also another extremely important thing to state: there are some countries that the participation of women in politics stands at high rates. However, this is only something formal and in reality women black to raise their voices those ideas in the political sphere.

Burundi, for example, has one of the highest allocations of seats in parliament for women. 36% of MPs are women. Regardless the statistics, the rights of women politicians are violated here. The female members of the parliament complain that whenever they want to say something or act out of the plan, which the powers of the country give them, they put their political career under a serious danger. Their actions are heavily restricted so, the numbers are here to indicate only the formal part of the situation. The reality is far more different. Democracy and women's rights are nothing but a fairytale.

#### SUPPORT FROM THE UNITED NATIONS

For many decades politics was considered a male dominated sphere where women had nothing to do. Female participation in politics had specially enlarged in 1954 when the United Nations convention on political rights went into force.

This enabled women to gain equal rights to vote, hold an office and have an access to public services. Of course, increasing the rate of women's participation is not, nor should it be, just a numbers game. It is also about ensuring that the voices of women who are represented are heard, and that their views and contributions are valued.

Women's right to participate is also about ensuring that women's involvement is not limited to engagement around so-called 'women's issues'. There are instances where the responsibility for so-called 'feminine' portfolios, such as health and childcare, are allocated to female cabinet members, while responsibility for the more 'masculine' portfolios, like defense and finance, are allocated to male cabinet members.

#### AFTER ALL THE MEASURES, WE STILL LAG BEHIND

It's difficult to deny that getting an office in the political sphere for women is much more difficult than for men. The reasons come from deeply rooted stereotypes which unconsciously reflect on today's situation as well. Statistics of women participation in politics state once again that women still remain underrepresented in this sphere. Because of lack of support, women continue to be underrepresented in politics around the world. The obstacles women face constantly changes throughout the time but continue to create not fewer hardships for women. After being elected, women continue to face hardships. One of them is harassment against women in media.

Many women politicians from different corners of the world complain about getting sexist treatment from media which shows lack of respect towards their gender. The non-equal approach towards women brings lack of confidence among women and caused a huge gender gap in politics. In this project we try to find the factors that affect the representation of women in parliaments all over the world. There are a variety of factors that influence women participation ranging from political, social and economic and legal.



## 2. Literature Review

Worldwide, women constitute only 19.9% of parliaments, despite composing of just over 50% of the population. This number has frequently sparked a discussion in the world, with researchers attempting to explain both the existence of this discrepancy and cross-country variation and the possible reasons for such an existing structure of political underrepresentation of women. Prior research has emphasized the type of electoral system, quotas, the economic affluence of a country, the timing of women's suffrage, as well as the political culture. Broadly speaking, a combination of socio-economic, political and cultural factors has been tested to be the cause of the same, explained as below:

### Different Factors that Affect Women's Representation

#### 1. Type of Electoral system:

There are three predominant systems- Proportional representation, Semi-proportional system and Plurality system.

Theories suggest that women's representation will be higher under a more proportional electoral system than under a less proportional electoral formula. In the scholarly milieu, there is general agreement that electoral institutions are an important factor affecting the level of women's representation. With the exception of Stockemer few studies (e.g. Norris, 2004), multiple cross-national investigations by, among others, Champman (1993), Matland and Studler (1996), Rule and Zimmermann (1994), Sawyer (1997) and Schwindt-Bayer and Mishler (2005) have consistently shown that women's representation is higher under proportional representation (PR) than under a plurality system or semi-proportional system.

#### 2. Existence of quota:

Countries that have legally imposed quotas or in which several parties have implemented quota clauses are more likely to have more female deputies than countries where there are no quota clauses. This institutional factor, is seen as an efficient, but rather selective method of increasing women's representation (Squires & Wickham-Jones, 2001), with a lot of variation in the implementation of these quotas across countries. However theories suggest, when applied more frequently by states or by the parties themselves, their relative importance with regard to women's representation should increase.

#### 3. Literacy rate:

Previous research has found mixed results for the role of education in predicting parliamentary participation (Rule, 1987). A woman may achieve high levels of education but be reluctant to pursue a role in public life, such as in parliament.

#### 4. GDP per capita:

Some research suggests that the higher the wealth of a country, the higher the representation of women in that country, as countries with higher levels of per capita income have typically more equitable societies. However, this statement lacks significant proof and thus there are contradictory findings on whether the wealth of a country is an important factor in determining women’s representation.

5. Years since suffrage:

In his study of turnout rates, Franklin (2004) states that female empowerment is a slow process. During the first elections after gaining suffrage, women’s turnout rates were significantly lower than those of men. However, the gap has decreased, as successive cohorts have grown accustomed to voting. The same socialization process has occurred for women holding office. According to Kenworthy and Malami (1999) and Matland (1998), voting rights stand for the political empowerment of women. The theory states that the earlier women gained equal political rights, the earlier they could get involved in politics. In the long run, this involvement should lead to women’s political empowerment and to more female deputies.

6. Cultural factors

Cultural variables are hard to measure, and research typically uses proxy variables such as region and religion (Inglehart Norris, 2003) to capture the effects of cultural and attitudinal differences. Recent work by Reudin (2010) found that more direct measures of attitudes towards women held higher predictive power.

**3. Empirical Analysis**

This study uses the Ordinary Least Squares approach to understand the factors that determine the percentage of seats held by women in the lower house of parliaments across countries. The sample contained 51 countries. The model will estimate equation (1).

$$Y = \beta_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \alpha_1 X_7 + \delta_1 X_{81} + \delta_2 X_{82} + \gamma_1 X_9 + \varepsilon \dots\dots(1)$$

Dependent variable (Y):

The percentage of seats held by women in the lower house of the parliament across the 51 countries as of 2016.

**Independent variables:** All independent variables are also taken for the year 2016.

Variable	Meaning
----------	---------

$X_2$	GDP per capita in US dollars with 2005 as base year
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$X_3$	Female labor force, as a percentage of total
$X_4$	Literacy rate
$X_5$	Female population, as a percentage of total
$X_6$	Years since women suffrage
$X_7$	Existence of gender quota in the lower house (Coefficient for Yes denoted by $\alpha_1$ ).
$X_8$	Predominant religion (Coefficient denoted by $\delta_1$ for Christianity, $\delta_2$ for Islam and $\delta_3$ for others)
$X_9$	Type of electoral system (Coefficient for Proportional Representation(PR) system denoted by $\gamma_1$ )
$\varepsilon$	Error term

\*Note:  $X_7, X_8, X_9$  are dummy variables

#### 4. Model and Results

A number of models were examined to understand the effects of various groupings of factors in determining political representation of women across countries.

**Model 1:** The first model included only socio-economic factors - GDP per capita, % of female labor force, literacy rate and % of female population. Here only **GDP per capita** was found to be significant at the 5% level of significance. The other variables were not significant. Moreover adjusted  $R^2$  was only **14.17%**. This indicates that socio economic factors alone do not have any

Model 136: OLS, using observations 1-51

Dependent variable: Percentageofseatsheldbywom

	coefficient	std. error	t-ratio	p-value
const	-13.4026	27.9648	-0.4793	0.6340
GDPpercapita	0.000153456	7.26658e-05	2.112	0.0402 **
Percentageoffema~	0.0120778	0.271710	0.04445	0.9647
femalepopulation~	0.503377	0.587428	0.8569	0.3959
Literacyrate	0.107372	0.147365	0.7286	0.4699
Mean dependent var	25.51373	S.D. dependent var	11.42093	
Sum squared resid	5149.842	S.E. of regression	10.58079	
R-squared	0.210375	Adjusted R-squared	0.141712	
F(4, 46)	3.063870	P-value(F)	0.025527	

explanatory power.

### Model 2:

The second model included the political factors alone - existence of gender quota, years since women suffrage and type of electoral system. Here, **existence of quota** and **years since women suffrage** were significant at the 5% level of significance and type of electoral system at the 10% level of significance. The explanatory power however remained low with adjusted  $R^2$  being **19.37%**.

Model 126: OLS, using observations 1-51

Dependent variable: Percentageofseatsheldbywom

	coefficient	std. error	t-ratio	p-value
const	10.5981	4.84713	2.186	0.0338 **
Existenceofquota~	6.03617	2.94584	2.049	0.0461 **
Typeofelectorals~	5.58280	2.99065	1.867	0.0682 *
Yearssincewomens~	0.125227	0.0603842	2.074	0.0436 **
Mean dependent var	25.51373	S.D. dependent var	11.42093	
Sum squared resid	4943.009	S.E. of regression	10.25526	
R-squared	0.242088	Adjusted R-squared	0.193711	
F(3, 47)	5.004168	P-value(F)	0.004299	

Since the above two models had very low explanatory power, it was concluded that socio-economic factors or political factors in isolation do not explain the dependent variable satisfactorily. Thus a combination of the two along with an important cultural factor- religion was needed to be incorporated.

Model 3 :

In this model, existence of quota, percentage of female labour force, predominant religion and GDP per capita were taken. Adjusted  $R^2$  for this model was **37.52%**. **Christianity** showed positive impact on political representation of women and significant at 1% level. **Existence of quota** and **GDP per capita** showed significance at 5% level. Their coefficients had positive signs.

Islam, did not have significance, but had a negative sign which complies with existing theory. But, on the other hand, percentage of female labour force had a negative coefficient and no significance. The negative sign contradicted theory. This could indicate multicollinearity.

Model 105: OLS, using observations 1-51  
Dependent variable: Percentageofseatsheldbywom

	coefficient	std. error	t-ratio	p-value	
const	16.0529	10.3267	1.555	0.1271	
Existenceofquota~	6.51081	2.75394	2.364	0.0224	**
Percentageoffema~	-0.0774059	0.241621	-0.3204	0.7502	
Predominantrelig~	10.5693	3.81785	2.768	0.0082	***
Predominantrelig~	-0.233341	5.90712	-0.03950	0.9687	
GDPpercapita	0.000123625	6.11095e-05	2.023	0.0490	**
Mean dependent var	25.51373	S.D. dependent var	11.42093		
Sum squared resid	3667.497	S.E. of regression	9.027731		
R-squared	0.437663	Adjusted R-squared	0.375181		
F(5, 45)	7.004627	P-value(F)	0.000065		

Diagnostic tests:

Heteroscedasticity: Since the p value(0.579) was found to be greater than 0.05, there is no heteroscedasticity.

Ramsey's RESET: Since the p value(0.068) was found to be greater than 0.05, we take the model to be correctly specified.

```
White's test for heteroskedasticity -
Null hypothesis: heteroskedasticity not present
Test statistic: LM = 14.2621
with p-value = P(Chi-square(16) > 14.2621) = 0.579191
```

```
RESET test for specification -
Null hypothesis: specification is adequate
Test statistic: F(2, 43) = 2.85998
with p-value = P(F(2, 43) > 2.85998) = 0.068214
```

Multicollinearity: The correlation matrix showed a **strong negative correlation(-0.82)** between Islam and percentage of women labour. But since we have categorical data with more than two groups(religion), Pearson correlation coefficient is not a right measure of correlation\*. Thus auxiliary regressions were run, where each explanatory variable was regressed on the remaining

ones. Percentage of women labour was taken as dependent variable, a high  $R^2$  value of 0.705, again proving a correlation. Similarly taking Islam to be the dependent variable also gave  $R^2$  as 0.709. The other auxiliary regressions produced very small  $R^2$ . Examining the VIF also, we find the following result.

This shows that both percentage of female labour and Islam is collinear with other variables. As a remedy, we drop one of the variables to arrive at our last model.

```
Variance Inflation Factors
Minimum possible value = 1.0
Values > 10.0 may indicate a collinearity problem

Existenceofquotainlowerhou      1.182
Percentageoffemalelabourfor      3.394
PredominantreligionD3Christ      2.174
PredominantreligionD4Islam      3.442
GDPpercapita                     1.415
```

#### Model 4:

Explanatory variables taken – GDP per capita, predominant religion and existence of quota. Here we got **Christianity** to be significant at the 1% level and **GDP per capita** and **existence of quota** to be significant at the 5% level. Adjusted  $R^2$  was **38.73%** and  $R^2$  was **43.6%**The explanatory power

```
Model 93: OLS, using observations 1-51
Dependent variable: Percentageofseatsheldbywom

      coefficient   std. error   t-ratio   p-value
-----
const          12.8908        3.00555    4.289     9.11e-05 ***
GDPpercapita    0.000121104      6.00067e-05  2.018     0.0494 **
Predominantrelig~  10.3458         3.71678    2.784     0.0078 ***
Predominantrelig~   1.10459         4.13666    0.2670    0.7906
Existenceofquota~  6.45416         2.72132    2.372     0.0219 **

Mean dependent var  25.51373   S.D. dependent var  11.42093
Sum squared resid  3675.861   S.E. of regression  8.939241
R-squared          0.436380   Adjusted R-squared  0.387370
F(4, 46)          8.903822   P-value(F)         0.000021
Log-likelihood     -181.4477   Akaike criterion   372.8953
Schwarz criterion  382.5544   Hannan-Quinn      376.5863
```

hasn't reduced after removing percentage of female labour.

#### Diagnostic checks:



Multicollinearity: Analysing the VIF, we find that none of the explanatory variables have a high value indicating that none of them are correlated with each other.

```
Variance Inflation Factors
Minimum possible value = 1.0
Values > 10.0 may indicate a collinearity problem

      GDPpercapita      1.392
PredominantreligionD3Christ  2.102
PredominantreligionD4Islam  1.722
Existenceofquotainlowerhou  1.178
```

Heteroscedasticity (White's test): Since the p value(0.415) was greater than 0.05, there is no heteroscedasticity.

Ramsey's RESET: Since the p value was greater than 0.05(0.104), the model is specified correctly.

```
White's test for heteroskedasticity -
Null hypothesis: heteroskedasticity not present
Test statistic: LM = 10.2957
with p-value = P(Chi-square(10) > 10.2957) = 0.414943

RESET test for specification -
Null hypothesis: specification is adequate
Test statistic: F(2, 44) = 2.38752
with p-value = P(F(2, 44) > 2.38752) = 0.10366
```

Thus, OLS assumptions are satisfied.

## 5. Conclusion

Our final model confirms with expectations that presence of a gender quota has a significant, positive impact on the political participation of women, countries like United kingdom, Netherlands, Norway and Germany have gender quotas and have high representation of women in parliament than the countries like Bangladesh, India and China. Similarly GDP per capita too has a positive impact, meaning richer countries like Luxembourg, Japan and Switzerland could have an environment that better encourages women in political participation. Christianity was found to have a highly significant impact on the participation of women in politics. It is observed that most world religions maintain male social dominance within societal structures. They do not advocate for women emancipation in terms of complete equality. Thus one possible explanation for the result obtained could be that most of the countries in this study, having Christianity as its predominant religion were Nordic countries(Denmark,Finland,Norway,Sweden,and Iceland etc). It is well known that Nordic countries are world leaders in gender parity. These countries have given abundant opportunities to women to rise to positions of leadership. The policies in these countries have made it possible for women to balance work and family by means of generous paid maternity leave and post maternity re-entry programmes. Also, Nordic countries have gender quota in boards of directors of companies too. Thus taking Christianity to be indicative of Nordic countries and Islam as indicative of Middle East countries, the result can be fairly explained. But contradictory



to expectations, we could not find a strong and positive impact of percentage of female labour on political participation of women.

## **6.Limitations**

Reasons for a low  $R^2$

An R-squared value indicates how well the observed data, fits an expected trend. It is a measure of explanatory power. Even when R-squared is low, low P values still indicate a real relationship between the significant predictors and the response variable. In our model, we have variables which are statistically significant individually, which means we can infer a relationship between each variable and the dependent variable, despite getting a low R squared value.

The inference of an R square value depends on what you are trying to predict, what your predictors are, and how reasonable it is that you can predict that. Some fields of study have an inherently greater amount of unexplainable variation. In these areas, the R squared values are bound to be lower. Models where there are psychological, behavioural or social factors involved, it is difficult to explain all the variance primarily because these factors are hard to predict and highly subjective in nature, and also because there may be a large number of other factors at play.

Having a low R-squared value when the independent variables are statistically significant, can still lead to important conclusions.

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### **An interview with Rathin Roy, Director of National Institute of Public Finance and Policy**

**Rathin Roy** has been the director of NIPFP since May 2013 and has been the Director of Asia Pacific Regional Centre, UNDP, Bangkok, and the Director of International Policy Centre for Inclusive Growth (IPC-IG), UNDP, Brazil. He served as the Economic Advisor to the Thirteenth Finance Commission and has worked over 80 countries during and prior to his tenure with the UNDP. He holds a PhD in Economics and an MPhil from the University of Cambridge, UK. Post-PhD, he was tenured in the Economics Faculty at the School of Oriental and African Studies (SOAS), University of London, and an Economist with the Institute for Development Policy and Management, University of Manchester.

**Interviewer:** We have seen that the concept of UBI originated as a response to the massive job loss due to automation and the rise of artificial intelligence. Now countries like India are trying to use universal basic income, though not entirely universal in nature, as an instrument for poverty alleviation. According to you, which of the two objectives lie at the very heart of UBI?

**Rathin Roy:** There is no point in mixing up universal basic income with quasi-UBI. The word basic signifies that this is what society expects everyone at the very minimum to earn and if they don't earn it they are given money. The simplest way to think about UBI is to think of a society where everyone has a pan card. Some people above a certain income pay tax, some below that income don't pay tax and some even below that don't pay tax and, instead receive money through a negative income tax. The objective of UBI is neither of the things you said. It is fundamentally to fulfill the 2<sup>nd</sup> theorem of Welfare Economics: once a society achieves a *pareto* efficient distribution on the production possibility curve then one should be able to, through a system of lump sum transfers move the society to any other desired point on the production possibility curve or PPC without compromising efficiency. It therefore follows, that UBI should be contemplated for an economy at or near the PPC. In developing countries, for UBI there are two possibilities. One is that you believe that the economy is already at or near the PPC and that your economy at current levels of per capita income will achieve steady state. I don't believe this.

The other is what I've described in previous writing as compensatory policy which is where targeted interventions come in. It is similar to when you check into a hotel and the hotel promises you hot water and a clean room. However, if you don't get hot water the hotel pays you compensation for the inconvenience caused. When you say that you will give someone money for being in poverty it means that you are compensating them after 70 years of independence of which 20 years saw roughly steady growth for the fact that they are still in poverty. It carries the message that the only solution that exists is to compensate the people in poverty and that their problem cannot be solved and is an acknowledgment of failure. Thus, the so-called targeted income transfers are not to be confused with UBI when all that the UBI is, is compensation

**Interviewer:** There has been a lot of discussion about the NYAY scheme that the Congress is proposing during this year's election season. The proponents of this scheme have been talking about how the cost of implementing the scheme are not as gigantic as they appear to be on face value. They have claimed that the scheme will be launched in phases and even though pilots may incur a lot of cost, with subsequent phases of the scheme it will become self-financing in nature through the multiplier effects as the increase in the income of the poor will result in higher spending as one person's spending is another person's income. Do you agree with this logic?

**Rathin Roy:** I won't go so far as to call this a logic. Simple economics requires you to look at the demand side and the supply side. There are two issues here. This money won't come from thin air and be given to the poor. There are three ways to finance this. One is to increase taxes but I want to know from where you will increase these taxes and what taxes you will increase. The second way is to borrow. But when you borrow more domestically, you adversely impact the income distribution because when the government borrows it borrows from banks and financial institutions. These in turn borrow from the savers and who are the savers? They are the rich. Borrowing is bad for the income distribution because when you borrow from the rich to transfer to the poor you make the rich richer as you pay interest to them for the privilege of developing their own nation and that is my fundamental problem with financing through borrowing for it is only a loan from the rich to the poor, unlike taxes. If you say you will finance it through an expenditure cut I want to know what expenditure cut will you undertake to analyse the multiplier effects. This is very different from the Keynesian balanced budget multiplier where you print money and you use that money to stimulate demand and on the supply side you often find excess supply but no demand. Is it a fair assumption that there is excess supply in India? That depends on what the poor will consume today.

For example, a poor person is given some money. It is a reasonable assumption that he or she will buy food with that money. Say he or she wants to buy onions. There is a certain supply of onions. If that supply doesn't rise, then the price of onions will go up as more of the poor buy onions. For higher income groups the elasticity of demand for onions is zero but for the poor person it is not. Unless, you can tell me the immediate supply response to the money given to the poor and the multiplier impact I cannot determine the gains.

Let's look at clothing. 95% of the shirt I am wearing is made in India but it is an expensive Marks and Spencer's shirt. But if you go to *Sarajini Nagar* to buy a shirt, 82% of those shirts are imported from Bangladesh or Vietnam. So, when a poor person buys a shirt who will get the multiplier benefit? Hence, these blanket statements are very fashionable. But the incidence of the impact need to be taken seriously.

I question NYAY on three counts. First, I quarrel with the idea that the Indian state has decided that it is unable to provide better education and other facilities that the poor need and is moving from a development state to a compensatory state. NYAY is nothing but compensation for the failure to lift people out of poverty. Second, even if it is being justified on the grounds of the multiplier benefits it might create, I need to know how this is being financed because if these benefits are financed through taxation there will be negatives, if financed through borrowing there will be negative distributive consequences and if through expenditure cuts I need to know what the cuts will be. If the scheme will be financed by cutting expenditure on statues, then I have no problem but if it will be financed by cutting expenditure on providing milk to children I have a problem. I am not clear about what the expenditure cut will be and I question whether the government will undertake the desired cuts.

Second, I need to see the supply-demand response. The supply response should be domestic thereby having a positive impact on our GDP. In the case of clothing there is no such reason for that to happen.

**Interviewer:** Following up to that, people have also stated that they will not be increasing taxes for the middle class but they will be doing away with non-core subsidies. In your opinion, do you think India has any subsidy that can be done away with apart from say LPG subsidy?

**Rathin Roy:** You can actually do away with every subsidy. You can do away with the subsidy given to senior citizens, ex-armed force personnel, children to go to school, women etc. There are many subsidies you can cut but whether they are core or non-core depends on how you see them. The point I am making is that subsidies are given for purposes other than poverty alleviation. When you say, you want to cut some subsidy you send the message that you prioritize poverty transfers rather than the subsidy. It is only a matter of telling the interest group about the cut and that their needs are not a priority anymore. There is a subsidy for higher education in AIMS. The point of that subsidy is not to reduce poverty but to make medical education affordable to those who cannot pursue it as a career, now if you cut that to transfer money to the poor will it necessarily help the poor? What exactly these subsidies are that benefit the very rich? The biggest one was fuel subsidy that has been cut in very large measure. Another has been subsidy to art and culture through the financing of museums. The rich are the ones who mostly consume art. So, do we cut that subsidy? I can always find the money but when cutting the government states that no longer is that area a national priority.

**Interviewer:** In line with the conversation related to trade-offs, we have seen that BJP's national security manifesto promises a free hand to security forces to curb terrorism and extremism and in fact they promise that they will speed up the buying up defence equipment. At the same time, Modi has promised to alleviate poverty to a single digit within the next five years if he comes to power. Do you think these promises are aligned?

**Rathin Roy:** Yes, there is no contradiction. What happens in defence is that we allocate money to buy something but we do not buy it. The defence budget is consistently and systematically on the capital side underspent and thus if you spend it, it is not a problem because that money was not otherwise available for poverty reduction. That's at the level of operations. At the level of policy, you are saying that we will not finance poverty reduction by cutting defence. You may finance it through other ways. Thus, the statements are consistent.

**Interviewer:** Green bonds in India have grown from a virtual non-existence to a \$7 billion market. Do you think they can actually be the backbone to India's transformation towards a green and renewable economy?

**Rathin Roy:** I think it is essential to understand that green bonds can be a very important instrument in financing our sustainable transformation for the following reasons. The policy and institutional risk that is associated with Indian long term investment is rated illegitimately high by foreign investors, typically we add on a 100 to 200 basis points, to some level this is because of weak governance. Since most of our investments going forward are going to be green and people are willing to lower policy institutional risk if you invest in green, I think green bonds can help us fight against this very unequal condition that is imposed on India. I am very hopeful that green bonds will be a major way in which we will be able to get a better deal from global financial markets than we have been getting so far only because the investors in global financial markets put a premium on green and we should exploit that.

**Interviewer:** Today, many countries are following the green route rigorously and there have been varied innovative attempts to establish green foundations globally such as the cap and trade emissions market. Do you think such models could work in the Indian context and be successful?

**Rathin Roy:** The decision to go green in this country is not a decision we need to take because India is the first country in the history of the world to be asked to complete its development transformation without recourse to fossil fuels. In the case of China or Australia or Japan, they first went brown, they completed their development and then they replaced brown with green. We have to complete our development with green. Therefore, the impetus must be to understand that green is efficient, productive and a better business case than non-green. For example, a house that conforms to green standards is cheaper to build and of a superior quality in terms of services it provides. A house that is more long lasting and provides better sanitation is built much more cheaply by using green materials and building codes.

Likewise, let us look at the coal ecosystem. It is embarrassing how India mines its coal; we have open cast mines, people digging in with their bare hands, coal dust everywhere and coal transported in dirty railway wagons. If we cleaned up that entire ecosystem, efficiency in coal

production and utilisation in power plants would go up. Thus, the dividend lies in efficiency. Therefore, policy decisions to go green must highlight how much efficiency do we get out of them. Once we do that our internal rate of return, IRR will rise and will help financing that too. We are in a unique position here. When you transfer from brown to green then you need interventions like the ones you mentioned but when you don't even have power and the decision is should we produce it through green methods, the question I always ask is how much will efficiency go up by? Green is productive. India is a low productivity country and going green will improve Indian productivity and be positive for the nation. In that sense, we are in a very fortunate situation compared to nations that have already completed their development transformation.

**Interviewer:** In the run, up to elections the Modi government has promised that it won't let the fiscal deficit breach its target and the Economic Affairs Secretary SC Garg stated that the government will restrict the fiscal deficit to 3.4% of GDP. However, the revised estimated of the fiscal deficit state that it is 4.5% of GDP. What is your take given that revenue receipts have fallen massively?

**Rathin Roy:** I do not believe that in either of these two years the government could not have moved towards those targets if it would have exercised political will. Incremental schemes like farm loan waivers can be financed by increasing taxes or cutting expenditure elsewhere. There is no reason to compromise the fiscal deficit target because if you do, you are effectively borrowing for these incremental expenditures. What worries me is the administrative and executive capability in the Ministry of Finance because when the Finance Minister makes a statement in the Budget on the floor of the House and is forced to break his or her word, next year it reduces the credibility of the Finance Ministry and of India. For people who are so focused on maintaining Indian nationalism, pride and credibility I find it surprising that they are ready to sacrifice credibility at the altar of convenience every year.

**Interview conducted by Dhvani Kachru and Shipra Karan and transcribed by Dhvani Kachru**

**Date of interview: 9<sup>th</sup> April 2019**

**Redefining Contours****Winning****Entry****WHY PLAY FAIR, WHEN NO ONE CARES?**

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“*Yehtohchauhakai*(this is a boundary),” said Rishabh Pant from behind the stumps during Match 10 of the ongoing Indian Premier League (IPL). An edited clip, which showed the very next ball going for a four went viral on social media, causing many to suspect that he was involved in spot-fixing. Corruption and crime in sports, especially in the IPL, aren’t anything new; researchers discovered that ancient Greek wrestling matches were fixed as well, with athletes accepting bribes to lose. So, what motivates athletes to cheat? While it might be easy to say that those who earn little in comparison to their counterparts are most tempted to cheat, this hardly seems to be the case. An athlete with a corrupt mind will always find ways to earn money, irrespective of how affluent he/she is.

Let us assume that you are one of the athletes participating in a race. You are confident that the other players are using performance enhancing drugs to win. In such a scenario, your best response would be to dope as well. Not doing so would put you at an obvious disadvantage. Thus, players cheat when they believe that their competitors are cheating as well. In game theory, this classic game is called ‘The Prisoner’s Dilemma’.

Thus, an obvious question arises – why isn’t the fear of getting caught a deterrent for such players? Even though many players have been caught and exposed for their acts of doping and match-fixing in the past, why do we see new ‘scandals’ surface every now and then? This is because the players know that the chances of getting caught by the administrators are very slim, for the administrators themselves don’t have any incentives to punish the perpetrators. When a player is caught and exposed, the integrity of the sport or the tournament in question also comes under scrutiny. This makes it difficult for the administrators to sell the sport to potential sponsors and the customers who buy the tickets for the games. After all, it is this money earned that funds the hefty compensations of the players and the administrators. Hence, to cheat and to let others cheat is in everyone’s best interest.

Another reason for players to cheat – especially spot-fix – is that it makes the games more exciting for the spectators. Nail-biting finishes give more of an adrenaline rush than one-sided games to the viewers, and attract more media attention and coverage. This results in a win-win situation for all the stakeholders of the game: it is an easy way to earn more money for the players and it is a form of entertainment for the audience.

Coming back to the current season of the IPL, the Board of Control for Cricket in India (BCCI) has come out in support of Pant, saying that his comment was interpreted incorrectly out of context by many.



## FinTech Revolution in India

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Most of us would agree that commuting has become much easier with the advent of Ola and Uber. Flashing placards displaying Swiggy or FoodPanda outside restaurants have become a common sight. The words '*Paytm Karo*' have been engrained in the consumer's mind and the Netflix revolution has completely transformed India's consumption of digital entertainment. Digitisation has touched our lives subtly in so many ways and this trend is here to stay. The most important development is the emergence of fintech firms. They hold the potential to bring about a paradigm shift in the way financial services are delivered.

Despite rising interest rates, the possibility of a global slowdown, rising uncertainty owing to the US - China trade war and exchange rate volatility, the World Bank has pegged India's growth projection at 7.3% for 2018-19 and 7.5% in 2019-20 (Mishra, 2019). An upswing in consumption will propel India's growth. According to the report, 'Future of Consumption in Fast-Growth Consumer Markets: India' by the World Economic Forum and Bain & Company, India's consumption will increase four times by 2030 and it will still remain one of the youngest nations with over 1 billion active internet users. (Ojha & Ingilizian, 2019). The Indian populace has been very receptive to the trend of digitization as evident by the smartphone explosion, increasing digital payments, expanding e-commerce market, rising consumption of digital entertainment and use of food delivery apps. This will influence consumers' buying behavior as internet becomes their biggest source of pre-purchase research.

This presents an ideal scenario for the growth of fintech firms in India. There are over 900 fintech firms in India. Digital lending which includes capital financing, peer to peer lending and SME lending constitutes 31% of the fintech industry followed by digital payments at 25% (NASSCOM & Zinnov, 2018). Many global firms like Google Pay, Amazon Pay have also entered the Indian fintech landscape. There are many reasons for the growth of fintech in India. Despite banks being omnipresent in urban areas, they are unable to meet the demands of the younger generation which does not want to wait in queues at a bank and wants quick procedures on a fully automated digital platform. This has provided e-commerce firms the space to innovate and provide efficient financial services at lower costs.

Greater financial inclusion is one of the core objectives of India's growth agenda and the inability to create functional banking infrastructure has been recognized as one of the impediments preventing rural – urban and regional convergence and the spread of financial services. Thus, the focus has shifted to digital modes for greater connectedness and to bridge this information divide. To support this, the government rolled out its flagship Jan Dhan Yojana scheme. The National Payments Corporation of India (NPCI) was set up jointly by the RBI and the Indian Banks' Association in 2007 to revolutionize the settlement systems and retail

payments in India. This has resulted in the evolution of national payments interface and technology platforms. This includes the Unified Payments Interface (UPI) which is an instant money transfer system, Bharat Interface for Money (BHIM) app which allows the transfer of funds between accounts of different banks with a single mobile wallet, Aadhar Enabled Payment System (AEPS) which makes payments using Aadhar number authenticated by the biometric scan (Shah & Et., 2017).

The number of fintech startups in India has exponentially increased driven mainly by venture capital funds and private equity investors. This coupled with the growing telecom industry, plummeting data costs and greater use of mobile internet services has allowed fintech firms to gain ground and have higher outreach. This has disrupted the traditional financial services market and most strongly impacted micro, small and medium enterprises lending.

MSMEs generate more employment compared to any other sector except agriculture and hold the key to making India a big manufacturing hub. But their contribution to the GDP remains below potential. Despite their heterogenous character, they face the common challenge of lack of access to institutional credit. Based on research conducted by BCG and Omidyar network, report Credit Disrupted, 2018, MSME digital lending has the potential to grow 10-15 times larger by 2023. MSMEs are rapidly formalizing i.e. they are becoming government-licensed or government-registered businesses and digitizing (Omidyar Network & BCG, 2018). The Goods and Services Tax has propelled MSMEs to digitise. MSMEs have started using digital platforms to search for business information, use emails and WhatsApp for communication, make and receive payments and to sell their products. GST has allowed MSMEs to create a database of transactions, bank account statements and tax returns which has increased their creditworthiness. After the roll out of GST, the credit uptake of MSMEs has increased.

The majority of Indian MSMEs are Nano (annual revenue upto INR 10 Lakh) and Mini (annual revenue between INR 10 Lakh and INR 1 Crore). MSMEs are generally viewed as suboptimal borrowers by the traditional banking system due to incomplete financial statements, lack of any meaningful collateral and high cost of lending. MSMEs find the long and tedious procedures, bureaucratic and opaque system, lethargic and unhelpful attitude of bank employees, short loan tenure and complicated rules as the major factors discouraging them from availing formal credit. As a result, they largely rely on informal sources such as borrowing from friends, relatives, moneylenders etc.

One of the most obvious advantages of digital lending platforms is loan approval speed. Digital loans have significantly shorter turnaround times than traditional loans—especially for small-ticket loans, which are most common among new-to-credit MSMEs (i.e., first-time borrowers). The 3-1-0 model which implies three minutes to decide, one minute to transfer the money and zero human touch is increasingly being advertised. As bank account statements become more granular, digital lending firms are able to generate greater insights into borrowing behaviour and

use surrogate data such as telco and utility payments. Digital lending firms have leaner staff, efficient business models enabling them to enhance operational cost efficiency. Digital lending start-ups are using advanced tech like data analytics, artificial intelligence and blockchain to determine creditworthiness of potential borrowers. Right now e-commerce digital aggregators are collaborating with banks and NBFCs to extend their services but they have the ability to become standalone players.

With the addition of 1200+ startups and 8 unicorns that is a privately held startup that has crossed \$1 billion valuation in 2018, India's startup ecosystem is becoming more sophisticated and expanding to tier II and tier III cities. The growth of incubators and accelerators like Microsoft accelerator and IIM Calcutta Innovation Park to provide mentorship to nascent startups, growing network of seed and angel investors, government initiatives like tax rebates and Fund of Funds for Startups programme, growing IT infrastructure and presence of good engineering and management colleges is giving startups the much-needed impetus. To prevent India's demographic dividend from turning into a demographic curse, it is necessary to create a technologically abled workforce which holds a competitive advantage in global labour markets. India's information technology abilities already hold significant power in the world attracting foreign investment. Digitisation and formalisation hold the key to catapult India into the future.

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**Is Homophobia Costly?**

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September 6, 2018. A day meant to be as ordinary as any other, now boasts of a remarkable and instrumental judgement in its name. Not only did it witness the decriminalization of Section 377 of the Indian Penal Code, an archaic law enacted over 150 years ago that treated same-sex consensual intercourse as “against the order of nature” and thus deemed it as a legal offense, but more importantly, it reassured the country of hosting the privileges of equality and choice. Did this imply that India underwent an overnight transformation from a homophobic nation to otherwise? Or, the social acceptance of the LGBTQ+ community was no longer a struggle? Or, maybe survival for the homosexuals was getting easier in the country? It is extremely unfortunate and inhuman to note that the answer to all the above questions remains a hard-hitting NO despite about eight months into the decision. This alienation of an entire community is paradoxical to the healthy diversity we proudly claim. Ironically, homophobia seems to be tagging along large, painful and inevitable economic costs with itself which, funnily enough, the country and its seemingly “advanced” citizens seem to be completely unaware of. So, how exactly is Homophobia costing India?

The Supreme Court accepted the estimates of up to 8% of the total Indian population or about 104 million people probably being LGBT, one of the largest populations of its kind further claiming that about 2.5 million of them are gay. Now, a majority of these are victims of multiple forms of social and other forms of discrimination in form of workplace harassment, unavailability of appropriate health care facilities or work protection policies and lack of equal job opportunities, amongst many others. All of the aforementioned when combined with some other additional factors, hinders about 92% of the trans people to contribute to any economic activity, as claimed by the Human Rights Commission. This social unacceptance is so deep rooted and pervasive that it fuels unfathomable amounts of brain drain and loss in the Indian workforce which would have increased the productivity of the country by manifolds. The country and its corporates are demanded to be more progressive and inclusive than they currently are. Undoubtedly, a handful of companies have taken into consideration the importance of certain rudimentary changes in their office environment like the introduction of ‘other’ as a gender option in policy documents, replacing the word spouse by ‘partner’, having gender-neutral washrooms or expanding the medical benefits and insurance of the employees belonging to the LGBTQ community. These policy and infrastructural modifications are a testimony to the company’s commitment to warmly host employees regardless of their sexual preferences. The stark truth is that a majority of organizations still deem the above changes unworthy, pushing the uncomfortable and dissatisfied workers to quit. A striking example can be the 2017 episode of the employment of 23 transgender people in the Kochi Metro Rail Ltd. by the government of Kerala, 8 of whom quit in the very first week of their job due to a menial pay and less than sustaining work environment.

This just proves an obvious hypothesis that for a member of the LGBTQ community, a respectable job, with job security, a decent pays and favorable work environment is just too much to ask.

As claimed by The Wire, about 58% of transgender students dropout of school before class 10. This naturally limits their skill building capacity in the higher earning ends. Besides this too, a large chunk of the LGBTQ community relies on begging as their main source of income. This too has been complicated by the Indian Government by passing the Transgender Persons (Protection of Rights) Bill 2016 which criminalizes any form of begging by the community thus giving the latter a hard time earning a living to applaud its “aesthetical” and veiled image of (d)efficiency.

A polar opposite scenario is that of PinkWashing which means nothing more than using the the LGBTQ community as a source of evergreen profitability for the corporate sector by showcasing their “support” to the community by launching rainbow products and simply reducing people to commodities. Activists claim this to be utterly selfish and unnecessary as the formers’ struggle are anything but a money minting machine for the corporates.

Amidst the constant battle being fought to enjoy nothing more than equality and acceptance from the society, the World Bank has claimed that homophobia is costing India an exorbitant \$32 billion. The loss of opportunity for the community to grow and flourish is being lost at the expense of archaic mindsets and beliefs. Lack of the provision of human dignity for LGBTQ community is a boulder of shame that makes social and humanitarian progression a far-fetched goal for India. It is certain that the situation has improved, but the fear instilled in millions that restrain them from coming out, speaks volumes about the “Naya Bharat”.

## Book Reviews

### **The Great Economists: How Their Ideas Can Help Us Today. Linda Yueh. 2018.**

Reviewed by:

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Despite distinct female disadvantage in economics due to rampant discrimination and outright harassment, including sexual, as is now well recognized by even the American Economic Association (JEP, 2019), it is heartening to see the rise, and the meteoric rise, of an Emi Nakamura as a database macroeconomist or an Esther Duflo as a development economist or a Neva Goodwin as a contextual and ecological economist. The good news is that now female students are performing the best in econometrics, the most difficult educational programme in the economics domain (Arnold, 2018), Undergrad econ girl students in India can check out on some stellar Indian names in economics such as Gita Sen, Seema Jayachandran, Gita Gopinath, Sonalde Desai, Rukmini Banerji and the like, for inspiration. To such a list, I add Linda Yueh—the author of the book under review—who has indeed arrived, so to say, as a popular economic broadcaster and writer, apart from being an expert on China and macroeconomics textbook writer.

Initially, when I just read the Introduction and Epilogue, I did not feel like being drawn to the book. But as I read through the in-between 12 chapters, it was indeed like having a blast, and at times like having a nightmare as well.

The best part is getting to read about the life and times of the 12 great general economists that Linda has chosen—Adam Smith, David Ricardo, Alfred Marshall, Irving Fisher, John Maynard Keynes, Joseph Schumpeter, Friedrich Hayek, Joan Robinson, Milton Friedman, Douglass North, and Robert Solow. These economists have set the foundations of economics and have crafted the models to explain how the economy works. That is why she banks on the suitability of their insights for contemporary times.

The second best thing about the book is getting to know how relevant these economists and their theories are to the key economic challenges of our time, especially in terms of the backlash against the uneven gains from globalization or the distributional consequences of globalization. In other words, Linda is addressing the future speed and quality of economic growth from the viewpoint of these economists by posing the contextualized questions as follows. That all the major economies are growing slowly today is captured by ‘secular stagnation’ with marked slowdown in productivity growth since the mid-2000s. So, what would Robert Solow, whose pioneering work has helped us to understand what generates economic growth, make of the prospect of low productivity and a slow growth future for major economies? The work of



Douglass North informs us of institutional impediments to growth. So, how can we understand, following him, why some nations are rich and others are poor, and, most importantly, why some nations fail and others ultimately prosper? Do the global financial crisis and the Occupy Movement suggest that capitalism's time is up? How relevant is the Hayek legacy based on the belief that the prosperity of society is driven by only free markets? Innovation is the engine of growth, according to Joseph Schumpeter. What would he make of the challenge of innovating in a predominantly service, and increasingly digital, economy as found in the post-industrial economies, and also in China? Post-industrial nations like Britain and the US are now attempting to roll back the deindustrialization process due to globalization by encouraging manufacturing and reducing the share of national output accounted for by services. What would Adam Smith make of these efforts? Should government rebalance the economy towards making things once again? Is it possible to rebalance the economy in countries where the services sector makes up more than three-quarters of national output, as it does in Britain and the US? Deindustrialization in these two countries for the past half century has been associated with trade deficits along with a loss of well-paid manual jobs and stagnant wages. As such, how should we set trade policy? What would David Ricardo, the father of free trade, advise governments to do in the face of these trends and a large and persistent trade deficit? The decline and fall of manufacturing in Britain and the US has been the miraculous rise of Chinese manufacturing and economic growth on that basis. But after reaching the "middle income status" in the early 2000s, China too has found the imperative to rebalance its economy through domestic demand boost in order to grow in a more sustainable manner. China's transformation into a large market based economy, still ruled politically by a communist party, would not have been foreseen by Marx, for whom communism and capitalism are an incompatible marriage. If China overcomes its challenges of future growth and becomes rich under capitalism, will Marx reconsider the role that his principles played in guiding communist China, because in Marx's theory, after capitalism takes hold, there is always scope for a worker rebellion and revolution in the future? What will happen to the thinking of his followers? Growing inequality that reflects the poor quality of growth, has been a common problem in the world. And it could be a reason for the slow recovery after the Great Recession of 2009 that followed the global financial crisis, the underlying reason being that highly unequal societies recover more slowly since growth mostly benefits the rich, who save more than they spend and spending, not saving, fuels an economic recovery. Why has inequality risen over the past century and how would Marshall view the worsening of income inequality under capitalism? Wages are not growing well despite productivity growth outpacing wage growth in a number of advanced economies in recent decades. What would Joan Robinson make of the low-paying challenge? This is not all. Since 2008, advanced countries have struggled to recapture pre-crisis growth trends and inflation rates have slumped around the world, bringing many countries to the brink of deflation. The large build-up in public and private sector debt suggests that the global economic situation is ripe for the debt-deflation that Fisher described as the cause of the Great Depression. So, are we at risk of repeating the experience of the 1930s? And what might Irving Fisher suggest we should do about



it? This is a damn complex question. Again, in the post-crisis economy, interest rates are very low but not enough firms are borrowing to invest, which has contributed to the slow growth environment. When monetary policy is thus impotent to boost the economy, fiscal policy a la Keynes is needed to increase investment and generate more growth. But should the British and European governments have cut public spending and adopted austere policies in the aftermath of the 2008 financial meltdown? Are the new monetary policy tools of the central banks in this context (e.g. cash injections or quantitative easing) of any help in bringing about economic recovery and growth? What would be Milton Friedman's take on this?

The discussion on the above questions is at times complicated and difficult to understand and very controversial too, and may go above the heads of the reader. The book is in this respect more suitable for reading by third year undergraduate and postgraduate econ students whose understanding of the issues raised in the book depends on more lucid descriptions and analyses of the same in the classrooms.

Now I come to the downsides of the book. Linda has chosen the great economists who are mostly advocates of liberalization, globalization and privatization. She is herself in tune with them although she is disturbed by the emergence of the many losers due to globalization. The only way she can resolve this ambivalence or contradiction is by exploring how broad-based economic development at home and abroad can emerge as Palley (2002) has done so well, by rejecting export-led growth and the associated race to the bottom, and choosing domestic demand-led growth resting on the four pillars of improved income distribution, good governance, financial stability and space for counter-cyclical stabilization policy and adequate, fairly priced supply of development finance to be brought about by policies in favour of labour and democratic rights, appropriate reform and regulation of the financial architecture and a combination of debt relief, increased foreign aid and increased development finance provided through expanded SDRs. Most fundamentally, the problem with Linda and every mainstream economist for that matter is the undying obsession with growth despite the fact that the growth related affairs in the world are no way really working towards the achievement of the Sustainable Development Goals adopted in 2015: ending poverty by 2030, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate change, life below water and life on land, peace, justice and strong institutions and partnerships for all the goals, all of which she mentions in a footnote on page 246. If human welfare is what we are after, growth is certainly not the most efficient way to get there. Distribution is what matters. We can improve people's lives right now, without any additional growth at all, simply by distributing existing income more fairly. People do not want growth. That people want growth is an assumption. Decades of research in anthropology and psychology has been telling us that to most people what matters is having good health, intimate relationships, meaningful work, access to nature, time to spend doing what they love, and—increasingly—an ecology that is stable and safe for themselves and their children. The arguments from ecological economists and climate scientists for desperate degrowth and

abundance of human welfare based on it are the real concerns that matter to us, not the concerns of political and economic elites wedded to the obsolete, religious dogmas of the last century. The dominant economic paradigm aiming to grow economic output many times over coming years and decades is nothing but “the ideology of the cancer cell” to kill life on planet earth (see Hickel, 2019; RWER, 2019). Actually, we should be saying goodbye to the economists who pontificate on export-led or domestic demand-led growth. The conclusion of this book review is that of Joan Robinson that Linda herself quotes thus: “The purpose of studying economics is not to acquire a set of ready-made answers to economic questions, but to learn how to avoid being deceived by economists.”

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### **Small Is Beautiful: A Study of Economics by E.F. Schumacher**

Reviewed by: Avantika Bunga

‘As If People Mattered’ is a collection of essays by German born British economist E. F. Schumacher. Ernst Friedrich Schumacher was a German statistician and economist, best known for his proposals for human-scale, decentralized and appropriate technologies. Published in 1973, *Small Is Beautiful* consists of his review and criticism of the classical ideas of economics. His main idea involves creation of sustainable equilibria, which involve human development and healthy growth patterns. *Small Is Beautiful* puts forward the revolutionary yet viable case for building our economies around the needs of communities, not corporations.

Schumacher argues that the modern economy is unsustainable and asserts that nature's resistance to pollution is limited. This has become an everyday thing in our lives- with scientists giving repeated warnings about global warming and pollution day by day. Cities are choking under the waste. Schumacher warns not to treat natural resources as ‘expendable resources’, as they are prone to depletion, and have to be conserved. He believed that city's population should not rise above 500,000, but we are now living in an era of *megalopolises*, with cities hosting millions of people. Schumacher claimed that this would lead to the mutual poisoning of both urban and rural areas alike. This is easily visible. Mass migration has resulted from mass unemployment in the hinterland, which is choking the ‘leading, modern’ cities, whonow have to face problems of slums and job creation.

So, what has become of small now? It has been mostly reduced to a promotional stunt, hiding the real winner: gigantism. So many small firms now are under large corporations, but ‘small’ is still used to lend a homely character to the enterprise. Huge multinational companies are coming up, aided by governments. But at the end of the day, humans will always prefer economic systems that can be controlled, that provide space for human interaction; for leisure and fruitful work. This is why in spite of the great seepage of the ideas of capitalism in the current scenario, small is beautiful is an idea that is still experimented with– some examples being cottage industries, MSMEs, self-help groups and local cafes.

One of the recurrent themes in his work is on the issue of technology. To quote-

*“Humans need a different kind of technology, a technology with a human face, which, instead of making human hands and brains redundant, helps them to become far more productive than they ever have been before.” (Schumacher 1973)*

Here Schumacher brings about an interesting idea of intermediate technology. Technology needs to help better a man, not become its master. One cannot deploy latest technology into inexperienced hands immediately - that would only lead to more problems. Developing countries needs to start with simpler models, so that people can learn and adjust to the mechanisms and move forward. However, we would have to ensure that people do not go into arms about getting ‘obsolete technology’ first and completely shun it, which is a probable outcome. His other possible solutions to improve welfare involve a collaboration of efforts between administrators,

businessmen, and communicators for creation and implementation of self-reliance programmes. Another was sharing of firms by both private and public parties, which he believed would lead to removal of profit taxes, and creation of public equity, so as to lessen the antagonism between the government and the private sector.

All these solutions seem excellent, but all can be undermined by a very prominent force, corruption. However, there are people and organisations who still try to make positive changes in the world. There are still firms who have managed to balance control of power and freedom, like Scott-Bader, and the Intermediate Technology Development Group (now Practical Action) for instance.

Despite our increased wealth since the 70s, we are no happier. Mental illness is on the rise, with people committing suicides daily, or sinking into substance abuse. Modern organizations stripped the satisfaction out of work, making the worker no more than an anonymous cog in a huge machine. Craft skill is no longer important, relationships and ethics a burden. The prevailing system is truly dehumanizing. This was what Schumacher feared, and his answer was 'small is beautiful'. He wanted to go back to the human scale: human needs and human relationships, and care for the environment. All he wanted was people-centered economics because he believed that that would enable environmental and human sustainability. Even after more than 40 years of his work, we are still battling a lot of issues discussed by Schumacher, and with the passage of time, it is only going to become more difficult. It is imperative that legal reins be tightened, and fruitful public policy be laid out for greater welfare of people. The book remains a treasure trove of idealistic, romantic economic thought.

