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All India Institute of Local Self-Government

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- Devolution Regime and Panchayats in Odisha; An Overview
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About All India Institute of Local Self-Government (AIILSG)

All India Institute of Local Self-Government (AIILSG), established in 1926 has been actively working in the field of urban development management and is a diligent partner in promoting the cause of local governance in India and overseas.

The Institute has been the steadfast friend, philosopher and guide to Urban Local Bodies (ULBs) across the Country. For more than eight decades it has contributed to the principles and practice of urban governance, education, research and capacity building. It has designed and developed a vast array of training literature and courses and trained more than 1.5 million stakeholders in diverse areas of urban governance and urban services delivery.

These activities of the AIILSG are practiced through 30 regional centres located in different regions of the Country. The Institute anchors the Regional Centre for Urban and Environmental Studies (RCUES) of the Ministry of Urban Development, Government of India for Western India region. This Centre is actively involved in building capabilities of municipal officials, staff and elected members from the States of Goa, Gujarat, Maharashtra, Rajasthan and the Union Territories of Diu, Daman, and Dadra & Nagar Haveli by upgrading their knowledge and skills required for effective administration and implementation of various urban development programmes.

With a view to cater to the growing requirement of ULBs in regard to services, the AIILSG runs specialized capacity building institutions such as the National Fire Academy, the Nrupur Institute of Nursing Science and Research and the Centre for Environment & Disaster Management at Vadodara, PRUDA at Ahmedabad, National Resource Centre for Urban Poverty, International Centre of EQUI-T, the Disaster Management Cell and the Centre of GIS at Pune. It runs the Solid Waste Management Cell of the Government of Maharashtra. In recent years, AIILSG has ventured into rural and tribal capacity building and hand holding of rural institutions of self-governance.

In addition to the domestic activities, the Institute organises several tailor-made capacity building programmes for various countries in South Asia, viz, Bangladesh, Nepal, Sri Lanka and in other regions, including South Africa, Ethiopia, Indonesia, Malaysia, China, etc. The Institute has linkages with renowned international organizations including UNCHS (Habitat), UNDP, UNICEF, UNFPA, WHO, DFID, CITYNET, CLGF, US-AEP and the Ford Foundation. It is the anchor institution for Urban Management Programme (UMP-UNCHS-Habitat) for South Asia.

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Editorial

World Environment Day

World Environment Day is observed on June 5 under the auspices of United Nations Environment Programme since 1973. It is the biggest international day for the environment. “Only One Earth” is the year's campaign slogan with focus on “Living Sustainably in Harmony with Nature”. This year's World Environment Day is hosted by Sweden.

All over the world policies and programmes have been put in place since several years to draw wide public participation in efforts towards environment protection and conservation of our natural surroundings. In India too, initiatives such as Swachh Bharat Mission, AMRUT, Namami Gange and so on are efforts in this direction. These, while serving to underline the concern and commitment towards environment protection will mobilize citizens to reform our daily lives and build in sustainability as a key theme in all that we do. The need for such transformative action has become urgent now with environmental degradation reaching alarming levels in many parts of the world severely affecting life on both land and the oceans. Climate change and resultant natural disasters like flooding and landslides are the most evident manifestations of this. There are however, many silent, unseen events with potential for disastrous outcomes. The rise in sea levels, for example, is likely to drown several small island states completely in a few decades or less. The impact of this on their inhabitants is clearly unimaginable. Yet another is the rapid and extreme pollution of our water bodies including oceans. Authorities all over have sounded warnings that with increasing amounts of plastics entering our rivers and oceans, the micro plastics have started to enter the marine life like fishes and therefrom are entering human bodies through food; with potentially catastrophic outcomes. There are possibly more such silent killers.

Environment degradation is the price we have paid for economic development and to meet the needs of humans on this planet. It was started by clearing large tracts of forests and natural habitats in order to make space for agriculture to feed the growing population. Thereafter, such clearing of forests became necessary for building factories to meet needs of mankind for better living and providing for their livelihood options, homes for them to live in, and other infrastructure to provide services for human beings. Such 'transfer' of land resources has happened unabated over recent decades with increasing population on earth. Therefore, over the years, one narrative had gained strength; that environment degradation is the price we must pay for economic development (our well-being). This narrative had reached dangerous proportions resulting in complacency. However, there is now a bright spot. Recent evidence suggests the decoupling of environment degradation from economic development. In March 2016, the International Energy Agency (IEA) reported that there has been virtually no increase in energy related CO2 emissions in 2015 compared to the previous year. Importantly this happened for the second straight year. This is particularly heartening considering that during the two years 2014 and 2015 when emissions fell year on year, the world economy actually grew over 3% each year. This signaled possibly for the first time, the decoupling of economic growth from increased Greenhouse Gas emissions. In other words, we can indeed choose an environmentally benign path towards greater economic activity.

The answers lie in a variety of actions in different areas. Among the key ones could be switching to sustainable energy options. At the national level, India is doing admirably. We have crossed a 40 percent share of renewables in our energy mix well ahead of our commitment in the Paris Accord to do so by 2030. We now plan to reach 50 percent by 2030. Citizens at their level need to embrace renewable energy options such as rooftop solar with greater commitment; government incentives for this should spur us on. The power sector however, could face challenges. As developing countries roll out distribution networks and provide connections to millions of the deprived to pull them out of poverty, demand could skyrocket. Policy interventions must enable this increased demand to be met sustainably. Sustainable (non-motorised) mobility, water conservation, waste reduction, avoidance of single use plastic are all obvious measures to save the environment and citizens groups along with NGOs and governments are working to increase awareness and secure better outcomes.

And importantly the mindset to embrace concepts of Circular Economy which requires that we reuse, share, recycle, upcycle and keep materials in use for longer while thus reducing waste significantly. This requires actions at various levels including in the designing of products (making them easily repairable) and processes (reducing waste). Similar measures will keep emerging as humans all over work to innovate and find ways to reverse the damage we have done to the planet. Because there is no alternative to “Living Sustainably in Harmony with Nature”.

The most vulnerable to the consequences of the environmental challenges are the disadvantaged populations. They are the ones who are the worst affected. From this perspective, AIILSG recently launched at the hands of its President, Director General and the Governing Council members its innovation of 'MY Actions for SDG13- To combat climate change and its impacts with respect to disadvantaged populations'. The innovation involves rejuvenating indigenous trees for carbon neutrality. A related event in its tribal field action areas also marked one year of the launch of the carbon neutrality initiative of one of its partners. The year since last World Environment Day marked plantation of more than 30,000 trees by AIILSG not just as tree plantation drive but synergizing the environment concerns with livelihoods of the tribals in economic distress.

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Population Characteristics of High and Low Fertility Countries

M. V. Vaithilingam

Abstract

Globally, fertility decline has been witnessed across the world irrespective of the spatial and socio-economic cultural characteristics of various inhabitant areas. It is observed from World Fertility Survey and Family Planning 2020 by United Nations that women are having fewer births, but fertility rates remain high in some parts of the world, especially in sub-Saharan Africa including countries Niger, Somalia, Congo- Democratic Republic, Mali, Chad, Angola, Burundi, Nigeria, -Gambia, and Burkina Faso. The fertility decline in sub-Saharan African region countries has been relatively slow, occurring later, and large as compared to other regions and countries. This paper intended to analyze the scenario of population characteristics in relation to fertility among high fertility countries as compared to low fertility countries including South Korea, Puerto Rico, China- Hong Kong SAR, Malta, Singapore, China- Macau SAR, Ukraine, Spain, Bosnia-Herzegovina, and San Marino using the available indicators from Population Reference Bureau (PRB)'s World Population Data Sheet 2021. The results reveal that though there has been a universal decline in fertility across the countries in the world, the sub-Saharan African countries, especially Niger, Somalia, Congo-Democratic Republic, Mali, Chad, Angola, Burundi, Nigeria, Gambia, and Burkina Faso remain high ranging from 4.4 to 7.0 births per woman. But they show a gradual decline over the years though it is not so significant. The high fertility countries have shown negative signs in variables such as percentage of all births to mothers aged 15-19, birth rate, death rate, population size, physiological density, infant mortality rate, percentage of the population living in urban areas, and GNI per capita- PPP. But Ukraine, being a low fertility country, has recorded high death rate, and some health studies have revealed

high blood pressure as the main reason. As far as India's situation compared with world averages is concerned, the variables such as percentage of married women ages 15-49 using all methods of family planning, percentage of married women ages 15-49 using modern methods of family planning, crude birth rate, rate of natural increase, population per km2 of arable land, deaths of children under one year per 1,000 live births, gross national income in purchasing power parity, percentage of population living in urban areas, percentage of population ages 65+, and life expectancy at birth have attributed negative signs. The high fertility countries need to be encouraged for reducing fertility with the help of some development-oriented innovative approaches such as introducing a job-oriented academic curriculum for employment opportunities, increasing the awareness of small-family norms, and removing the gaps in the gender, social and economic aspects of humanity. There is a need to have some new effective and efficient development approaches to bring about desirable change in the population characteristics shown negatively to realize the fact that development is the best contraception for desirable demographic change leading to population stabilization and sustainable development.

Keywords: Family planning, Fertility, Population characteristics, PRB, etc.

1.0 Introduction

Human fertility is the most influential factor for population growth, and it has attracted tremendous biological, demographic, and social science researchers as compared to the scientific efforts in any other field in the universe of knowledge. Research in human fertility has received paramount importance in the study of demography and population studies in view of its interplay with other components of population and society. There has been a significant change in the levels of fertility and subsequently in the size and growth of the population over a period. Human fertility is directly relevant to public health and more generally to human welfare in many ways. In industrialized countries, fertility declined between 1950 and 2005 from about three births per woman to below the two-birth level that is required to maintain a stable population size. Concerns have arisen about population decline and a low ratio of workers to retired people. Over the same time span, fertility in Asia and Latin America dropped from 6 to 0.5 births, but in sub-Saharan Africa, it remains high at 2.5 births. Continued rapid population growth in Africa will make socio-economic progress more difficult (Cleland, 2008). But the advancement of science and technology coupled with the innovative approaches of modern thinkers enhance the desired change in

the demographic, socio-economic, health, and environmental situations across the world.

The highlights of the United Nations' World Population Prospects 2019 reveal that the total fertility has fallen markedly over recent decades in many countries, such that today close to half of all people globally live in a country or area where lifetime fertility is below 2.1 live births per woman, which is roughly the level required for populations with low mortality to have a growth rate of zero in the long run. In 2019, fertility remains above this level, on average, in sub-Saharan Africa (4.6 live births per woman), Oceania excluding Australia and New Zealand (3.4), Northern Africa and Western Asia (2.9), and Central and Southern Asia (2.4). Some countries, including several in sub-Saharan Africa and Latin America, continue to experience high levels of adolescent fertility, with potentially adverse health and social consequences for both the young women and their children. The populations of 55 countries or areas are projected to decrease by one percent or more between 2019 and 2050 because of sustained low levels of fertility, and, in some places, high rates of emigration. In most of sub-Saharan Africa, as well as in parts of Asia, Latin America, and the Caribbean, recent reductions in fertility mean that the population at working ages (25 to 64 years) is growing faster than in other age groups, providing an opportunity for accelerated economic growth known as the "demographic dividend."

This paper intends to study the population characteristics in relation to fertility of high fertility countries compared with that of low fertility countries of the world using the Population Reference Bureau's World Population Data Sheet 2021.

2.0 Literature Review

The research in human fertility is considered significantly important as it involves reproductive process and child development. Fertility is one of the two prominent biological components of population change, the second one being death or mortality. Fertility behavior refers to the childbearing patterns of women or couples, including especially the number of births, the timing of births, and associated reproductive behaviors such as union formation (including marriage and cohabitation) and contraceptive behavior (Swicegood and Bean, 2001). There are various determinants of fertility such as the incidence of abortion, the duration of postpartum insusceptibility due to breastfeeding and sexual abstinence, the prevalence of secondary sterility, and the proportion of the population that is married, in a union or sexually active. countries should continue to promote female education, combat all

forms of violence and discrimination against women, eliminate early, forced, and child marriage, and ensure that women have equal access to the labour market, social protection, and the political process (United Nations, 2020). The demographers and social scientists are engaged in an active debate on the causes of low fertility and the prospects for further change (Chesnais, 1996; 1998; Lesthaeghe 2001; Lesthaeghe and Willems 1999; McDonald 2000). The matter is of considerable importance because further declines in infertility or even a continuation of current low fertility levels will contribute to the rapid aging of populations and will lead to a decline in the size of national populations. These demographic developments in turn are likely to have significant social and economic consequences (Coale, 1986; OECD, 1998; World Bank, 1994). Over the past quarter-century, massive changes in fertility behavior have occurred in most world regions.

There has been a decline in overall global fertility. After decades of rapid demographic change, most countries of the world are now at or close to the end of their demographic transitions with fertility at or below replacement (Bongaarts, 2020). The fertility level of the developed region is constantly low. The social structure, religious beliefs, economic prosperity, and urbanization within each country are likely to affect birth rates as well as abortion rates. Developed countries tend to have a low fertility rate due to lifestyle choices associated with economic affluence where mortality rates are low, birth control is easily accessible and children often can become an economic drain caused by housing, education cost, and other costs involved in bringing them up. Higher education and professional careers often mean that women have children late in life. This can result in a demographic-economic paradox (Nargund, 2009). Fertility has started declining even in the African region due to various factors. A few recent surveys show that fertility has begun to decline in Botswana, Zimbabwe, Kenya, and Southern Nigeria. The onset of fertility decline is likely to be determined by the attainment of relatively low levels of infant and child mortality, substantial extension in female secondary education, ample supply of contraceptives, and government leadership toward controlling family size (Caldwell, et. al., 1992).

The share of the births to adolescent mothers ages 15-19 has a significant effect on the overall fertility of a population. The share of births to adolescents remains high in some countries. Childbearing among adolescent girls is associated with poorer health and educational outcomes for mothers and their

children. The share of births to adolescent mothers is relatively high in parts of Africa, Asia, and the Americas and lower in Europe and Oceania, but large variations exist within these regions as well. Many women are not having their ideal number of children (PRB, 2021). Family planning has a direct and explicit impact on fertility levels both at the community and national levels. Family planning is the ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births (Butler, et. al., 2009). Modern methods of family planning include birth control, assisted reproductive technology and family planning programmes. Contraceptives prevent unintended pregnancies, reduce the number of abortions, and lower the incidence of death and disability related to complications of pregnancy and childbirth (UNFPA). Birth rates fell 7% for females ages 15 to 17 years and 4% for females aged 18 to 19 years. Although reasons for the decline are due to more teens abstaining from sexual activity, and more teens who are sexually active using birth control than in previous years (CDC, 2021).

There are various reasons for fertility decline. A study (Malcolm, et. al., 2011) has attributed various reasons such as a high level of malnutrition, extremely low levels of education, gross gender inequalities, and an uncertain future in the face of climate change. The fertility level was low in South Korea even at the beginning of the 1960s. South Korea's birth rate declined since 1960. Until the 1980s, it was widely believed that this demographic trend would end and that the population would eventually stabilize. However, Korean society faces a decline in the future population because of the continuously decreasing birth rate. After the baby boom in the 1950s, the population increased drastically, and the Korean government implemented an antinatalist policy in the 1960s. This government programmed Korean healthcare centers to provide a family planning consultation by introducing traditional contraception methods, including intrauterine devices (IUDs), vasectomies, and condoms to the public. Along with this policy and economic growth, the fertility rate declined because more married women pursued wealth and a higher standard of living rather than raising children. After the economic crisis in 1997, the fertility rate declined rapidly (Kim, 2005). A study by Ryall (2021) attributed South Korea's low birth rates to the country's economic inequality, including the high cost of living, low wages for an OECD member country, lack of job opportunities, as well as rising housing in-affordability. In the 20th Century, selective abortion of female fetuses had an important impact on the low birth rate (Donaldson, et. al. 1982).

Births and deaths are the two major biological components making a major change in the size of the population. The population growth is governed by the balance between birth rates and death rates. If the birth rate stays the same and the death rate decreases, then population numbers will grow. If the birth rate increases and the death rate stays the same, then the population will also grow (Open University, 2016). The younger a population, the faster that population grows because the birth rate is higher, and the death rate is lower. When the birth rate is expressed per age group, it is called the standardized birth rate, as opposed to the crude birth rate of the total population (Richard and Kristin, 2006). By 2050, 39 countries and territories are projected to have fewer people than they do today, including China, Thailand, and Ukraine (PRB, 2021).

The infant mortality rate has been considered an important indicator of health. Lower (or higher) mortality might induce lower (or higher) fertility, but it is well established that higher birth rates lead to higher infant and child mortality. This higher mortality is related to the effect on infants and children of earlier weaning and reduced care from mothers (Michael, 1998). Because of serious diseases like HIV/AIDS, the health of the concerned persons is affected more. The HIV/AIDS epidemic has posed and will continue to pose tremendous challenges to the health systems of the developing countries, especially in the most severely affected countries. HIV/AIDS increases overall health expenditures for both medical care and social support at the same time that it is claiming the lives of doctors and nurses in developing countries (United Nations).

Development is measured through GNI per capita, percentage of urban population, proportions of young and old populations, life expectancy at birth, etc. The GNI per capita has an effect on development indirectly through national income. GNI per capita only reflects the average national income. It does not reveal how that income is spent, nor whether it translates to better health, education, and other human development outcomes (Michael, 1998). A higher urbanization level means a higher level of economic development in general, which is similar to what has been reported by some studies (Moomaw and Shatter, 1993; Bai, et. al., 2012; El Nour, 1989). Moreover, economic growth shows a clear accelerating trend, while the growth in urbanization level increases in each 10% band by between 0% and 70% (Chen, 2014). The share of the population aged 60 and over is projected to increase in nearly every country in the world between today and 2050. An aging population tends to lower labor-force

participation and savings rates and may slow economic growth (Gorman, 2011). Life expectancy at birth is related to development. GDP per capita increases the life expectancy at birth through increased economic growth and development in a country and thus leads to the prolongation of longevity (Miladinov, 2020).

Some studies have suggested reducing the fertility level to achieve socio-economic development and population stabilization. Comparing the average ideal number of children women report to a country's total fertility rate suggests women may not be achieving their fertility ideals. To close the gap, policymakers should invest in girls' education; improve access to voluntary family planning; and addressing the gender, cultural, and economic barriers that may impact fertility preferences and lead women to make tradeoffs between having the number of children they want and pursuing other opportunities (PRB, 2021).

As the change in the society takes place over a period of time in all aspects of human life, all the population characteristics and socio-economic conditions such as births, deaths, migration, marriage age, size of the rural and urban populations, national income, life expectancy, etc. also tend to change. Based on the efficacy of the government efforts, the changes are expected to be desirable enhancing the realization of population stabilization and sustainable development. This study intended to understand the population characteristics and their change in relation to human fertility with the help of indicators available in PRB's World Population Data Sheet 2021.

3.0 Objectives

This paper has the specific objective of understanding the fertility situation and related population characteristics and changes over a period among the world's high and low fertility countries including as compared with the averages of India and the world.

4.0 Data and Method

This study uses the secondary data collected from Population Reference Bureau's World Population Data Sheet 2021 with a special focus on global fertility. The World Population Data Sheet, produced by PRB annually since 1962, is both a reference document and an educational tool. With two dozen critical populations, health, and environment indicators carefully researched, developed, and vetted by PRB demographers and analysts for more than 200 countries and territories, it provides a snapshot of the demographic trends reshaping our world today and previews what we can

expect in the future. Fifteen variables including 4 with different periods have been used which are available in the datasheet. The data have been ranked and analysed under different heads such as human fertility and family planning, vital rates and population growth, infant mortality, and health, and GNI per capita and economic development.

5.0 Results and Discussion

5.1 Human fertility and family planning

The TFR among high and low fertility countries ranges from 7.0 births per woman in Niger to 0.8 in South Korea. Ten countries including Niger, Somalia (6.9), Chad (6.4), Congo Democratic Republic (6.2), Angola (6.0), Nigeria (6.2), Burkina Faso (5.0), and Gambia (4.4) recorded TFR above the global average (2.3), and fortunately, recorded decline to below the average (2.2) which is close the replacement level of fertility. It may be noted that all these 10 countries are of sub-Saharan Africa. The decline of TFR ranges from 1.5% in Chand to 82.2% in South Korea. The percentage change has been pronounced more among low fertility countries and less among high fertility countries (Table-1, Figure-1.1). Percentage of all births to mothers ages 15-19 ranges from 1 % in Singapore to 23% in Niger, and other three countries such as Maldives (22%), Chad (21%) and Angola (19%) are above the averages of the higher fertility countries and world (9%) (Table-1, Figure-1.2a). Whereas the percentage of all births to mothers ages 15-49 ranges from 1.0% in Singapore to 23% in Niger. Nine countries such as Mali (22%), Chad (21%), Angola (19%), Congo-Democratic Republic (16%), Nigeria and Burkina Faso (13%), Somalia and Puerto Rico (13%), and Gambia (10%) have such births more than the world average (9%) (2020). The percentages of all births to mothers ages 15-19 and 15-49 for India are less (9% and 14% respectively) (Table-1, Figure-1.2b) than the world averages (11% and 14% respectively). The change of percentages of all births to mothers ages 15-19 and 15-49 are -25% and 27.3% respectively for world and -80% and -22.2% respectively for India. It may be noted that the percentage change shows the increase in the percentage of all births to mothers ages 15-19 and decrease in the percentage of all births to mothers ages 15-49 among the high fertility countries, an opposite scenario of low fertility countries (Figure-1.2c).

5.2 Vital rates and population growth

The Crude Birth Rate (CBR) and Crude Death Rate (CDR) among higher fertility countries and low fertility countries ranges from 5 in South Korea to 49 in Somalia and 3 in

China-Macau SAR to 15 in Ukraine respectively.. It may be noted that all the higher fertility countries recorded higher CBR, above the world average (18). Ukraine recorded higher level of CDR, higher than all the low fertility countries, which may be because of COVID deaths (Table-1, Figure-2.1). The world population accounts for 7837 million in 2021. Among high and low fertility countries, the population ranges from 211.4 million in Nigeria (2021) to 0.3 million in San Marino. It may be noted that the high fertility countries have naturally higher level of population and vice-versa. It is estimated that the percent increase in the population during 2021-2050 would be more in Niger (162.9%), and the decrease would be more in Ukraine (25.8%) among the high and low fertility countries. The Indian population accounts for 1393 million in 2021 and estimated to rise to 1553.3 million in 2035 and 1638.7 million in 2050 with an addition of 11.5% during 2021-2035 and 5.5% during 2035-2050, a total of 17.6% during 2021-2050 (Table-1, Figures-2.2a, 2.2b, 2.2c, 2.2d). The physiological density or real population density is the number of people per unit area of arable land. A higher physiological density suggests that the available agricultural land is being used by more and may reach its output limit sooner than a country that has a lower physiological density. Egypt is a notable example, with physiological density reaching that of Bangladesh, despite much area being desert (wikipedia). Physiological density ranges from 126 persons in Ukraine to 1012153 persons in Singapore, and it is 893 persons for India. It may be noted that it is higher for low fertility countries and low for high fertility countries (Table-1, Figures-2.3).

5.3 Infant mortality and health

The infant mortality rate is the number of infant deaths before his or her first birthday for every 1,000 live births. In addition to giving us key information about material and infant health, the infant mortality rate is an important marker of the overall health of a society (cdc.gov). The number of infant deaths per 1,000 live births ranges from 1 in China- Macau SAR to 79 deaths in Chad. It may be noted that the high fertility countries including India (32 deaths) recorded the infant mortality higher than the world average (31 deaths) and the levels of countries such as Chad, Niger, Somalia, Congo- Democratic Republic and Angola are higher than that of the average of high fertility countries (58.2 deaths) (Table-1, Figure-3.1). The life expectancy at birth among high and low fertility countries ranges from 55 years in Nigeria to 85 years in China-Hong Kong SAR not only for all persons, but also for males and females. It may be noted that all the high fertility countries including India (69 years,68 years,71 years) recorded

low years of life expectancy as compared to the world averages (73 years, 71 years, 75 years) and that of the low fertility countries (82 years, 79 years, and 74 years) (Table-1, Figure-3.2).

5.4 Income and economic development

The percentage of the population living in the urban areas among high fertility and low fertility countries in 2021 ranges from 13% in Burundi to 100% in China- Hong Kong SAR, China- Macau SAR, and Singapore. It may be noted that all the higher fertility countries except Angola (63%) and Gambia (59%) are below the world average (56%) including India (35%) as far as percent urban is concerned.

The Gross National Income (GNI), PPP, 2020 ($ current international) in purchasing power parity (PPP) divided by mid-year population among high fertility and low fertility countries ranges from $780 in Burundi to $117340 in China- Macau SAR. It may be noted that all the high fertility countries including India ($6390) are below the world average ($17635). Among the low fertility countries, Ukraine ($13260) and Bosnia-Herzegovina ($15660) recorded low purchasing power parity in 2021.

6.0 Conclusions and suggestions

While there has been a universal decline in fertility across the countries in the world, the sub-Saharan African countries, especially Niger, Somalia, Congo-Democratic Republic, Mali, Chad, Angola, Burundi, Nigeria, Gambia, and Burkina Faso remain high ranging from 4.4 to 7.0 births per woman. But they show a gradual decline over the years though it is not so significant. The high fertility countries have shown negative signs in variables such as percentage of all births to mothers aged 15-19, birth rate, death rate, population size, physiological density, infant mortality rate, percentage of the population living in urban areas, and GNI per capita- PPP. But Ukraine, being a low fertility country, has recorded high death rate, and some health studies have revealed high blood pressure as the main reason.

As far as India's situation compared with world averages is concerned, the variables such as percentage of married women ages 15-49 using all methods of family planning, percentage of married women ages 15-49 using modern methods of family planning, crude birth rate, rate of natural increase, rate of natural increase, population per km2 of arable land, deaths of children under one year per 1,000 live births, gross national income in purchasing power parity, percentage of population living in urban areas, percentage of population ages 65+, and life expectancy at birth have attributed negative signs.

The high fertility countries need to be encouraged for reducing fertility with the help of some development-oriented innovative approaches such as introducing a job-oriented academic curriculum for employment opportunities, increasing the awareness of small-family norms, and removing the gaps in the gender, social and economic aspects of the humanity. There is a need to have some new effective and efficient development approaches to bring about desirable change in the population characteristics shown negatively to realize the fact that the development is the best contraception for desirable demographic change leading to population stabilization and sustainable development.

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TABLE

Table-1: Population characteristics by high and low fertility countries, India, World, 2021

Location	*Code*	*1.TFR,2020*		*2.TFR,1990*		*3.TFRPC*		*4.PB15-19,2020*		*5.PB15-19,1990*	
World	WOR	NER	7.0	NER	7.9	SMR	0.0	NER	23	TCD	22
India	IND	SOM	6.9	SOM	7.4	SOM	-6.8	MLI	22	MLI	21
High fertility countries	*HFC*	TCD	6.4	TCD	7.3	CDR	-7.5	TCD	21	NER	20
Niger	NER	MLI	6.3	MLI	7.2	ESP	-7.7	AGO	19	PRI	18
Somalia	SOM	CDR	6.2	AGO	7.0	UKR	-8.3	HFC	16	NGA	17
Congo- Dem.Rep.	CDR	AGO	6.0	BFA	7.0	NER	-11.4	CDR	16	GMB	17
Mali	MLI	HFR	5.9	HFC	7.0	TCD	-12.3	NGA	14	UKR	17
Chad	TCD	BDI	5.2	CDR	6.7	MLI	-12.5	BFA	14	AGO	16
Angola	AGO	NGA	5.2	BDI	6.7	AGO	-14.3	SOM	13	BFA	16
Burundi	BDI	BFA	5.0	NGA	6.5	HFC	-16.0	PRI	13	HFC	16
Nigeria	NGA	GMB	4.4	GMB	6.1	NGA	-20.0	GMB	10	IND	15
Gambia	GMB	WOR	2.3	IND	4.0	BDI	-22.4	WOR	9	CDR	14
Burkina Faso	BFA	IND	2.2	WOR	3.2	GMB	-27.9	BDI	8	WOR	12
Low fertility countries	*LFC*	ESP	1.2	PRI	2.2	WOR	-28.1	UKR	5	SOM	10
South Korea	KOR	BIH	1.2	MLT	2.0	BFA	-28.6	IND	3	BIH	8
Puerto Rico	PRI	MLT	1.1	BIH	1.8	LFC	-29.7	LFC	3	LFC	6
China- Hong Kong SAR	HKG	SGP	1.1	SGP	1.7	HKG	-30.8	MLT	3	BDI	6
Malta	MLT	UKR	1.1	MAC	1.7	BIH	-33.3	BIH	3	ESP	5
Singapore	SGP	SMR	1.1	LFC	1.6	SGP	-35.3	ESP	2	MLT	3
China- Macau SAR	MAC	LFR	1.0	KOR	1.6	IND	-45.0	SGP	1	HKG	2
Ukraine	UKR	PRI	1.0	HKG	1.3	MLT	-45.0	KOR	0	SGP	2
Spain	ESP	HKG	0.9	ESP	1.3	MAC	-47.1	HKG	0	KOR	1
Bosnia-Herzegovina	BIH	MAC	0.9	UKR	1.2	KOR	-50.0	MAC	0	MAC	1
San Marino	SMR	KOR	0.8	SMR	0.0	PRI	-54.5	SMR	0	SMR	0
Location		*6.PB15-19PC*		*7.PB35+,2020*		*8.PB35+,1990*		*9.PB35+PC*		***10.FPMWA,2021***	
World	WOR	BDI	33.3	ESP	42	SOM	24	KOR	1550.0	KOR	82
India	IND	SOM	30.0	HKG	37	BDI	21	ESP	281.8	HKG	67
High fertility countries	*HFC*	AGO	18.8	KOR	33	CDR	20	HKG	236.4	UKR	65
Niger	NER	NER	15.0	LFC	25	BFA	19	UKR	220.0	LFC	64
Somalia	SOM	CDR	14.3	SGP	25	NGA	18	LFC	186.1	ESP	62
Congo- Dem.Rep.	CDR	MLI	4.8	MLT	23	HFC	18	BIH	128.6	WOR	61
Mali	MLI	HFC	0.6	MAC	21	NER	16	MAC	110.0	IND	54
Chad	TCD	MLT	0.0	BDI	19	MLI	16	SGP	108.3	BIH	46
Angola	AGO	SMR	0.0	NGA	19	AGO	16	PRI	85.7	BFA	35
Burundi	BDI	TCD	-4.5	GMB	19	MLT	14	MLT	64.3	BDI	29
Nigeria	NGA	BFA	-12.5	CDR	16	TCD	13	GMB	46.2	CDR	28
Gambia	GMB	NGA	-17.6	AGO	16	GMB	13	WOR	27.3	GMB	19
Burkina Faso	BFA	WOR	-25.0	UKR	16	SGP	12	TCD	7.7	HFC	19
Low fertility countries	*LFC*	PRI	-27.8	BIH	16	WOR	11	NGA	5.6	MLI	17
South Korea	KOR	GMB	-41.2	HFC	16	HKG	11	AGO	0.0	NGA	17
Puerto Rico	PRI	SGP	-50.0	BFA	15	ESP	11	SMR	0.0	AGO	14
China- Hong Kong SAR	HKG	LFC	-52.6	WOR	14	MAC	10	BDI	-9.5	NER	11
Malta	MLT	ESP	-60.0	NER	14	IND	9	HFC	-9.7	TCD	8

Singapore	SGP	BIH	-62.5	MLI	14	LFC	9	NER	-12.5	SOM	7
China- Macau SAR	MAC	UKR	-70.6	TCD	14	PRI	7	MLI	-12.5	PRI	0
Ukraine	UKR	IND	-80.0	SOM	13	BIH	7	CDR	-20.0	MLT	0
Spain	ESP	KOR	-100.0	PRI	13	UKR	5	BFA	-21.1	SGP	0
Bosnia-Herzegovina	BIH	HKG	-100.0	IND	7	KOR	2	IND	-22.2	MAC	0
San Marino	SMR	MAC	-100.0	SMR	0	SMR	0	SOM	-45.8	SMR	0

Source: *PRB (2021).* ***Note:*** *1.TFR,2020= Total fertility rate (number of births per woman), 2020; 2.TFR,1990= TFR, 1990; 3.TFRPC= Percent change of TFR, 1990-2020; 4.PB15-19,2020= Percentage of all births to mothers age 15-19, 2020; 5.PB15-19,1990= Percentage of all births to mothers age 15-19, 1990; 6.PB15-19PC= Percent change of percent of all births to mothers age 15-19, 1990-2020; 7.PB35+,2020= Percentage of all births to mothers age 35+, 2020; 8.PB35+,1990= Percentage of all births to mothers age 35+, 1990; 9. PB35PC= Percent change of percent of all births to mothers age 35+, 1990-2020; 10. FPMWA,2021= Family planning among married women ages 15-49-using all methods (%).*

Table-1 (Contd.)

11.FPMWM,2021		***12.FPMWD,2021***		**13.CBR,2021**		**14.CDR,2021**		**15.RNI✖,2021**		**16.NMR,2021**	
HKG	65	**WOR**	-	SOM	49	UKR	15	SOM	3.8	MLT	40
ESP	60	**IND**	72	NER	47	BIH	12	NER	3.7	ESP	5
WOR	54	***HFC***	-	TCD	47	SOM	11	TCD	3.7	SMR	5
IND	48	NER	46	MLI	45	NGA	11	MLI	3.6	LFC	3
UKR	48	SOM	2	CDR	44	NER	10	CDR	3.5	KOR	1
LFC	46	CDR	31	AGO	43	TCD	10	AGO	3.4	WOR	0
BFA	32	MLI	40	HFR	42	ESP	10	HFC	3	IND	0
BDI	23	TCD	17	NGA	37	SMR	10	BDI	3	TCD	0
CDR	18	AGO	24	BFA	37	MLI	9	BFA	2.9	AGO	0
GMB	17	BDI	39	BDI	36	PRI	9	GMB	2.6	NGA	0
MLI	16	NGA	34	GMB	33	HFR	9	NGA	2.5	MAC	0
HFC	15	GMB	40	IND	20	LFR	8	IND	1.4	UKR	0
AGO	13	BFA	56	WOR	18	CDR	8	WOR	1	BIH	0
NGA	12	***LFC***	-	MLT	9	AGO	8	MAC	0.5	HFC	-1
BIH	12	KOR	-	SGP	9	BFA	8	SGP	0.3	NER	-1
NER	11	PRI	-	MAC	8	GMB	8	MLT	0.1	CDR	-1
TCD	7	HKG	-	LFR	7	WOR	8	KOR	-0.1	BDI	-1
SOM	1	MLT	-	UKR	7	MLT	7	HKG	-0.1	GMB	-1
KOR	0	SGP	-	ESP	7	HKG	7	LFC	0	BFA	-1
PRI	0	MAC	-	BIH	7	BDI	6	PRI	-0.3	SOM	-2
MLT	0	UKR	68	SMR	7	IND	6	ESP	-0.3	MLI	-2
SGP	0	ESP	-	PRI	6	KOR	6	SMR	-0.4	HKG	-5
MAC	0	BIH	22	HKG	6	SGP	5	BIH	-0.5	SGP	-6
SMR	0	SMR	-	KOR	5	MAC	3	UKR	-0.8	PRI	-8
17.Pop.(m)2021		***18.Pop. (m)2050***		***19.PopPC21-50***		**20.PPAL,2021**		***21.IMR,2021***		***22.YHIM✖,2021***	
WOR	7837.00	WOR	9688.00	NER	162.9	SGP	10,12,152	TCD	79.0	WOR	0
IND	1393.00	IND	1638.70	AGO	144.0	HKG	2,48,367	NER	69.0	IND	0
HFR	453.50	HFC	956.70	CDR	129.1	LFC	1,42,061	SOM	65.0	HFC	0
NGA	211.40	NGA	401.30	SOM	128.7	MLT	6,035	CDR	64.0	NER	<0.1
LFR	161.33	CDR	211.90	MLI	125.4	PRI	5,634	AGO	62.0	SOM	<0.1
CDR	92.50	LFC	149.33	TCD	114.9	KOR	3,799	HFR	58.2	CDR	0.2

KOR	51.80	AGO	82.00	BDI	109.8	SMR	1,694	NGA	58.0	MLI	0.3
ESP	47.40	NER	66.00	HFC	111.0	SOM	1,487	MLI	54.0	TCD	0.3
UKR	41.40	ESP	50.00	BFA	101.9	BDI	1,020	BFA	49.0	AGO	0.4
AGO	33.60	KOR	47.70	GMB	80.0	IND	893	GMB	42.0	BDI	0.5
NER	25.10	MLI	47.10	NGA	89.8	CDR	784	BDI	40.0	NGA	0.3
BFA	21.50	BFA	43.40	MLT	40.0	AGO	687	IND	32.0	GMB	0.2
MLI	20.90	SOM	37.50	MAC	14.3	HFC	633	WOR	31.0	BFA	0.4
TCD	17.40	TCD	37.40	WOR	23.6	NGA	622	MLT	6.7	LFC	0
SOM	16.40	UKR	30.70	IND	17.6	WOR	565	UKR	6.7	KOR	0
BDI	12.20	BDI	25.60	SGP	8.8	GMB	565	PRI	6.6	PRI	0
HKG	7.50	HKG	7.90	HKG	5.3	ESP	401	BIH	6.0	HKG	0
SGP	5.70	SGP	6.20	ESP	5.5	BFA	358	SMR	4.3	MLT	0
BIH	3.50	GMB	4.50	PRI	-14.3	BIH	342	LFR	4.0	SGP	<0.1
PRI	2.80	BIH	2.90	SMR	0.0	TCD	335	KOR	2.7	MAC	0
GMB	2.50	PRI	2.40	KOR	-7.9	MLI	325	ESP	2.7	UKR	0.1
MAC	0.70	MAC	0.80	LFC	-7.4	NER	142	SGP	1.8	ESP	0.2
MLT	0.50	MLT	0.70	BIH	-17.1	UKR	126	HKG	1.5	BIH	0
SMR	0.03	SMR	0.03	UKR	-25.8	MAC	0	MAC	1.0	SMR	0

Source: *PRB (2021).* ***Note:*** *11.FPMWM,2021= Family planning among married women ages 15-49-using modern methods (%); 12.FPMWD,2021= Family planning among married women ages 15-49-demand satisfied by modern methods (%); 13.CBR,2021= Crude birth rate (Births per 1,000 population); 14.CDR,2021= Crude death rate (Deaths per 1,000 population); 15.RNI%,2021= Rate of natural increase (%); 16.NMR,2021= Net migration rate,2021; 17.Pop(m)2021= Population (million), mid-2021; 18.Pop(m)2050= Population (million), mid-2050; 19.PopPC21-50= Percentage of population, 2021-2050; 20.PPAL,2021= Population per km2 of arable land; 21.IMR,2021= Infant mortality rate (Deaths of children under one year per 1,000 live births); 22.YHIM%,2021= Youth ages 15-24 with HIV/AIDS (%)- males, 2021.*

Table-1 (Contd.)

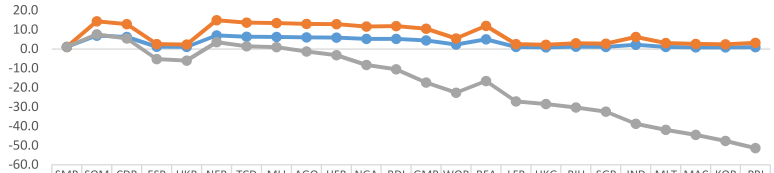
Location	*Code*	***23.YHIF%,2021***		**24.GNIPPP,2021**		***25.PU%2021***		***26.P<15%,2021***	
World	WOR	WOR	-	MAC	1,17,340.0	HKG	100	NER	50
India	IND	IND	0	SGP	86,480.0	SGP	100	AGO	48
High fertility countries	*HFC*	HFC	1	HKG	62,510.0	MAC	100	MLI	47
Niger	NER	NER	<0.1	LFC	49,310.0	SMR	97	TCD	47
Somalia	SOM	SOM	<0.1	KOR	43,480.0	MLT	95	SOM	46
Congo- Dem.Rep.	CDR	CDR	0.4	ESP	42,250.0	PRI	94	CDR	46
Mali	MLI	MLI	0.5	MLT	38,800.0	LFC	87	HFC	46
Chad	TCD	TCD	0.5	PRI	24,010.0	KOR	86	GMB	44
Angola	AGO	AGO	1	WOR	17,535.0	ESP	81	BFA	44
Burundi	BDI	BDI	0.6	BIH	15,660.0	UKR	69	BDI	43
Nigeria	NGA	NGA	0.6	UKR	13,260.0	AGO	63	NGA	43
Gambia	GMB	GMB	0.5	IND	6,390.0	GMB	59	WOR	26
Burkina Faso	BFA	BFA	0.5	AGO	6,020.0	WOR	56	IND	26
Low fertility countries	*LFC*	LFC	0	NGA	5,000.0	NGA	51	PRI	16
South Korea	KOR	KOR	0	HFC	2,324.0	BIH	49	SGP	15

Table-1 (Contd.)									
Location	*Code*	***23.YHIF%,2021***		**24.GNIPPP,2021**		***25.PU%2021***		***26.P<15%,2021***	
Puerto Rico	PRI	PRI	0	MLI	2,250.0	SOM	46	UKR	15
China- Hong Kong SAR	HKG	HKG	0	GMB	2,240.0	CDR	45	BIH	15
Malta	MLT	MLT	0	BFA	2,190.0	MLI	43	ESP	14
Singapore	SGP	SGP	<0.1	TCD	1,580.0	HFC	39	SMR	14
China- Macau SAR	MAC	MAC	0	NER	1,210.0	IND	35	LFC	14
Ukraine	UKR	UKR	0.1	CDR	1,100.0	BFA	30	MLT	13
Spain	ESP	ESP	<0.1	SOM	870.0	TCD	23	MAC	13
Bosnia-Herzegovina	BIH	BIH	0	BDI	780.0	NER	16	KOR	12
San Marino	SMR	SMR	0	SMR	0.0	BDI	13	HKG	12
Location		***27.P65+%,2021***		**28.LEBP,2021**		**29.LEBM,2021**		**30.LEBF,2021**	
World	WOR	PRI	21	HKG	85	HKG	83	HKG	88
India	IND	ESP	20	SMR	85	SMR	83	MAC	87
High fertility countries	*HFC*	SMR	19	SGP	84	SGP	81	SMR	87
Niger	NER	HKG	18	MAC	84	MAC	81	KOR	86
Somalia	SOM	MLT	18	KOR	83	KOR	80	SGP	86
Congo- Dem.Rep.	CDR	BIH	18	MLT	83	MLT	80	MLT	85
Mali	MLI	LFC	18	ESP	82	ESP	80	ESP	85
Chad	TCD	KOR	17	LFC	82	LFC	79	LFC	84
Angola	AGO	UKR	17	PRI	80	PRI	77	PRI	84
Burundi	BDI	SGP	15	BIH	77	BIH	74	BIH	79
Nigeria	NGA	MAC	13	WOR	73	WOR	71	UKR	77
Gambia	GMB	WOR	10	UKR	72	IND	68	WOR	75
Burkina Faso	BFA	IND	7	IND	69	UKR	67	IND	71
Low fertility countries	*LFC*	NER	3	BDI	67	BDI	65	BDI	69
South Korea	KOR	SOM	3	GMB	63	GMB	61	GMB	64
Puerto Rico	PRI	BDI	3	BFA	62	BFA	61	CDR	63
China- Hong Kong SAR	HKG	NGA	3	CDR	61	CDR	59	AGO	63
Malta	MLT	GMB	3	AGO	61	MLI	59	BFA	63
Singapore	SGP	HFC	3	HFC	60	AGO	59	HFC	62
China- Macau SAR	MAC	CDR	2	MLI	60	HFC	59	NER	61
Ukraine	UKR	MLI	2	NER	59	NER	58	MLI	61
Spain	ESP	TCD	2	SOM	58	TCD	57	SOM	60
Bosnia-Herzegovina	BIH	AGO	2	TCD	58	SOM	56	TCD	60
San Marino	SMR	BFA	2	NGA	55	NGA	54	NGA	56

Source: *PRB (2021).* ***Note:*** *23.YHIF%,2021= Youth ages 15-24 with HIV/AIDS (%)- females, 2021; 24.GNIPPP,2021= Gross national income in purchasing power parity (PPP), 2020 ($ current international); 25.PU%= Percentage of population living in urban areas, 2021; 26.P<15%,2021= Percent of population ages <15, 2021; 27.P65+%,2021= Percent of population ages 65+, 2021; 28.LEBP,2021= Life expectancy at birth (years)- persons; 29.LEBM,2021= Life expectancy at birth (years)- males; 30.LEBF,2021= Life expectancy at birth (years)- females.*

FIGURES

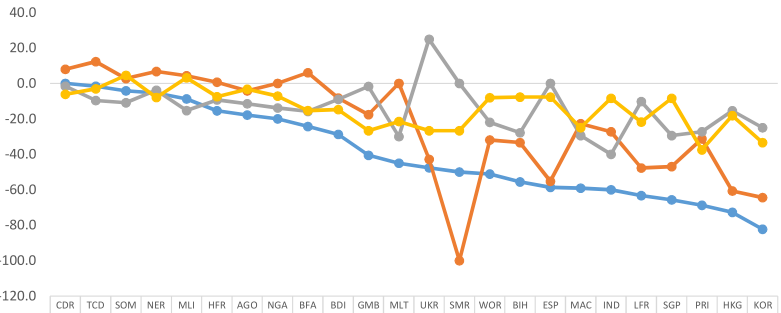
Figure-1.1
TFR and its percent change by high and low fertility countries, India, World, 1990-2020



	SMR	SOM	CDR	ESP	UKR	NER	TCD	MLI	AGO	HFR	NGA	BDI	GMB	WOR	BFA	LFR	HKG	BIH	SGP	IND	MLT	MAC	KOR	PRI
% Change	0.0	-6.8	-7.5	-7.7	-8.3	-11.4	-12.3	-12.5	-14.3	-16.0	-20.0	-22.4	-27.9	-28.1	-28.6	-29.7	-30.8	-33.3	-35.3	-45.0	-45.0	-47.1	-50.0	-54.5
1990	0.0	7.4	6.7	1.3	1.2	7.9	7.3	7.2	7.0	7.0	6.5	6.7	6.1	3.2	7.0	1.5	1.3	1.8	1.7	4.0	2.0	1.7	1.6	2.2
2020	1.1	6.9	6.2	1.2	1.1	7.0	6.4	6.3	6.0	5.9	5.2	5.2	4.4	2.3	5.0	1.0	0.9	1.2	1.1	2.2	1.1	0.9	0.8	1.0

Note: 0.0= Data not available.

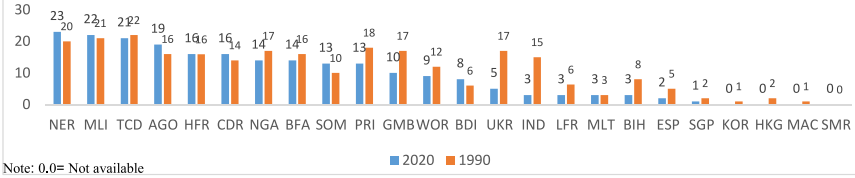
Figure-1.2
Percent change of TFR by top-10 and bottom-10 countries, India, World, 1970-2020



	CDR	TCD	SOM	NER	MLI	HFR	AGO	NGA	BFA	BDI	GMB	MLT	UKR	SMR	WOR	BIH	ESP	MAC	IND	LFR	SGP	PRI	HKG	KOR
1970-2020	0.0	-1.5	-4.2	-5.4	-8.7	-15.4	-17.8	-20.0	-24.2	-28.8	-40.5	-45.0	-47.6	-50.0	-51.1	-55.6	-58.6	-59.1	-60.0	-63.3	-65.6	-68.8	-72.7	-82.2
1970-1990	8.1	12.3	2.8	6.8	4.3	0.7	-4.1	0.0	6.1	-8.2	-17.6	0.0	-42.9	-100.	-31.9	-33.3	-55.2	-22.7	-27.3	-47.7	-46.9	-31.3	-60.6	-64.4
1990-2013	-1.5	-9.6	-10.8	-3.8	-15.3	-9.3	-11.4	-13.8	-15.7	-9.0	-1.6	-30.0	25.0	0.0	-21.9	-27.8	0.0	-29.4	-40.0	-10.1	-29.4	-27.3	-15.4	-25.0
2013-2020	-6.1	-3.0	4.5	-7.9	3.3	-7.4	-3.2	-7.1	-15.3	-14.8	-26.7	-21.4	-26.7	-26.7	-8.0	-7.7	-7.7	-25.0	-8.3	-21.8	-8.3	-37.5	-18.2	-33.3

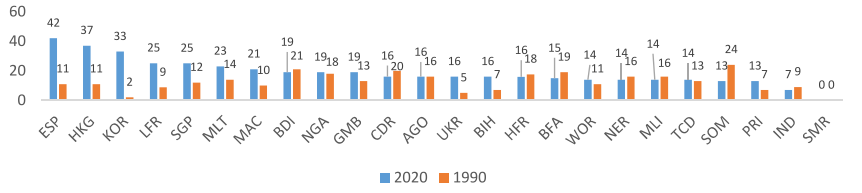
Note: AGO= Angola; BDI= Burundi; BFA= Burkina Faso; BIH= Bosnia-Herzegovina; CDR= Congo- Democratic Republic; GMB= Gambia; MAC= China- Macau SAR; ESP= Spain; HFC= Top-10 countries in TFR; HKG= China- Hong Kong SAR; IND= India; KOR= South Korea; LFC= Bottom-10 countries in TFR; MLI= Mali; MLT= Malta; NER= Niger; NGA= Nigeria; PRI= Puerto Rico; SGP= Singapore; SMR= San Marino; SOM= Somalia; TCD= Chad; UKR= Ukraine; WOR= World.

Figure-1.2a
Births to mother ages 15-19 (%) by high and low fertility countries, India, World, 1990 and 2020



Note: 0.0= Not available

Figure-1.2b
Births to mother ages 35+ (%) by high and low fertility countries, India, World, 1990 and 2020



Note: 0.0= Not available

Figure-1.2c
Percent change of births to mother ages 15-19 and 35+ by high and low fertility countries, India, World, 1990-2020

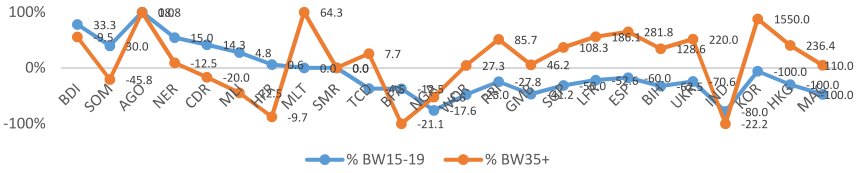


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Figure-2.1
CBR and CDR by high and low fertility countries, India, World, 2021

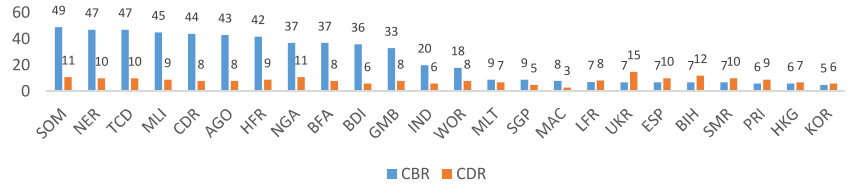
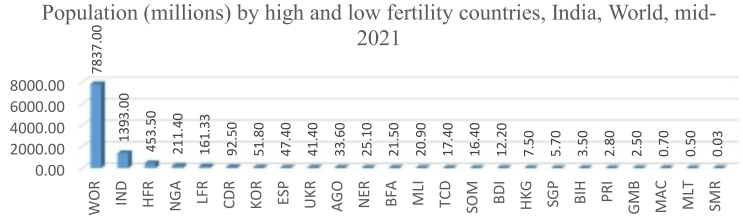


Figure-2.2a
Population (millions) by high and low fertility countries, India, World, mid-2021



Source: PRB (2021). **Note:** AGO = Angola; BDI = Burundi; BFA = Burkina Faso; BIH = Bosnia-Herzegovina; CDR = Congo- Democratic Republic; GMB = Gambia; MAC = China- Macau SAR; ESP = Spain; HFC = Top-10 countries in TFR; HKG = China- Hong Kong SAR; IND = India; KOR = South Korea; LFC = Bottom-10 countries in TFR; MLI = Mali; MLT = Malta; NER = Niger; NGA = Nigeria; PRI = Puerto Rico; SGP = Singapore; SMR = San Marino; SOM = Somalia; TCD = Chad; UKR = Ukraine; WOR = World.

Figure-2.2b
Population (millions) by high and low fertility countries, India, World, mid-2035

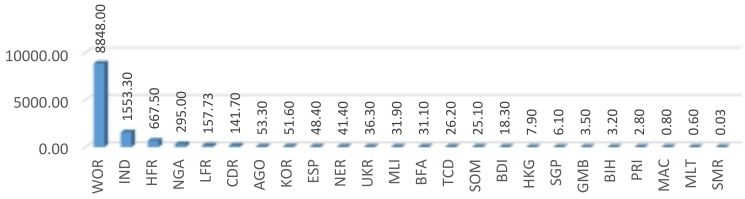


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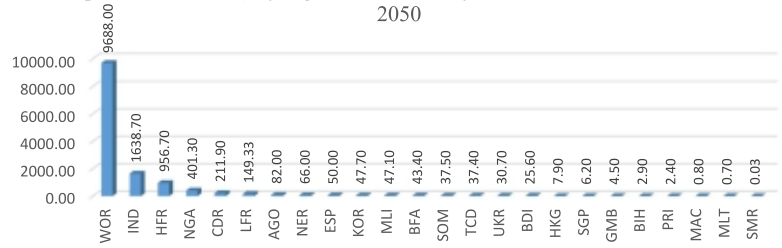
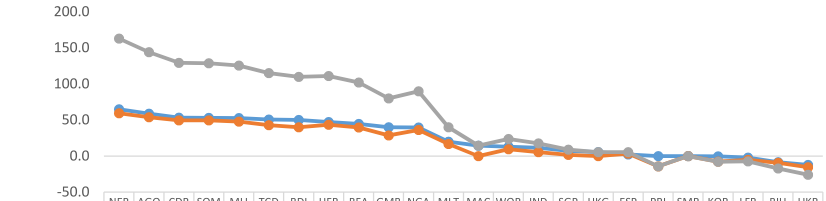
Figure-2.2c
Population (millions) by high and low fertility countries, India, World, mid-2050



Source: PRB (2021)

Figure-2.2d
Percentage change of population by high and low fertility countries, India, World, 2021-2035, 2035-2050 and 2021-2050



	NER	AGO	CDR	SOM	MLI	TCD	BDI	HFR	BFA	GMB	NGA	MLT	MAC	WOR	IND	SGP	HKG	ESP	PRI	SMR	KOR	LFR	BIH	UKR
2021-2035	64.9	58.6	53.2	53.0	52.6	50.6	50.0	47.2	44.7	40.0	39.5	20.0	14.3	12.9	11.5	7.0	5.3	2.1	0.0	0.0	-0.4	-2.2	-8.6	-12.3
2035-2050	59.4	53.8	49.5	49.4	47.6	42.7	39.9	43.3	39.5	28.6	36.0	16.7	0.0	9.5	5.5	1.6	0.0	3.3	-14.3	0.0	-7.6	-5.3	-9.4	-15.4
2021-2050	162.9	144.0	129.1	128.7	125.4	114.9	109.8	111.0	101.9	80.0	89.8	40.0	14.3	23.6	17.6	8.8	5.3	5.5	-14.3	0.0	-7.9	-7.4	-17.1	-25.8

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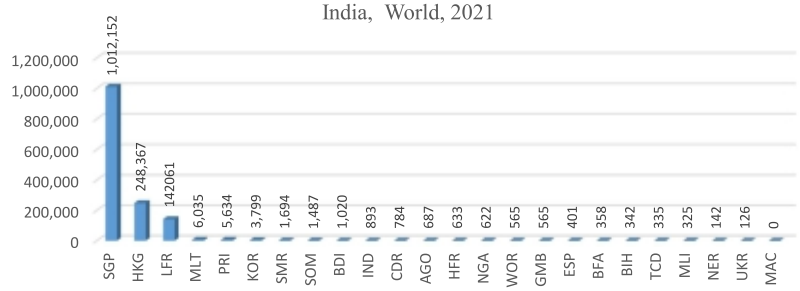
Figure-2.3
Population per Sq. km of arable land by high and low fertility countries, India, World, 2021



Note: AGO= Angola; BDI= Burundi; BFA= Burkina Faso; BIH= Bosnia-Herzegovina; CDR= Congo- Democratic Republic; GMB= Gambia; MAC= China- Macau SAR; ESP= Spain; HFC= Top-10 countries in TFR; HKG= China- Hong Kong SAR; IND= India; KOR= South Korea; LFC= Bottom-10 countries in TFR; MLI= Mali; MLT= Malta; NER= Niger; NGA= Nigeria; PRI= Puerto Rico; SGP= Singapore; SMR= San Marino; SOM= Somalia; TCD= Chad; UKR= Ukraine; WOR= World.

Figure-3.1
IMR by high and low fertility countries, India, World, 2021

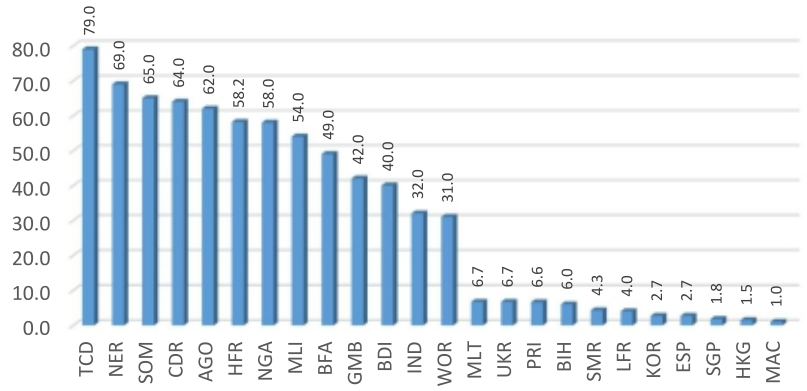


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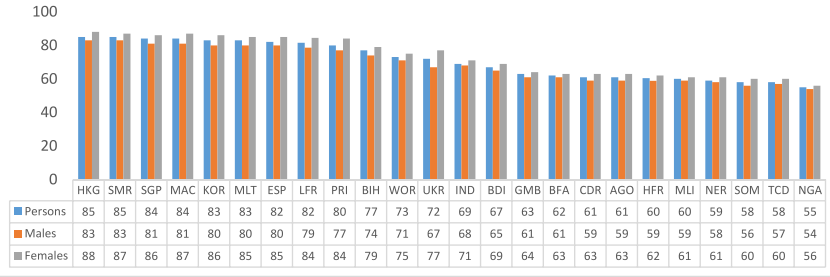
Figure-3.2
Life expectancy at birth by gender and high and low fertility countries, India, World, 2021



	HKG	SMR	SGP	MAC	KOR	MLT	ESP	LFR	PRI	BIH	WOR	UKR	IND	BDI	GMB	BFA	CDR	AGO	HFR	MLI	NER	SOM	TCD	NGA
Persons	85	85	84	84	83	83	82	82	80	77	73	72	69	67	63	62	61	61	60	60	59	58	58	55
Males	83	83	81	81	80	80	80	79	77	74	71	67	68	65	61	61	59	59	59	59	58	56	57	54
Females	88	87	86	87	86	85	85	84	84	79	75	77	71	69	64	63	63	63	62	61	61	60	60	56

Note: AGO= Angola; BDI= Burundi; BFA= Burkina Faso; BIH= Bosnia-Herzegovina; CDR= Congo- Democratic Republic; GMB= Gambia; MAC= China- Macau SAR; ESP= Spain; HFC= Top-10 countries in TFR; HKG= China- Hong Kong SAR; IND= India; KOR= South Korea; LFC= Bottom-10 countries in TFR; MLI= Mali; MLT= Malta; NER= Niger; NGA= Nigeria; PRI= Puerto Rico; SGP= Singapore; SMR= San Marino; SOM= Somalia; TCD= Chad; UKR= Ukraine; WOR= World.

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Figure-4.1
Percentage of urban population by high and low fertility countries, World, 2021

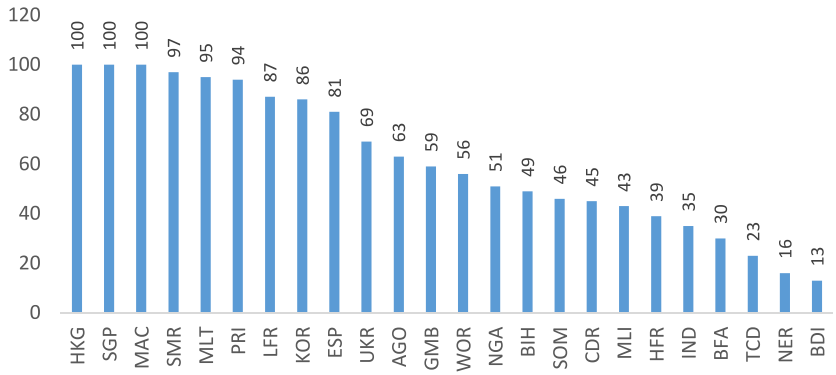

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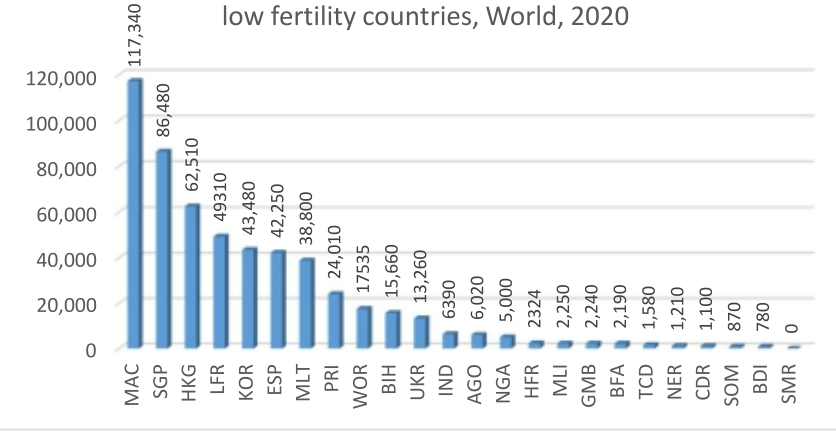
Figure-4.2
GNI per Capita, PPP ($ current international) by high and low fertility countries, World, 2020



Note: AGO= Angola; BDI= Burundi; BFA= Burkina Faso; BIH= Bosnia-Herzegovina; CDR= Congo- Democratic Republic; GMB= Gambia; MAC= China- Macau SAR; ESP= Spain; HFC= Top-10 countries in TFR; HKG= China- Hong Kong SAR; IND= India; KOR= South Korea; LFC= Bottom-10 countries in TFR; MLI= Mali; MLT= Malta; NER= Niger; NGA= Nigeria; PRI= Puerto Rico; SGP= Singapore; SMR= San Marino; SOM= Somalia; TCD= Chad; UKR= Ukraine; WOR= World.

Assessment of relationship among personality type, level of adjustment and anxiety

Tanuja Kher, V V Kulkarni

Introduction

The college stage is a very crucial one for all students. This stage marks the passage from adolescence to adulthood and serves as a pivotal moment in their lives. Students are likely to be affluent members of society after graduation. First-year engineering students must acclimatise to their new environment while juggling numerous academic tasks at the same time. Amid the atmosphere of intense competition, engineering students must achieve academic excellence. Along with maintaining a strong academic record, they have to also manage other college-related tasks, relationship issues, life transitions, and career exploration. Stress among students may result from addressing all of these problems. These kinds of stresses can negatively impact both a student's academic performance and personal life. It might have an impact on their well-being, health, academic progress, social life, and personal growth. As a result, in order to live a healthy and happy life, students should acquire effective stress management skills early in life. Therefore, it is imperative to assess each student's stress, anxiety, and adjustment levels as soon as they enroll. Finding those students who are experiencing psychological issues might make it simpler to help, guide, and counsel them. This researcher attempted to study the process of triangulation of trait anxiety, personality type and adjustment among first-year engineering students from four different colleges of Maharashtra state.

Concepts used in the study

Personality Type A and B

Following extensive research, Friedman and Rosennman (1976) identified the Type A and Type B personality types as those who are more or less susceptible to stress. They

discovered certain shared traits that they classified as type A, such as a strong achievement orientation, hostility, impatience, and a highly competitive drive. They discovered a strong link between personality Type A people and the likelihood of developing heart disease. They found that those with personality Type A are more prone to stress. Finding out about students' personality types is one of the goals of this study. Personality Type A individuals are more stressed. It becomes quite tough for them to face failure. They keep working hard even after accomplishing their goals, and they do so without delight.

Type A personality is not harmful until it starts interfering in everyday activities. If people are well aware when they need to relax and take things slowly, they may work effectively; otherwise they have higher chances of suffering from health related issues.

Those who belong to Type B are generally known to be content. They are typically thought of as being gregarious and peaceful. They don't worry excessively about their successes or accomplishments, and they don't get easily annoyed or furious. They typically look for amusement and relaxation during their free time. They operate with ease and tranquilly. Generally, it is a mixture of both types in varying proportions. It is always advisable for a Type A to learn from Type B and vice-versa. Although the name suggests a personality type, it is more accurately described as a tendency.

Stress

According to modern writers' views, stress should be defined and be understood with the focus of an individual and his environment and with the combination of both. Oxford Dictionary defines stress as “a state of affair involving demand of physical or mental energy”.

Mentioned by Krishan (2014) academic stress means a demand related to academics that taxes or exceeds the available resources (internal or external) as perceived by the student. Academic pressure arises when a student's time and energy are put under extreme strain in order to fulfill academic objectives, whereas educational pressure occurs when a student is afraid of jeopardizing some academic goals.

Excessive and chronic stress has far-reaching health consequences, as it can trigger a variety of disorders, and it is well established that stress-related somatic events can have an impact on one's quality of life.

Anxiety

Anxiety is defined as a widespread and unfocused feeling of uneasiness

and worry caused by a situational response. Anxiety is strongly linked to fear, which is a reaction to a real or perceived immediate threat. In the current study, students' trait anxiety was measured. It is considered as the tendency to become anxious. Spilberger, C.D (1972 & 1983) defined "Trait anxiety as proneness to experience anxiety." According to him people with high trait anxiety tend to view the world as more dangerous or threatening than those with low trait anxiety.

Adjustment

Adjustment is one of life's most vital features. Adjustment is the process by which a person adopts specific behaviors in order to adapt with and maintain harmony with their surroundings.

The term can be defined as "the process of finding and adopting modes of behavior suitable to the environment or to the changes in the environment".

Engineering education

According to Anu, V (2021) engineering education has multifold benefits and it offers a diverse platform for students to shape their careers. Though the field is fascinating nearly all engineering students are expected to be at the top of their class, but balancing academics and personal responsibilities can make it challenging for them to do so. College students become unhappy when their grades fall short of passing. Sadness is also present. Engineering students who suffer from this serious mental disease experience low self-esteem, a loss of interest in almost everything, and a sense of pessimism. The engineering course makes the students face this kind of problem due to the difficult conditions.

Hypotheses

- Adjustment level and personality type are independent.
- Anxiety level and personality type are independent.

Methodology

- Universe of the study- Engineering students.
- Sampling method- Selective sampling method was used.
- Sampling design- The study is conducted on First year engineering students. Students who have taken admission for the first year in the academic year 2016-17.

Students from different branches were taken as a sample group. Two colleges from Pune city and two are from rural area. The sample size is 640 students.

Four colleges are as listed below:

1. Modern College of Engineering, Pune. (Modern)
2. College of Engineering, Pune (COEP)
3. Babasaheb Ambedkar Technological University (BATU)
4. Saraswati Education Society's Group of Institutions Faculty of Engineering - [SESGOIFE]

Tools

To collect data, different tools were used. They are as mentioned below.

1) Bell's adjustment Inventory – It covers areas for Home & family, Social, Personal/ emotional, educational, health adjustment.

2) State and Trait Anxiety (STAI) scale by Spielberger and others.

3) Personality type A and B - The test is developed by Dr. Prabhu from NIMHANS, Bengaluru.

4) Personal information form created by the researcher.

Method of Data Collection

i) These tests have been administered to the students in a group. The tools used for data collection were group tests. Thus, it was easier to collect data in small groups. The researcher along with other assistants could address all the quires from students. Students were keenly observed as they solve all the tests one by one. It was also checked whether the students have answered each question of each test.

ii) Method of data analysis - Methods of central tendencies and correlation were used for primary analysis. Excel software and PSPP software were also used.

Literature Review

A great deal of study has been done on college students' stress and anxiety. The majority of these studies concentrated on identifying stressors for college students and their impact on their physical and mental well-being, as well as academic achievement.

Narasappa Kumaraswamy (2013) investigated college students' academic stress, anxiety, and depression. This study found academic stress, anxiety, and depression to be a source of concern among college students. However, according to a survey of college students, 10-20% of the student population experiences psychological issues such as stress, anxiety, and depression at any given time. This study focuses on stress in college students, the nature of psychiatric morbidity, emotional

problems and adjustment, and psychological problems in college students.

The first and final year students of engineering were studied by R. Ansari and P. Ramtake (2016). The basic purpose of this study was to identify causal factors for stress among college students and how those factors impact their mental and physical health and their academic achievement. They used Anxiety Depression Scale and studied 200 engineering students. The findings of this study clearly demonstrated that first-year students reported more anxiety than last year students. They suggested some remedial programmes for physical and mental health improvement for students. To handle students' problems effectively and to improve mental health of students, they recommended providing counseling facility.

To summarize literature review, stress and adjustment are important components in the life of a young adult. According to the findings, stress and adjustment are strongly negatively related, implying that as one variable's degree increases, the degree of the other decreases. The psychological tools utilized in this study assisted in understanding the students' current situation about their stress and anxiety level along with the difficulties in adjustment and offered remedial steps, which will provide them with a roadmap for a healthy existence.

The goal of this study is to discover associations and relationships between various attributes. As a result, percentages were determined using Excel software in the preliminary analysis. PSPP was utilized to discover relationships and correlations between various elements.

Results and Discussion

After analyzing the data following results were revealed. The first table deals with area and gender wise distribution as per personality type.

Table 1: Area and gender wise distributions of the respondents according to the Personality Type A/B

		Personality type	
		A Type	B Type
Area	Rural	120	201
		37.4%	62.6%
	Urban	117	202
		36.7%	63.3%
Gender	Male	162	281
		36.6%	63.4%
	Female	75	82
		38.1%	61.9%

This table explains area wise percentage of personality type of students. It is easily visible that results for urban and rural are the same. Thus, the main finding of the study is among 640 students, 37 percent of them belong to personality Type A, which is a significant percentage. Students' replies are consistent across colleges, areas, and genders, with very minimal variations.

Overall, 85 percent of students reported moderate physiological stress symptoms and 16 percent expressed high emotional stress symptoms. Behavioral symptoms were indicated at a moderate degree by nearly 99 percent of students. The moderate level is fragile, according to the guidelines. If this pattern persists, more complications may arise in the future. In short, physiological stress symptoms are slightly higher in urban students and girls, with a strong association to overall symptom. The results of the data analysis show that the variation of behavioral stress symptoms is unaffected by college, location, or gender, but there is a substantial association with overall symptom.

The data also shows that while there is no substantial area-wise difference in emotional stress symptoms, there is a gender-wise difference. In terms of emotional stress symptoms; girls outperformed boys. College, area and gender wise no difference was found with total stress symptoms. All of the students are in a moderate level of stress, and no one is found to be in a higher level.

The relationship between physiological symptoms and adjustment types was investigated, and it was discovered that, with the exception of social adjustment, all other adjustment types have a substantial relationship. There is no correlation between physiological symptoms and trait anxiety; however there is a high correlation between physiological symptoms and personality type. Behavioral symptoms are the second sort of symptom. After the investigation, it was discovered that behavioural stress symptom levels are highly skewed, making association analysis with other features impossible. Emotional stress symptoms are the third sort of stress symptom. Except for social adjustment, there is a high positive correlation between emotional stress symptoms and categories of adjustment, such as home, health, and personal/emotional adjustment. There is sufficient statistical data to show that there is a link between trait anxiety and emotional stress symptoms. There is a strong link between personality type and emotional stress symptoms. Students with personality Type 'A' had more emotional stress symptoms, according to the study.

Table 2: Association between attribute over all stress symptoms and other attributes which are significant

Attribute 1	Attribute 2	Chi square value	Pearson correlation	Conclusion
Overall Stress Symptoms Score	Home Adjustment	NA	0.37	Moderate strength relationship
	Health Adjustment	NA	0.53	High strength relationship
	Social Adjustment	NA	0.14	No relationship
	Personal and Emotional Adjustment	NA	0.59	High strength relationship
	Trait Anxiety	NA	0.31	Moderate strength inverse relationship
	Personality Type	NA	0.43	High strength inverse relationship

Thus, the findings revealed that an increase in any sort or overall stress symptoms had a negative impact on personal/emotional adjustment.

The assumption is that if the overall stress level is higher, it will inversely affect adjustment. The above data shows that correlation with home adjustment is moderate strength at 0.37 Pearson correlation value. This attribute is strongly related with health and personal and emotional adjustment. The Pearson correlation values are 0.53 and 0.59 respectively. Moderate strength inverse relationship is found between overall stress symptoms and trait anxiety, which is 0.31. As mentioned earlier, in overall symptoms physiological, behavioral and emotional symptoms are considered. Among these three, students reported low physiological symptoms. Thus, moderate inverse kind of relation is found in the present study. For personality type attribute, Pearson correlation value of 0.43 is found which shows higher strength inverse relationship. It means that students who showed overall stress symptoms less were from personality Type B. As discussed earlier, personality Type A is significantly associated with high stress symptoms.

Except for social adjustment, there is a high positive correlation between emotional stress symptoms and categories of adjustment. There is sufficient statistical data to show that there is a link between trait anxiety and emotional stress symptoms. There is a strong link between personality type and emotional stress symptoms. Students with personality Type A had more emotional stress symptoms, according to the study.

Table 3: Summary table of correlation(r) between stress scores adjustment, anxiety, and personality type

Pearson's Correlation Coefficients and strength of correlation for adjustment, anxiety, and personality type			
Type of stress	Correlation with Health Adjustment Score	Correlation with Personal/emotional Adjustment Score	Correlation with Personality Type Score
Physiological stress symptoms score	-0.47 Moderate Negative	No correlation	No correlation
Behavioral stress symptoms score	No correlation	-0.48 Moderate Negative	No correlation
Emotional stress symptoms score	-0.45 Moderate Negative	-0.57 Moderate Negative	0.34 Moderate Positive
Overall stress symptoms score	-0.53 Moderate Negative	-0.59 Moderate Negative	0.43 Moderate Positive

From the above table, it can be seen that the relatively stronger correlations exist between overall stress symptoms and health adjustment. As far as physiological stress symptoms and health adjustment are concerned the correlation is -0.47 which is moderately negative. Same kind of result is found with the emotional stress symptoms and with overall stress symptoms. The correlation between emotional stress symptoms and health adjustment is -0.45 and between overall stress symptoms and health adjustment it is -0.53.

The second type of adjustment is personal/emotional. The above data explains correlations of it with different attributes. The results express that there is no relationship with physiological stress. As the sample of the study is young students physiological stress symptoms' level is found low. Thus the effect of physiological stress symptoms could not be observed. The next type of adjustment is personal/emotional. The effort was to find out how much it is correlated with behavioral, emotional and overall stress symptoms. Results explain that the correlation between personal/emotional adjustment and behavioral, emotional and overall stress symptoms is moderately

negative. The correlation values are -0.48 for behavioral stress symptoms, -0.57 for emotional stress symptoms and -0.59for overall stress symptoms. The results go with assumptions. When any person has behavioral and emotional symptoms at the higher side he may face problems of personal/emotional adjustment.

The third attribute is personality type of students. As per the theory people belong to personality Type A are impatient, aggressive and ambitious. These and similar kind of traits may develop higher stress symptoms. As a result, the findings show a moderately favourable relationship between emotional stress symptoms and student personality types. The correlation value is 0.34. The correlation between overall stress symptoms and personality type is 0.43, which is moderately positive. These results also support that personality Type A people are stress prone.

Table 4: Distribution of respondents according to the personality type and adjustment

	Home adjustment scores			
Personality type	Good	Average	Unsatisfactory	Chi square
Type A	22	137	78	18.7 **
	9.3%	57.8%	32.9%	
Type B	83	232	88	
	20.6%	57.6%	21.8%	
	Health adjustment scores			
Type A	14	129	94	32.82**
	5.9%	54.4%	39.7%	
Type B	67	250	86	
	16.6%	62.0%	21.3%	
	Social adjustment scores			
Type A	187	50		10.36 **
	78.9%	21.1%		
Type B	270	133		
	67.0%	33.0%		
	Personal /emotional adjustment			45.65 **
Type A	17	59	161	
	7.2%	24.9%	67.9%	
Type B	81	156	166	
	20.1%	38.7%	41.2%	

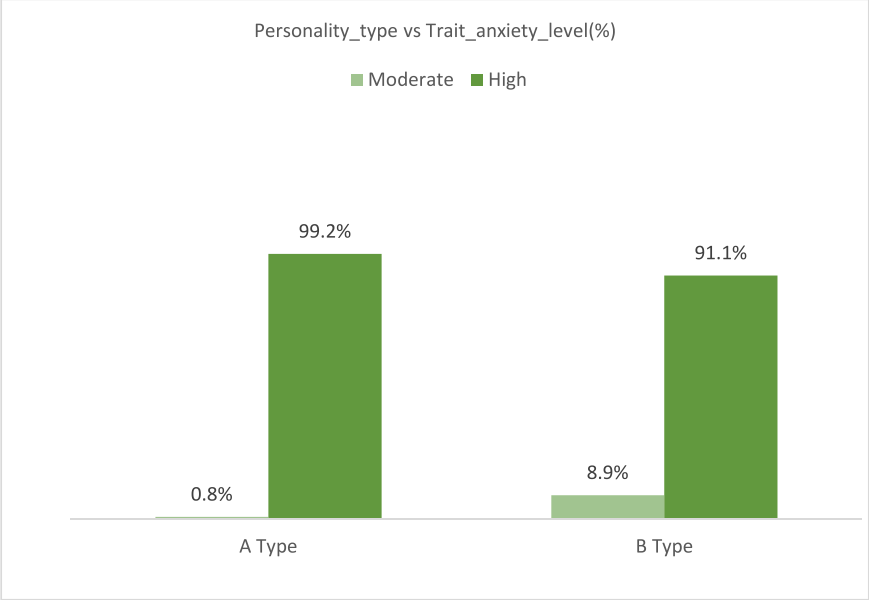
According to the findings, there is a strong link between personality type and trait anxiety. The evidence indicates a link between personality type and home adjustment, with B Type personalities being more likely to do so. According to the analysis, there is a moderate level of inverse connection, which suggests that students with personality Type B have a better health adjustment.

There is a link between personality type and amount of social adjustment. The results reveal that students with personality Type A have a better social adjustment. The findings also suggest a link between personality type and personal/emotional adjustment level. An inverse association of moderate strength is found which means that personality Type B students tend to have better personal/emotional adjustment. Personality Type B people tend to remain emotionally stable. Common qualities help them to maintain harmonious relationship with people as well as with surrounding around.

The above table explains about the personality type and Trait anxiety score. It clearly conveys that the tendency for both personality Type A and B about trait scores is the same. Students who belong to a personality Type A are 99.1% who scored high on trait scores and only 0.9% students scored moderate for the same. Whereas 91.1% personality Type B students scored high and 8.9% students scored moderate. Thus students belonging to personality Type A have more percentage for high level trait anxiety

Table 5: Personality type and Trait Anxiety Scores

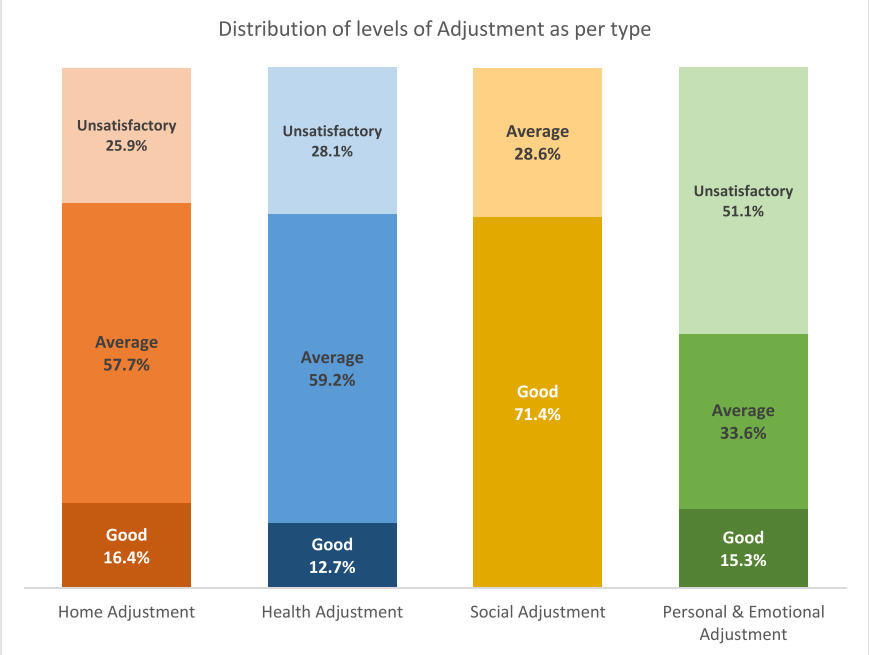
Trait Anxiety Scores			
Trait anxiety score	Moderate	High	Total
Personality type A	2	235	237
	0.8%	99.2%	100.0%
Personality type B	36	367	403
	8.9%	91.1%	100.0%
Total	38	602	640
	5.9%	94.1%	100.0%



as compared to personality Type B students. The difference is 8%. Thus results support the theoretical assumption.

Table 6: Distribution of adjustment levels given by the respondent

	Good	Average	Unsatisfactory	Total
Home Adjustment	105	369	166	640
	16.4%	57.7%	25.9%	100.0%
Health Adjustment	81	379	180	640
	12.7%	59.2%	28.1%	100.0%
Social Adjustment	457	183	0	640
	71.4%	28.6%	0.0%	100.0%
Personal &Emotional Adjustment	98	215	327	640
	15.3%	33.6%	51.1%	100.0%



In the present research study, four types of adjustment are measured, namely home, health, social and personal/emotional. Table 7 describes the respondents' levels of adjustment. The results clearly reveal that the distribution of good, average and unsatisfactory levels were similar for Home and Health Adjustment. For home adjustment, 57.7% students and for health adjustment, 59.2% of students reported a good level of adjustment. These values are the highest among the three levels.

The percentage of students who reported an unsatisfactory level of adjustment for home adjustment is 25.9 and for health adjustment, it is 28.1. Only 16.4% students reported a good level of home adjustment and 12.7% students had a good health adjustment. The trend differs for social adjustment and personal/emotional adjustment. A good level of social adjustment is reported by 74.1% students and an average level of adjustment is reported by 28.9% students. For personal/emotional adjustment, more than half the students that is 51.1% students had an unsatisfactory level of adjustment and 36.6 % students reported an average level of adjustment and only 15.3% students had a good level of adjustment. Thus, a majority of

Table no 7 Summary of associations with stress symptoms, personality type and trait anxiety

Adjustment type	Chi-Square with Physiological Stress Symptom	Chi-Square with Emotional Stress Symptom	Chi-Square with Personality Type	Chi-Square with Trait Anxiety
Home	Significant 14.7* *d.f.* 4	Significant 26.55** *d.f.* 2	Significant 18.7** *d.f.*2	Not Significant 2.91 *d.f.* 1
Health	Significant 43.5** *d.f.* 4	Significant 53.27** *d.f.* 2	Significant 32.82** *d.f.* 2	Not Significant 2.91 *d.f.* 1
Social	Not Significant 2.94 *d.f.*2	Not Significant 0 *d.f.* 1	Significant 10.36 **d.f.* 1	Significant 9.1 **d.f.*1
Personal/Emotional	Significant 46.85 ***d.f.* 4	Significant 71.23 ** *d.f.*2	Significant 45.65** *d.f.* 2	Significant 11.27 **d.f.*1

students had better social adjustment levels than other types of adjustment and half of the students did not show a satisfactory level for personal and emotional adjustments.

The above table explains associations among the adjustment types and stress symptoms, types of personality and trait anxiety. If a student has a good or average adjustment level, it is assumed he/she has a less stress symptom and less trait anxiety. Firstly, the association between home adjustment and physiological symptoms is considered which is found significant. Further, the detailed analysis suggests that physiological stress symptoms level can help to predict the level of home adjustment but only up to a certain level. The association between home adjustment and emotional stress symptoms is found highly significant. The students who reported good home adjustment scored low in emotional stress symptoms. Home adjustment and personality type are also found associated very strongly. It is believed that students who belong to B personality type have a better home adjustment than A personality type. The significant association mentioned above supports this assumption. The last attribute of trait anxiety is not found significantly associated with home adjustment as well with health adjustment. The next factor is health adjustment. The association of health adjustment with physiological and emotional stress symptoms is found very strongly significant. This

association reveals that students who have a good health adjustment have shown low physiological and emotional stress symptoms. Another association found strongly significant is between health adjustment and personality type. Those students who experienced good health adjustment, most of them belong to personality Type B more than personality Type A.

For the social adjustment attribute, the results are different. The Chi-square values of 2.94 for physiological stress symptoms and 0 for emotional stress symptoms clearly show that the association is not significant. Personality Type and trait anxiety have a significant association. The value is observed significant for the association between social adjustment and personality type. Personality Type B students are better in social adjustment than personality Type A students. The Chi square value shows a significant association between social adjustment and trait anxiety. Students having good social adjustment are low in trait anxiety.

The results for the last factor that is personal/emotional adjustment are different than earlier results. This attribute is very highly significant with both physiological and emotional stress symptoms. The Chi square value for physiological stress symptoms is $\chi 2$ = 46.85 d.f. 4 N= 640. Students who reported good personal/emotional adjustments are low in physiological symptoms. The same results are found for emotional stress symptoms too. The value $\chi 2$ = 71.23 d.f.2 N= 640 indicates a very strong association with emotional stress symptoms. It means that students who have a good level of personal/emotional adjustment experienced low emotional stress symptoms. In the analysis, another strong association is found between personal/emotional adjustment and personality type. Most of the students having a good level of adjustment belong to personality Type B which is less stress prone. The strong association can be observed by the value $\chi 2$ = 45.65 d.f. 2 N= 640. Personal/emotional adjustment and trait anxiety are moderately associated. It is found that students having a satisfactory level of adjustment have low trait anxiety. The value $\chi 2$ =11.27 d.f.1 N= 640 is evident for the association between these factors. The types of adjustment studied in the current research are interrelated. Thus, the association and relationship among these types were studied.

Conclusion-

In this study, two hypotheses were developed and tested. A distinctive aspect of this study was determining the personality types of students. The first hypothesis is that personality types and adjustment levels are unrelated. The findings clearly

demonstrate a substantial link between personality type and home, health, and personal/emotional adjustment. The majority of students who had a successful health adjustment belonged to personality Type B rather than personality Type A. It is also true that B personality types acclimatize better at home than A personality types. The majority of students who had a successful health adjustment belonged to personality Type B rather than personality Type A. Pupils with personality Type A have a better social adjustment than those with personality Type B. As a result of this research, it was discovered that personality type and adjustment are linked.

The second hypothesis is that personality types and anxiety levels are unrelated. Only two students, or 0.8 percent, of the 234 personality Type A students expressed moderate anxiety, while the remaining 232 students, or 99.2%, reported severe trait anxiety. The findings show that there is sufficient statistical evidence to support a robust link between personality type and trait anxiety. In this study, it was discovered that personality type and trait anxiety are not mutually exclusive.

Limitations of the Study

1. Currently, only engineering colleges are covered in the research.
2. The current research is open solely to first-year engineering students.
3. The research is limited to four colleges.

Recommendations

The significance of counseling services is recognized by many educational institutions. Students could use those resources for help. Based on the researcher's knowledge and the conclusions of the current study, the researcher suggests that every institute undertake some sensible precautions rather than attempting to solve the problems. Controlling COVID-19 immunization is indicated as a potent method, and instead of waiting for students to experience stress symptoms or psychological difficulties, they should be provided with necessary psychological inputs. Engineering students, in particular, should be given guidance on scope, preparation, good study habits, and time management. They should also provide guidelines on how to acclimatise to the new surroundings. These strategies will assist pupils to adjust with new situations and to lower their stress levels. It will be more effective to arrange teacher training programs. They will be able to use this training to educate pupils about mental health and various methods for keeping mental balance. As a result, teachers will be

more equipped to empathize with their students and act as a bridge between students and counselors.

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Devolution Regime and Panchayats in Odisha; An Overview

Chandra Shekhar Jena

1.1 Introduction

Devolution is the core value of decentralization. It has been linked with the empowerment of people and revival of local governments at grassroots level. In order that administration be brought to the doorstep of people and made accountable and responsive and that people participate in the programme implementation it has been advocated by all that devolution of powers to panchayats is indispensable. The need for devolution has been a matter of serious discourse for more than two decades in view of the significant role played by the panchayats in the rural development and its implementation. Even though it has been mandated to the states to work upon schemes of devolution to panchayats, the states including Odisha have failed to respond to the essentiality of such a workable proposition. It is on the issue of fiscal decentralization that most of the states including Odisha have been found wanting. Devolution presupposes a beneficial and interactive relationship between governments at various levels. The arrangement is one of reciprocity in democratic and good governance permeating every level of decentralized governance structure. Hence devolution is implicit in our project of democratic decentralization, i.e. the 73rd CAA.

1.2 73rd Amendment and the Devolution Regime.

Article 243G of the 73rd CAA has empowered State Governments to provide requisite powers and functions to the Panchayati Raj institutions. So that they can (a) function as institutions of local self government and (b) adopt plan and implement schemes for economic development and social justice including those 29 subjects enlisted in the Eleventh Schedule of the Constitution. So the 73rd CAA not only revived the PRIs but gave these bodies

a constitutional sanction with adequate provision for functions, functionaries and funds.

It is quite clear and certain that devolution encompasses the dimensions of functions, functionaries and funds with a built-in reciprocity among the three so as to realize the ideals of democratic decentralization but in the early years following 73rd Amendment, there was a very lukewarm attitude among the states as well as the Centre to implement the devolution regime seriously and sincerely, even though there was the recognition that these institutions of local governance would further the goals of democracy and development in Indian villages. Attempts were initiated to improve the situation.

During 2004, the Central Government embarked on a series of round table conferences with State governments to discuss each and every issue pertaining to the 73rd Amendment. The very first round table, held in July 2004, pertained to 'Effective Devolution of Functions'. The relevant resolutions which were the outcome of the joint exercise, stated that the essential step was the identification of activities related to the devolved functions; that, to the extent possible, there should be no overlapping; and, the principle of subsidiarity must guide this exercise. States were called upon to complete activity mapping within the fiscal 2004-05. Most importantly, the resolution called upon the State governments to ensure a measure of "irrevocability of devolved functions by routing devolution through legislative measures, or alternatively providing a strong legislative framework for devolution through executive orders".

The resolutions similarly covered effective devolution of functionaries in consonance with activity mapping of functions and also re-conceiving the (District Rural Development Agency) DRDAs. Resolutions pertaining to finances called for the preparation of a road-map by end of fiscal 2005-06 based on activity mapping, provision of progressively larger untied grants from the Planning Commission to PRIs, setting a timeframe for submission of State Finance Commission Reports, and action on these recommendations/ATRs. The resolutions also called for steps to encourage panchayats to raise their own resources. Finally, it called for certain specific steps for empowerment of Gram Sabhas as contemplated under Article 243 A.

The National Finance Commissions are mandated to recommend transfer of funds to the local bodies and the amount allocated as such has been increasing. Successive Finance Commissions have provided more funds to the states for distribution

among PRIs. The funds allocated by the Finance Commissions are as follows:

a. Tenth Finance Commission (1995-2000) -Rs 4380.83 crore.

b. Eleventh Finance Commission (2000-2005) –Rs 8,000.00 crore.

c. Twelfth Finance Commission (2005-2010) – Rs 20,000.00 crore.

d. Thirteenth Finance Commission (2010-2015)-Rs 63,050.00 crore.

e. Fourteenth Finance Commission (2915-2020)-Rs 2,00,292.20 crore.

f. Fifteenth Finance Commission (2020-2025)–Rs 2,97,555.00 crore.

However, according to a document of basic statistics on PRIs released by the Ministry of Panchayati Raj in 2019, the gap between the amount allocated as Finance Commission grants and the amount actually released has been growing. In 2015-16, the release percentage was 99.47. This slid to 96.57 per cent in 2016-17, plunging to 8.20 per cent the next year and plummeting to 74.09 per cent in 2018-19. In contrast in 2013-14, the release per centage had exceeded 100 to touch 106.63 per cent.

The performance of the panchayats depends on the extent of powers and resources devolved to them. As 'local government' is a State subject, The MoPR has been advocating to the states for increased devolution of powers to the panchayats.

1.3 The Devolution Index – Assessing Devolution across States.

In the overall functioning of the Panchayatiraj as institutions of decentralized governance devolution has been recognized as very much critical and crucial for its success. But the devolution regime across the states has not been uniform and as such it is imperative to assess the devolution. A brief reference has been made to the steps and the study initiated and sponsored by the Government, The Ministry of Panchayat Raj (MoPR) had during its inception organized a series of Roundtables of Ministers in charge of Panchayats in various States. In the 5th roundtable held at Srinagar in 28-29 Oct. 2004, it was agreed upon to undertake the preparation of a Devolution Index (DI). It was subsequent to this that the MoPR decided to put in place an accountability framework, which ranks States and provides incentives in accordance with their performance as measured on the Devolution Index computed by an independent institution.

For three years i.e., 2006-2007, 2007-2008 and 2008- 2009, the National Council of Applied Economic Research (NCAER) developed the

Devolution Index (DI). For the next four years i.e., 2009-10, 2010-11, 2011-12, and 2012-13, the Indian Institute of Public Administration (IIPA) was entrusted to carry out the assessment. Initially, the index used the 3Fs framework i.e., functions, finances, and functionaries. In 2008, another dimension viz., framework, was also included to assess mandatory provisions of the Constitution. From 2010-11, an incremental devolution index was also introduced along with the overall devolution index. Further, in 2012-13, two more pillars of performance of states have been added i.e., 'capacity building of panchayats' and 'accountability of panchayats', expanding the scope of the devolution index, to a 'Panchayat Strengthening Index'. The MoPR entrusted the preparation of DI for 2014-15 to the Tata Institute of Social Sciences (TISS). During the consultations it was felt that it would be fitting to look for illustrative evidence based ranking of the status of devolution in the country focussing on the ground situation in a few panchayats in each tier across various States to figure out what is the extent of powers they actually exercise. This was subsequently reviewed by the Ministry and it was decided to firm up the approach further. The Devolution study 2015-16 is a continuation of the study in 2014-15. The present analysis in this Chapter briefly notes down the overall observations of TISS team on devolution regime being put in place in Indian states following 73rd Amendment Act.

The Study examined the devolution on the basis of cumulative devolution index and normal index. The Cumulative Devolution Index includes:

(a) **Operational core of decentralization** that includes transfer of functions, functionaries, and finances and (iv) Autonomy of PRIs; and

(b) **Support systems for devolution,** that includes (i) Capacity Building (ii) Operationalising Constitutional Mechanisms (iii) Systems for accountability and transparency.

The component 'Transfer of Functions' is computed based on the percentage of detailed activities under each of the constitutionally assigned functions actually undertaken by the PRIs. The component 'Transfer of Functionaries' is computed based on two sets of indicators viz., (i) Number of sanctioned own functionaries in PRIs per thousand population and (ii) Actual availability of functionaries determined by the percentage of filled up positions currently out of the total sanctioned positions. The component 'Transfer of Finances' is reckoned based on four sets of indicators viz., per capita SFC fund available, per capita tied fund available, per capita tax mobilised and per capita non-tax mobilised.

The ranking of States based on the dimension '**support systems for devolution**' is based on three components viz., Capacity Building; Operationalising Constitutional mechanisms; Systems for accountability and transparency. Capacity building is evaluated based on the total number of Elected Representative (ER) days in the State per panchayat. The component Operationalising Constitutional Mechanisms consists of four sets of indicators viz., (i) Percentage of SFC's constituted in time out of the maximum possible. (ii) Percentage of recommendations of SFC on resource mobilisation accepted. (iii) Percentage of DPC's functioned (iv) Percentage of Districts where integrated district plans are prepared. The component systems of accountability and transparency include two sets of indicators viz., (i) Percentage of panchayat services notified out of the maximum number of services notified across all States. (ii) Average percentage of the governance and transparency indicators. The governance indicators include mostly the frequency of meetings, recording proceedings, grievance redress and the infrastructure. Transparency indicators are: proportion of panchayats actually audited out of the total and proportion of panchayats where social audit was done.

The **normal cumulative devolution index** was developed by TISS in 2015.The index is based on the dimensions/ components, viz., devolution of functions; devolution of functionaries; devolution of finances; and infrastructure, governance and transparency. The ranking of States on the devolution of functions is based on two sets of indicators. The first set of indicators tries to capture the detailed activities under each function transferred to the PRIs. The second set of indicators is the institutions transferred to PRIs. Devolution of functionaries was based on two indicators viz., the number of functionaries at the disposal of PRIs and the composition of the functionaries. The first indicator measures the actual number of functionaries including both own functionaries and transferred, available at the panchayat. The second component covers the composition of the functionaries based on their categorisation as Professional, Technical, Administrative and Ministerial. The ratio of the sum of professional and technical functionaries out of the total was considered as an indicator to assess the role of the functionaries in the development and welfare functions of the PRIs. The third component deals with the devolution of finances to PRIs. It measures the quantum of funds that the panchayat spends autonomously. Two indicators available from the state level data for ranking States on the devolution of finances viz., per capita share of NFC award in PRI receipts and per capita share of SFC award in PRI receipts have

been used. For calculating the per capita figures, the last census has been used. In the component- infrastructure, governance and transparency, the infrastructure available with the PRIs, and mechanisms for governance and transparency in their functioning are assessed.

1.3.1 Observations Based on Tiss Report:

Operational Core of Decentralization: The dimension 'Operational core of decentralization' pertains to the steps taken up by the state government in carving out a working niche for the functioning of local governments and for achieving their ultimate objectives of rural development through multilevel planning.

Transfer of functions: The general picture that emerges is that most of the core development functions such as agriculture and allied sectors, animal husbandry, fisheries, education, health, drinking water, women and child development, poverty alleviation, public distribution and welfare of scheduled castes and scheduled tribes are by and large transferred to panchayat raj institutions throughout the country. The report has not ascertained in how many of the states the local governments exercise exclusive jurisdiction of their own and what are the constraints they are facing in trying to do so.

Transfer of functionaries: It is reported that the transfer of functionaries remains non-uniform and the extent of exclusive domain local governments have been able to exercise is not evident. So there is no comment on adequacy of the staff. What is worth mentioning is that in States like Kerala, where the PRIs have drawn out their operational niche clearly, the pressure on performance has set in and inadequacies in human resources (qualitative as well as quantitative) is being raised as a point of concern. At the other extreme the average manpower at the GP in States like Uttar Pradesh and Bihar are 1/6th of the national average and this is a major point of concern. It is evident that unless this anomaly is addressed, establishing and retaining a legitimate space for panchayat raj institutions in these states would be extremely difficult.

Devolution of Finances: The real strength in terms of autonomy, effectiveness and efficiency of PRIs as independent local governments lies with the devolution of funds to fulfil the functional responsibilities assigned to them. In India, the notable fact is that the fiscal decentralization is unambiguously asymmetrical towards lower levels of governance structures. The 73rd CAA has enlarged the functional domain of the Central Finance Commission by requiring it to recommend measures to supplement

resources of the PRIs through states' efforts. The window for normative formula based grants / share of taxes has been over-shadowed by the discretionary window of "grant-in-aid for public purpose" by Centrally Sponsored and State Sponsored schemes involving parastatals and parallel structures bypassing local governments. Over-emphasis on discretionary transfers results in local governments neglecting their core local government functions in their rush to perform agency functions. Instead of this, strengthening systems for collecting local revenue and improving governance and delivery of local services which would in the longer run create stronger local governments where citizens demand better services and value of their money, would be more appropriate

PRIs' own sources of revenue: Variety of tax and non-tax resources have been devolved to various tiers of panchayats. Property tax, land revenue, tolls, tax on profession, tax on advertisement and octroi are likely to be the major contributors in the own source revenue. These together contribute to around 8 per cent of the overall receipts in PRIs across all states. A large number of sources of revenue for which powers are assigned to local government are not collected. It is widely felt that even for the sources for which collections are organised, collection efficiencies are poor.

The poor performance of PRIs in generating own revenue as above has been attributed to a number of factors, which are listed below:

I. Recommendations of different State Finance Commissions to expand the own source domain of PRIs have not been accepted by some governments. (In certain cases the existing tax assignments have been abolished by the legislature).

ii. The rates of own sources are not periodically reviewed and revised.

iii. Quite often there is no floor rate and only an upper limit is prescribed which effects revenue mobilisation.

iv. Reluctance of PRIs to levy taxes, poor administrative capability, out dated tax estimation system, lack of action against defaulters, unprofessional staff and electoral politics serve as a dis-incentives to mobilisation of resources.

v. Non-assignment of productive local assets to panchayat and enabling routes for leasing and lending of common resources.

vi. Inadequacies or non-existence of systems for sharing income from mining of minor minerals

vii. Inadequate mechanisms for levying service charges/ user

charges on properties of State Government and Union Government.

The relative importance of own sources of revenue varies from state to state. GPs in various states have been given substantive powers for collecting own revenue whereas DPs and BPs have much lower revenue collection powers.

At Gram Panchayat level, per capita tax collection is the highest in Maharashtra followed by Kerala, Tamil Nādu, Andhra Pradesh and Telangana In Block Panchayat, Maharashtra, Telangana and Gujarat and in District Panchayat, Maharashtra, Uttarakhand, Haryana and Telangana are toppers. In non-tax collection Haryana tops the list, in GP, followed by Andhra Pradesh. In BP Gujarat and in DP, Maharashtra lead the table. Since the proceeds from internal resources contribute an abysmally small amount to the Panchayats' resources in most of the States, the PRIs are very strongly dependent on the State and Central Governments in the form of shared taxes and grants. The state taxes are shared according to the State Finance Commission (SFC) recommendations.

So far as the dimension **'Support systems for devolution'** is concerned, it refers to the steps undertaken by the state government in creating autonomous independent constitutional authorities and other assistance mechanisms for transparent accountable and efficient functioning of local governments. In 'capacity building', Kerala stands out top at the GP level followed by Haryana and Maharashtra. An analysis of the status of acceptance of important recommendation of SFC with financial implications shows that Kerala is the only state where all SFC recommendations have been accepted without changes; Assam and Uttarakhand are among the next best followed by Punjab. The national average is only 0.31 and only a handful of states like Andhra Pradesh, Chhattisgarh, **Odisha**, Rajasthan and West Bengal have accepted more than 50% of the recommendations with financial implications without changes. Similarly in case of the functioning of the District Planning Committee, the Report mentioned, nine states have reported that DPC is not functional, including Kerala, Madhya Pradesh, Goa, Jammu and Kashmir. 15 states reported negative performance whereas 12 states have maintained that these were in the process in all the districts.

According to the Report, the better performing states in terms of devolution of functions are Karnataka, Kerala and Rajasthan. In transfer of functionaries the better performers are Kerala, Maharashtra and Madhya Pradesh. In finances Kerala,

Karnataka, Tamil Nādu are among the lead performers. In terms of infrastructure, governance and transparency, Karnataka, Kerala, Maharashtra, Tamil Nādu and Sikkim are the top performers

With regard to implementation of PESA and its provision for mandatory powers to Gram Sabha, the Report findings are as follows. 'Not all the states have aligned the state's Acts fully with PESA for managing community resources. In Odisha, the competence of the Grama Sasan under section 5(6) of the Orissa Gram Panchayat Act is qualified by the clause 'consistent with the relevant laws in force and in harmony with basic tenets of the constitution'. The unclear procedures to be followed for safeguarding and preserving traditions and customs of the Tribals in state Act(s) are also present in almost all Fifth Schedule states. Regarding identification and selection of beneficiaries, in Madhya Pradesh, Chhattisgarh and Jharkhand the decision of Gram Sabha is subject to rules or order issued by the state government and again this function is applicable in both scheduled and non-scheduled areas. In case of Odisha, there is no clarity in functional domains and roles of the three levels of the Panchayats. The issuance of certificate for utilisation of funds in Andhra Pradesh and Himachal Pradesh are exemplary as it not only makes the Gram Panchayat accountable to the Gram Sabha but also to every government authority/department. Another interesting feature is found in case of Odisha in PESA areas, where the Gram Sabha has the final authority to adopt its own budget'.

In the **index of devolution in practice**, the indicators chosen by the Team are: actual control of panchayats over transferred institutions, functions, functionaries, financial autonomy and utilization of development funds and the status of infrastructure and administrative systems in place. Kerala stands out as the top performing State even in this index. Maharashtra, Gujarat, Sikkim and West Bengal occupy the top positions following Kerala. Goa, Arunachal Pradesh, Manipur and Assam are among the low performing States. Some States such as Himachal Pradesh, Bihar, Gujarat, Jharkhand, West Bengal, Uttar Pradesh and Rajasthan that have performed poorly or moderately poor in the DPo index have improved their performance in DPr index. On the other extreme, some moderate to good performing States in DPo, such as Goa, Tamil Nādu, Haryana, **Odisha**, Uttarakhand, Andhra Pradesh and Assam show moderate to poor performance in the DPr index. There is a fall in the DPr rankings of these States in some of the components. This might reflect actual problems of panchayat administration in these States.

Comparison of rankings across 3-tiers

The TISS Report (2016) has made comparative assessment of devolution across the tiers of the states. Though it is a comprehensive analysis, here the important observations are focussed for the relevance of our study.

Index of Devolution in Policy: Kerala ranks top in devolution to the Gram Panchayat level, followed by Karnataka, Tamil Nādu, Maharashtra and West Bengal. At the District Panchayat level, Kerala ranks at the top with Karnataka, Maharashtra, Telangana and Tamil Nādu.

Index of Devolution in Practice: Jharkhand, Chhattisgarh, Gujarat are the states where devolution in GP is far behind the DP rank. At the other extreme Tamil Nādu, Sikkim, Himachal Pradesh and Odisha are the states where the GP level is better than the DP level.

Adjusted Index: The dimensions of the adjusted index are computed by taking the arithmetic mean of the respective indices of the devolution in policy and the devolution in practice. In the adjusted index also, Kerala remains at the top. Karnataka is ranked second followed by Maharashtra, Tamil Nādu and West Bengal. At the other extreme Arunachal Pradesh is at the bottom with Goa, Manipur, Punjab and Jammu and Kashmir being the low performers in order. The States which improve their performance in the adjusted index in comparison with the policy index are Bihar, Uttar Pradesh, Jammu and Kashmir, Rajasthan and Jharkhand. The States which lose out on their performance in the adjusted index in comparison with Policy index are **Odisha**, Goa, Assam, Telangana and Tamil Nādu.

Three composite indices have been constructed to assess the status of effective devolution. The improved index is based on a model with a strong conceptual foundation. The index is richer empirically and captures nuances of the devolution in the states much sharper. The normal index has been fine-tuned based on the field reality in small sample of PRIs. Kerala is the top performer in both the indices. Tamil Nādu, Maharashtra and Karnataka are among the better performers. Jammu and Kashmir, Manipur, Punjab are among the lower performers in both the indices. Comparison of the improved index and normal index, Kerala is the top performer in both indices. Arunachal Pradesh, **Odisha**, Chhattisgarh, Goa, Uttarakhand, Himachal Pradesh and Assam etc. have better position in the improved index. On the other extreme, states like Jharkhand, Tripura, West Bengal lose out on the improved index against their normal index positions.

As per the Report for 2014-15, Kerala tops the list on all the indices of the study. Apart from the 3Fs, the study

also looked at IGT (Infrastructure, Governance & Transparency). Kerala topped the overall Devolution in Policy (DPo) rankings. Kerala was found as the front runner in all the parameters except funds. Karnataka was the best in transferring adequate funds to the PRIs. Karnataka came second and Maharashtra came third. While Sikkim was found doing well in transferring functions, it ranked low on other parameters.

1.4 Devolution to Panchayats in Odisha

The Government of Odisha passed enabling acts in pursuance of the 73rd Amendment Act, as analysed in the previous chapters. These acts have been significant in making a great beginning in the devolution of powers to the panchayats. The first elections as per the new regime were held in 1997 and subsequently elections have been held after every 5 years.

1.4.1 Dimension of Functional Devolution

Following the amended acts, the Government of Odisha have entrusted to the three level of panchayats powers and functions in respect of 21 matters out of 29 listed in the Eleventh Schedule of the Constitution. Suitable instructions were issued to the Departments concerned vide Order No. 6886/PS dated 4.7.2003, for accountability at the appropriate level and devolution of functions and functionaries of various Departments to Panchayati Raj Institutions. During the visit of Union Minister of Panchayati Raj to Odisha in October, 2005, Activity Map for 21 activities of 9 Departments was released and Notification No. I-PS-1/05- 8430/PR dated 25th October, 2005 was issued by the Government. Subsequently, individual Departments have issued orders in October/November, 2005 operationalising the Activity Mapping.

1.4.2 Dimension of Devolution of Functionaries

Detailed order regarding devolution of functionaries to the Panchayati Raj Institutions was issued vide order No. 6886/PS dated 4.7.2003. The following important decisions have been taken in this regard:

i. District level officers, Block level officers and Village level functionaries of the 11 Departments are placed at the disposal of PRIs for implementation of the subjects/schemes transferred to the PRIs although they continue as employees of the respective Departments.

ii. The aforesaid functionaries of different Departments are required to attend the meetings of the local bodies at respective levels. They shall place plan and schemes for

Table- 1.1
The Departments and the activities devolved

Sl. No	Name of the Department	Activities devolved
1	Agriculture	Kharif and Rabi programme, Soil conservation, Horticulture and water shed activities
2	Food, Supplies & Consumer Welfare	Public Distribution System
3	Health & Family Welfare	Health care including Hospitals, Primary Health Centres and Dispensaries, Maternal & Child Health Centres(MCH),
4	Women & Child Development	Socio-economic development of women, Integrated Child Development, Welfare of disabled, Adoption of children, Welfare of the Aged
5	. Water Resources	Minor Irrigation, Water management
6	School & Mass Education	Expansion and development of educational facilities, establishment and maintenance of hostels and other welfare measures, Adult and Non-formal education, Total Literacy campaign
7	Fisheries & Animal Resources	Development of Livestock, Veterinary Services, Feedings & Fodder, Dairy development, Inland fisheries, Marine fisheries, Marketing processing infrastructure and Welfare measures
8	Co-operation	Agricultural Credit and Risk Management
9	Panchayati Raj	Regeneration of Minor Forest Produce species, Training, MFP collection, Processing and marketing charges, Rural Housing including Indira Awas Yojana, Rural Water Supply, Roads, culverts and bridges, waterways, Non-conventional energy, Poverty Alleviation programmes, Wage employment programmes, Markets and Fairs
10	SC & ST Development	Eradication of un-touchability, curbing atrocities against SCs/STs, Educational development and Economic development

discussion and approval in the meeting of the respective level of PRIs.

iii. The heads of each level of PRIs can supervise the functioning of Government functionaries at respective level. They can call for information and report from time to time. They can submit proposal for appropriate level about indiscipline, irregularities and other shortcomings.

iv. Heads of each level of PRIs have been delegated with the power to sanction Casual leave as Head of Office/Institution of 11 Departments working at the respective level. Each Grama Panchayat has got one Secretary who is appointed by the Grama Panchayat. Government has also provided one Executive Officer to each Grama Panchayat by way of deployment of Village Level Worker and Village Agriculture Worker. Each Panchayat Samiti has a BDO as the Executive Officer. This post has now been upgraded and Jr. Class I officers of Orissa Administrative Service have been posted as BDOs, Extension Officers, VLWs, ministerial staff, Computer Operator and other staff working under its control.

In addition to above staff, Extension Officers such as Welfare Extension Officer, Co-operative Extension Officer, and ACEO, Sub-Inspector of Schools (Block Education Officer), Inspector of Civil Supplies and Auditors also work in the Block and they are deployed by the respective Administrative Departments.

1.4.3 Dimension of Financial Devolution

The sources of revenue including the taxation powers of the panchayats and the operation of Gram Panchayat Fund, Panchayat Samiti Fund and Zilla Parishad Fund have already been explained in the previous chapter.

The Panchayati Raj Institutions are getting funds directly in respect of subjects where activity mapping has been done. However, effective devolution of funds has not taken place, as the Panchayat Sector has not yet been created in the State Budget. The Schemes functioning in the PR Department are divided into four parts as follows:

- Non-Plan Schemes
- State Plan Schemes
- Centrally Sponsored Plan Schemes
- Central Plan Schemes

The Non-Plan Schemes are mainly towards salary and grant components. There are only two CSP Schemes i.e., for SIRD and Extension Training Programmes for imparting trainings to Representatives of PRIs. The Schemes

under State Plan are mainly for development of rural poor, unemployed youth and accommodation to poor people through Rural Housing Programme.

District Sector/ Panchayat window in the budget:

There is no district sector / Panchayat window in its budget. It is contemplated that the respective may consider a portion of their allocation of about 35 percent of the budget provision to the District Sectors and Planning & Co-ordination Department may create Panchayat Sectors in the State Budget. The respective Departments dealing with devolved functions may also take steps for matching transfer of funds to PRIs.

In Odisha there has been problems with regard to transfer of funds from government sources in view of several channels and presence of DRDAs and ITDAs. It is also noted that the spirit of the 73rd CAA has not been adhered to assignment of revenue powers from states to these local bodies. It is found that revenue of panchayats is very low and below national average.

Institutionalization of State Finance Commission:

According to the provisions of 73rd CAA, State Finance Commissions (SFCs) are institutionalized. The SFCs are being constituted in Odisha every five years to recommend transfer of funds and such measures as to strengthen the local bodies with a view of making self-governance effective. The Government of Odisha has been constituting the Finance Commissions every five years and some of the recommendations used to be accepted. The most recent SFC submitting its recommendations is the Fifth SFC. The important recommendations are:

a. The Commission has recommended the devolution amount earmarked for PRIs and ULBs to be untied in nature.

b. The Commission has recommended that 3% of the net own tax revenue during the period 2020-25 is to be devolved and distributed between PRIs and ULBs in the ratio of 75:25.

c. The inter-se distribution of devolution among GPs, PSs and ZPs is in the ratio of 70:20:10 respectively

d. Since Entry Tax, Advertisement Tax and Entertainment Tax have been subsumed under GST, the Commission has recommended 7.46 per cent of net State GST (SGST) revenue to be assigned to the local bodies in lieu of such taxes during the award period.

e. Total transfer of funds recommended is as under:

Table-1.2
Total Transfer to Local Bodies recommended for the period 2020-25
(From State Resources) (Rs. in crore)

Heads	2020-21	2921-22	2022-23	2023-24	2024-25	2020-2025
I. DEVOLUTION						
PRIs	915.09	915.09	915.09	915.09	915.09	4575.45
ULBs	305.05	305.05	305.05	305.05	305.05	1525.25
Total	1220.14	1220.14	1220.14	1220.14	1220.14	6100.70
II. ASSIGNMENT OF TAXES						
PRIs	759.55	797.07	837.00	879.48	924.66	4197.76
ULBs	664.89	716.05	685.27	745.94	812.03	3624.18
Total	1424.44	1513.12	1522.27	1625.42	1736.69	7821.94
III. GRANT-IN-AID						
PRIs	978.99	1018.99	1018.99	1018.99	1018.99	5054.95
ULBs	348.81	361.31	361.31	361.31	361.31	1794.05
Total	1327.80	1380.30	1380.30	1380.30	1380.30	6849.00
Grand Total	3972.38	4113.56	4122.71	4225.86	4337.13	20771.64

It is to be mentioned that 5th SFC has recommended inter se devolution of funds among three tiers of PRIs in the manner of 70:20:10 respectively for GP, PS and ZP. During 4th SFC it was in the order of 70:25:05. But the Government has suggested for inter se allocation devolution funds of 5th SFC among the three tiers of PRIs in the order of 60:30:10 and out of 30 per cent allocated to Panchayat Samitis, 50 per cent will be tied up for drinking water, sanitation, solid waste management etc. and rest 50 per cent will be untied fund to be utilised for providing basic services like communication, improvement of secondary educational institutions and health care institutions like CHCs and PHCs. However, the total amount of transfer to PRIs as recommended by the Commission shall remain unchanged.

1.5 Conclusion

While political decentralization has been commendable in most of the states, including Odisha, fiscal decentralization is still far from being a reality. Further it is found that devolution has been incomplete and apparently cosmetic insofar as it is confined to some subjects only, not

activities. It sounds ironical when visualised in the background of a strong regional party exercising political power for about two decade and believing in empowerment of people. It is incumbent upon the government to exhibit visionary zeal to work upon much needed actions in the direction of PRI empowerment.

The Fourteenth and Fifteenth Finance Commissions mark significant step towards greater fiscal decentralization, but the devolution process has not benefitted the lowest level of governance structures in most of the states. A large part of the funds allocated are being apportioned by state governments.

On the basis of the above analysis, it can be concluded that Odisha's performance relating to devolution to PRIs has been moderate or just above average on an inter-state comparison. In some respects, it conforms to the mandated provisions of the 73rd Amendment. Conformity acts have been enacted in respect of all tiers of PRIs and the PESA. State Election Commission has been established and regular elections have been conducted under its supervision. SFCs have been constituted and their recommendations obtained. As per the Study of the TISS, more than 50 per cent of the recommendations have been accepted by the Government. The District Planning Committees are found to be functional and found to be satisfactory. Infrastructure and governance systems in panchayats have reasonably improved. The performance in sub-indices of infrastructure and governance systems is highly satisfactory. However, the position in respect of autonomy standards, it is not so and as such there is an imperative necessity to improve a lot by empowering the PRIs.

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Sustainable Green and Social Marketing Enterprises: Framing Strategies to Support Inclusive Value Chains for Poverty Alleviation

K. S. Niranjan

Abstract

Inclusive business models have been initially defined by the United Nations Development Programme (UNDP). The "extended resource-based theory" which includes the unproductive resource notion. Inclusive enterprises predominantly employ people who are excluded from the workplace. The suggested definition of the social enterprises with inclusive business model for green marketing is extended to any form of organization fighting against social exclusion. This paper covers such Social enterprises that have adopted inclusive green and social marketing for society and environment friendly products and services. Varied secondary data sources, including published reports from different Indian farmers' producer companies, have been referred.

The results indicate that progressive corporates should consider inclusive marketing business model as part of their market development strategy, because if income at the bottom of the pyramid grows it translates to still higher business growth for the companies. Inclusive green and social marketing also assists in empowering the poor and weaker sections of the society.

Keywords- Social enterprises, Inclusive business model, environment friendly products marketing, farmers' producers companies.

1. Introduction

Emergence of Social Enterprises & Green Marketing

Indian rural sector is an important contributor to the GDP of the nation and hence lack of development in villages could affect development in India. Social enterprises having business models with green marketing are playing an important role in the

growth of the rural sector. Inclusive green marketing system is a self-motivated space, which integrates resources, roles, relationships, rules and results in format under which the private and public players collaborate, coordinate and compete in the process of production, distribution and consumption of goods and services.

From the perspective of green economy and sustainable development of social enterprises, the inclusion of the people below poverty line or particularly small farmers and artisans, while not an "act of charity" or "Corporate Social Responsibility", is required because such inclusion is profitable for all including the producers themselves. The behaviour and performance of these participants is affected by other factors, decisions, and by the rules, incentives and the physical environment. Inclusive market systems are the ones that engage and benefit from a range of players including the poor, women, youth, minorities and/or other marginalized groups who are often excluded or even exploited by traditional marketing systems.

In inclusive value chain and marketing systems, such players are in a position to acquire access to the opportunities, skills and resources to upgrade, and the capabilities to engage with and influence these systems to reap the benefits that arise from the upgrading process.

Green and Societal Marketing

Green marketing is a management process that anticipates and satisfies the needs of consumers, earning a reasonable profit and sustainable management. It is based on conventional management, consumer demand, corporate economic interes ts and social interests united together to achieve environmental protection and social responsibility. The concept of green marketing requires enterprises to protect the environment as the guiding ideology of business. It requires enterprises to carry out the principle of combining their own interests in business, consumer interests and environmental interests.

Society and enterprises are aware of the growing environmental concerns of consumers and the resulting need for clean, pollution-free products. Hence, efforts are being made in finding, creating and selecting market opportunities through series of rational marketing tools to meet the consumer and social ecological environment development needs and thus also achieve sustainable development process.

Changing consumer behaviour towards green products

Change is a very natural phenomenon of nature and same is applicable for the humans. Change in consumer behaviour may take place on account of several reasons such as

change in income, life-style and many more but it is also seen that there are certain changes that take place in consumer buying attitudes that are based on the knowledge, awareness of environmental and social concerns resulting in purchase choices in favour of green and ecological products and services that transform lives. The societal marketing concept suggests that companies should make marketing decisions based not just on the consumers' wants or the company's requirements but also on the society's long-term interests.

II. Literature Review:

Some major environmental issues facing our planet are growing population, climate change, loss of biodiversity, the phosphorus and nitrogen cycle, water, pollution, ozone layer depletion, ocean acidification, over fishing and deforestation (Planet earth herald). Rapid growth in the economy which always works like an indicator of a successful development of a nation is among the major causes of environmental loss (kaza J, Blais B (2013).Various committees, NGOs and teams have been formed to control the consequences of the environment damage and are also showing positive results (21.Jia-nan C (2012).

Study of Malcolm Harper, John Belt and Rajeev Roy (2015), reviews and discusses the theoretical foundations of value chains in developing countries which capture value within a market network of producers, suppliers and consumers. There is consensus among scholars that, value chain intervention can enable the poor to participate in the markets (Jones 2011). This is achieved through facilitating better functioning of markets by increasing flow of information and knowledge to the small producers and empowering them to sell a more stable and high value product mix. Producer-driven models such as cooperatives and farmer-owned businesses have had a mixed record of providing members with economic benefits.

The first concept is that small scale institutional innovations focused on reducing inefficiencies in the value chain are more effective than macro trade and price- related policies. These initiatives can be far removed from the realities and needs of business. Among the entrepreneurial requirement, market linkage has been an important factor of success. It has helped entrepreneurs to remain in the business.

D. Kumara Charyulu, Subho Biswas (2010) have explored major issues in organic farming. SWOT analysis of organic farming is conducted to articulate, refine, and redefine policy perspective and schemes. The study looks into underlying issues and conceptual framework to examine the capacity utilization and efficiency of

production units sanctioned under NABARD and NCDC.

III. Objectives of the Study:

1- To understand social enterprise model with green marketing formats

2- To understand different strategies followed by select social enterprises for green marketing.

3- To explore the untapped opportunities in social enterprises model and understanding the challenges ahead.

Research Methodology

The paper is based on secondary data like published report from diverse Indian farmers' cooperative players. Five case studies included in the paper have been analysed based on their inclusive value chain and marketing.

IV. Case Studies on Green Marketing and Inclusive Value Chains:

1. **MAHANAND DAIRY:** Mahanand dairy is run by MRSDMM (Maharashtra Rajya Sahakari Dudh Mahasangh Maryadit) and is composed of various District/Taluka milk unions established to implement the operation flood program in the state of Maharashtra. The main purpose of the MRSDMM is to procure milk from the members' milk union at remunerative rates and distribute the same to the customers at very reasonable rates. Mahananda dairy plays a very important role and is working as a link between milk producers and the consumer. It also provides support for the economic development and up-liftmen of the farmers and the rural areas. MRSDMM (Maharashtra Rajya Sahakari Dudh Mahasangh Maryadit) was established on 09 th June 1967. At present, it has 85 members unions with more than 24000 primary milk societies and 25 lakhs milk producers which include approximately 27000 women members. Mahanand dairy has various plants across Maharashtra in cities like Mumbai, Pune, Latur, Nagpur, Chalisgaon and Vashi. It has a milk procurement system spread over Maharashtra and producing and is marketing liquid milk and other value milk products. Currently, Mahanand is distributing around 3 lakhs litres of milk per day in Mumbai. MRSDMM offers varieties of milk and milk based products to their customers such as Tetra pack milk, Paneer, Bahar Lassi, Curd, Ghee, Masala Chhaas and Shrikhand.

Business philosophy of Mahananda

- To procure milk from member milk unions at remunerative rates.

- To sell milk to consumers at reasonable rates thereby building sales as well as trust in the brand.
- To build bridge between the milk producers and consumers and provide consumers with multiple options in milk based products.
- Improving the prospects of milk producers in rural areas.

2. MIRCHI AND MIME:

It is one of the trendy dining restaurants serving the modern Indian Cuisine; it is the first of a kind restaurant in India where food is served exclusively by speech and hearing impaired service staff. The restaurant and kitchen team tries to offer seasonal and classical dishes served across India with the intention of providing high level of satisfaction to their esteemed customers and to earn their positive responses.

Mr. Prashant Issar and Anuj Shah are the promoters of this business. In the year 2015, along with a few friends as investors the business was initiated. Promoters are the graduates from the Henley Business School also the founder of Square Meals Private Limited. Mr. Issar is not new to the hospitality industry and has almost 20 years of the experience, wherein Mr. Shah came on new in this project.

This entrepreneur-investor team which believes in promoting social entrepreneurship built up the idea and took up the business plan to provide a respectful, sustainable, employment facility for around 500 individuals who are speech and hearing impaired through the chain of restaurants across India. Mirchi and Mime of Mumbai has almost 40 staff members of which 27 people are hearing and speech impaired.

Mirchi and Mime has set an example by offering employment opportunities to persons with disability (PwD). Mirchi and Mime is creating new wave in the society by creating inclusive work environment for PwD.

Business Philosophy of Mirchi and Mime:

- Promoters believe in generating wealth for both the society and the individual and building entrepreneurship based on idea of social good.
- It extends respectful and sustainable employment opportunities for PwD.
- It empowers PwD through exhaustive training programme consisting of training in English, life skills, and etiquettes of customer service.
- The staff members are trained to provide service with the help of sign language.

3. GREENWAY APPLIANCES:

Greenway appliances is a social enterprise which delivers a high and immediate impact engineering solution to consumers worldwide. It believes that well-designed products can bring big benefits for individual users, families, and communities. The company provides a blend between modern technology and user-centric co-creation to make high-performance appliances which may solve the critical needs of the users. Greenway appliances have fully integrated operations which cover designing, manufacturing, and marketing along with distribution and customer service. Along with Greenway smart stove, they also offer Greenway jumbo stove, little sun solar and water purifier.

Greenway was established in the year 2011 by Mr Ankit Mathur, Ms Neha Juneja, and Mr Shoeb Kazi. Over the years Greenway has grown and inducted experienced professionals spanning engineering, sales and manufacturing. At present Greenway has a partner network comprising around 2000 entrepreneurial individuals.

The traditional stoves have been replaced with the Greenway stoves which have created impact across the world. Traditional stoves create major health issues to customers as using them is equal to smoking 20 cigarettes. Also, Greenway makes significant contribution to reduce environmental damage and climate change. The traditional stove requires ample amount of fuel generally firewood, for which trees have to be cut down damaging the flora and fauna. The emission which comes out of a traditional stove is a contribution to climate change. The smoke which is emitted by the traditional stove is termed as Household Air Pollution and is a big health risks faced by humans. This smoke mix covers more than 30 chemicals contributing to the death of large numbers of humans. Alongside are other factors, such as a large portion of the population still cannot use modern fuels such as electricity and cooking gas due to affordability and availability. Greenway has invented modern technology stove through which it has reduced the overall fuel consumption by 65% and also smoke has reduced by 70%. In addition to this the air-regulator reduces toxic gases such CO and PM, significantly.

Business Philosophy of Greenway:

- Mission of Greenway is serving consumers in developing countries with high quality appropriate products.

- It believes in delivering a high and immediate impact engineering solution to consumers worldwide.
- It believes that well-designed products can bring big benefits for individual users, families, and communities.
- The company provides a blend between modern technology and user-centric co-creation to make high-performance appliances which may solve the critical needs of the users.

4. GREEN SOULS:

They enrich the communities by practising, teaching and promoting urban organic farming. The food garden and community farm are located inside the TATA Memorial Hospital Campus at Kharghar, Navi Mumbai. The main purpose of this community farming is to provide organic / chemical-free foods to children and other patients of the hospitals.

Green souls established in the year 2012 when Manasvini Tyagi, Sabita Rajendran, and Julius Rego and their group came together with the mission to convert unused land into a sustainable organic food garden. The land which was inside the campus was unfit for growing organic vegetables but over the years tonnes of the leaf, branches, weeds, coconuts shells from surrounding areas were composited to make nutrient-rich soil.

Currently, more than 50 varieties of vegetables, herbs and fruits and medical plants are grown in this farm. Along with this, different species of butterflies and birds are making the farm their home. The organic vegetables which grow in this farm are distributed to cancer patients and their family members. They also conduct various kinds of the workshops in different societies and schools. Green Souls helps the people in organic kitchen gardening. The entity also offers workshops that give information and all needed practical skills to set up one's own food garden and get fresh, home-grown organic harvest. Along with this they also provide the training session and demonstrate how a kitchen garden can flourish without relying on purchased soil.

Business philosophy of Green Souls:

- Teaching and promoting urban organic farming and kitchen gardening.
- Sharing the knowledge on sustainable practices.
- Promoting natural framing based on permaculture principles.

5. ARMMAN:

ARMMAN is a non-profit working to create cost-effective, scalable, systemic solutions to improve access of pregnant women and mothers to preventive information and services along with training health workers to reduce maternal and child mortality/morbidity.

- 90 % of maternal deaths can be avoided if women get the right kind of information.
- Accredited social health workers, Auxiliary Nurses Midwives and workers of Anganwadi in a geographical area provide the primary health care services to people; they have a common objective of ensuring health and wellbeing of the community in they serve.
- Through the HIV testing during the period of antenatal care, counseling to the HIV positive pregnant women is provided to ensure proper medication compliance through pregnancy and breastfeeding to prevent the vertical transmission of disease from mother to child.

V. Conclusion:

Growing environmental and social concerns of consumers are resulting in promotion of clean, pollution-free products as well as life changing services. Efforts are being made by several social entrepreneurs in finding, creating and selecting market opportunities through series of rational marketing tools to meet the consumer concerns related to ecological, environmental and social issues. This trend, in the long run, is a hope for development based on sustainable production and services process.

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An Invitation

The Local Government Quarterly invites contributions in the form of articles and research papers from its readers and well-wishers.

Contributions may be e-mailed to us in digital form as a Word file.

Articles could normally be between 3000 and 4000 words, though we do not wish to limit the size. As we print in black and white, tables, charts, graphs, images, etc. need to be compatible. We reserve the right to edit for sense, style, space, etc.

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Issues and Challenges of CSR Activities in India

Ankit Gandhi

"A company should have in its DNA, a sense to work for the welfare of the community. CSR is an extension of individual sense of social responsibility. Active participation in CSR projects is important for a company"

-Ratan Tata

The concept of Corporate Social Responsibility has gained prominence in all dimensions. The present societal marketing concepts of companies are constantly evolving and have given rise to this new concept of CSR. Many of the leading corporations across the world had realized the importance of being associated with socially relevant causes as a means of discharging their responsibilities to society and promoting their businesses too. It stems from the desire to do good and get satisfaction in return as well as discharge societal obligation of business. As an engine for social progress, CSR helps companies discharge their responsibilities as global citizens and local neighbours in a fast-changing world. (WBC)

For Indian businesses CSR can be a source of opportunity, innovation, and competitive advantage while at the same time providing the opportunity to actively contribute to sustainable development. Organizations in India have been quite active in taking up CSR initiatives and integrating them in their business processes. It has become progressively appreciated in the Indian corporate setting because organizations have recognized that besides growing their businesses, it is also important to shape responsible and supportive relationships with the community at large.

India has a long and rich history of corporate compassion and business participation in social causes which has been based on strongly deep-rooted cultural civilizations of humanity, and business ethics. Mahatma Gandhi put

forth the concept of 'trusteeship' whereby companies had an involvement in social well-being and the capitalist had a right to accrue and uphold wealth and use it to benefit society. After Independence phase that is 1947 onwards, it was seen that the humanitarian ground was marked by sensitive professional involvement in social prosperity and reform. In the post-liberalisation period that is in 1990s, globalization had an influence on business. In this competitive business environment, Indian corporates expanded their CSR activities and adopted measures to address the social and environmental issues in the country. Since 2000, India has seen further momentum in CSR activities with more and more companies coming forward and integrating social responsibility with their core businesses.

Corporate Social Responsibility (CSR) is a concept whereby companies integrate social, environmental and health concerns in their business strategy (policy) and operations and in their interactions with stakeholders on a voluntary basis. The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time (Carroll, 1979).

In general sense social responsibility is seen as the deposition of organizations to exhibit a 'missionary' attitude to the society or environment in which they operate. Today, CSR in India has gone beyond merely 'charity and donations' and is approached in a more organized fashion. It has become an integral part of the corporate strategy (Das Gupta 2010).

During the last decade we have witnessed development of CSR within companies which has started focusing on strategic interventions working towards nation building. Many corporates have started concentrating on need based interventions which include public health, education, livelihoods protection, water conservation and management and protection of natural resources.

Phases of Corporate Social Responsibility

India has one of the richest traditions of CSR. CSR has gone through many phases in India. The history of CSR in India has four phases which run parallel to India's historical development and has resulted in different approaches. However the phases are not static and the features of each phase may overlap other phases.

- ***First phase*** - charity and philanthropy were the main drivers of CSR.
- ***Second phase*** - during the Independence movement, there

was increased stress on Indian industrialists to demonstrate their dedication towards the progress of the society.

- ***Third phase of CSR (1960–80)*** – developed in the context of the "mixed economy". It led to enactment of legislation regarding corporate governance, labour and environmental issues.

- ***Fourth phase (1980 until the present)*** - Indian corporates started shifting from their traditional engagement with CSR and integrated it into a sustainable business strategy.

Recent Scenario

The much-awaited Companies Bill, 2012 was passed by the upper house of Parliament on 8 August 2013 and received President's assent on 29th Aug 2013. From April 1, 2014, it has become legally binding for companies in India to be "socially responsible". Section 135 of the new Companies Act 2013, read with the CSR Rules makes it mandatory for companies, meeting certain criteria, to set aside two per cent of their net profits for undertaking and promoting socially beneficial activities and projects in India. To implement this, the Ministry of Corporate Affairs (MCA) issued the CSR Rules, 2014, to implement this legislative mandate, which came into effect on April 1, 2014.

CSR Activities as per Schedule VII

The Companies Act, 2013 ('2013 Act'), enacted on 29 August 2013 has the potential to be a historic milestone, as it aims to improve corporate governance, simplify regulations, enhance the interests of minority investors and for the first time legislates the role of whistle-blowers. The new law will replace the nearly 60-year-old Companies Act, 1956 ('1956 Act').

The 2013 Act has introduced several provisions which would change the way Indian corporates do business and one such provision is spending on Corporate Social Responsibility (CSR) activities. CSR, which has so far, largely been voluntary contribution by corporates, has now been mandated by law. Basis the CSR provisions, as laid down under the 2013 Act and the draft CSR rules made available for public comments, in this paper we bring out the key provisions, analysis and challenges relating to the compliance of these provisions for companies to consider.

The Policy recognizes that Corporate Social Responsibility is not merely compliance; it is a commitment to support initiatives that measurably improve the lives of underprivileged by one or more of the following focus areas as notified under Section 135 of the Companies Act 2013 and

Companies (Corporate Social Responsibility Policy) Rules 2014:

- Eradicating hunger, poverty & malnutrition, promoting preventive health care & sanitation & making available safe drinking water.
- Promoting education, including special education & employment enhancing vocation skills especially among children, women, elderly & the differently abled & livelihood enhancement projects.
- Promoting gender equality, empowering women, setting up homes & hostels for women & orphans, setting up old age homes, day care centers & such other facilities for senior citizens & measures for reducing inequalities faced by socially & economically backward groups.
- Reducing child mortality and improving maternal health by providing good hospital facilities and low cost medicines.
- Providing hospital and dispensary facilities with more focus on clean and good sanitation so as to combat human immunodeficiency virus, acquired immune deficiency syndrome, Malaria and other diseases.
- Ensuring environmental sustainability, ecological balance, protection of flora & fauna, animal welfare, agro forestry, conservation of natural resources & maintaining quality of soil, air & water.
- Employment enhancing vocational skills.
- Protection of national heritage, art & culture including restoration of buildings & sites of historical importance & works of art; setting up public libraries; promotion & development of traditional arts & handicrafts.
- Measures for the benefit of armed forces veterans, war widows & their dependents.
- Training to promote rural sports, nationally recognized sports, sports & Olympic sports.
- Contributions to the Prime Minister's National Relief Fund or any other fund set up by the Central Government for socio-economic development & relief & welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities & women.
- Contributions or funds provided to technology incubators located within academic institutions, which are approved by the Central Government.
- Rural development projects, etc.

- Slum area development.

The above list is illustrative, not exhaustive. Education, Water Supply including Drinking Water, Health Care organizing, Health Awareness Camps, Environment, Social Empowerment, Sports and Culture, Infrastructure Support - construction, repair, extension etc. of Auditorium, Educational Institutions, Rural Dispensaries, Community Centre, Sulabh Shauchalaya , Yatri Shed in Bus Stand, Crematorium, Development of Park, Play ground/Sports complex/Good Coaches, Old Age Home, etc. are also included in CSR activities. The 2013 Act provides that the company shall give preference to the local area and areas around it where it operates. Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socio-economic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women; and such other matters as may be prescribed.

Relevance of CSR to Corporates

It has also been found that to a growing degree companies that pay genuine attention to the principles of socially responsible behavior are also favoured by the public and preferred while making choices of goods and services.

This has given rise to the concept of CSR. The concept of CSR is now firmly rooted on the global business agenda. Some of the positive outcomes that can arise when businesses adopt a policy of social responsibility include:

Company Benefits

- Enhanced brand image and reputation;
- Increased sales and customer loyalty;
- Greater productivity and quality;
- More ability to attract and retain employees;
- Reduced regulatory oversight;
- Access to capital; Workforce diversity;
- Product safety and decreased liability

Benefits to the Community and the General Public

- Charitable contributions support community needs;
- Employee volunteer programmes;
- Corporate involvement in community education, employment and homelessness programs helps bring about improvements;
- Product safety and quality.

Environmental Benefits

- Greater material recycling
- Better product durability and functionality;
- Greater use of renewable resources;
- Integration of environmental

management tools into business plans, including life-cycle assessment and costing and environmental management standards.

Issues in CSR programme:

Some companies say that corporate social responsibility programme is facing some issues. The issues are given below:

1. **The shrinking role of government:** In the past, governments have relied on legislation and regulation to deliver social and environmental objectives in the business sector. Shrinking government resources, coupled with a distrust of regulations, has led to the exploration of voluntary and non-regulatory initiatives instead.

2. **Growing investor pressure:** Investors are changing the way they assess companies' performance, and are making decisions based on criteria that include ethical concerns.

3. **Developed consumers interest:** During a recent survey carried out by International Environics, one out of five costumers reported having either awarded or punished companies based on their perceived social performance.

4. **Lack of transparency:** Lack of transparency is one of the key issues brought forth by the survey.

5. **Demands for more disclosure:** There is a rapidly increasing demand for companies disclosure from stakeholders, including customers, employees, communities, suppliers, investors, and activist organizations.

6. **Competitive labour markets:** So as to hire and retain skilled employees, companies are being forced to reinforce working conditions.

7. **Lack of community participation in CSR activities:** There is a lack of interest on the part of common people in participating and contributing to CSR activities of companies.

8. **CSR initiatives & narrow outlook:** Government and Non-government companies generally possess a narrow outlook towards the Corporate Social Responsibility initiatives of companies, often defining CSR initiatives more donor-driven in approach.

9. **Need to build local capacities:** There is a requirement for capacity building of the local non-governmental organizations as there is serious dearth of trained and efficient organizations which can effectively contribute to the continued CSR activities initiated by companies.

10. **Branding activities:** The media has an important role to spread good stories and sensitize local public about the different corporate social responsibility initiatives of companies.

11. **Negligence of implementing CSR issues:** There is a lack of consensus amongst local agencies regarding CSR projects. This often results in duplication of activities by companies in areas of their intervention.

12. **Non-availability of well-established NGOs:** It is also reported that there is non-availability of well-established non-governmental organizations in remote and rural areas.

13. **Corporate Social Responsibility initiatives & narrow outlook of companies: Deficiency of CSR guidelines:** There are not much of well- defined statutory guidelines or policy directives to provide a definitive direction to CSR initiatives of companies.

14. **Supplier Relations**
As stakeholders are becoming increasingly interested in business affairs, many companies are taking steps to ensure that their partners conduct themselves in a socially responsible manner. Some are introducing codes of conduct for their suppliers, to ensure that other companies' policies or practices do not tarnish their reputation.

Challenges of CSR Programmes:

Lack of community participation in CSR activities:

There is a lack of interest among the general public in participating and contributing to CSR activities of companies. CSR is largely misunderstood by Indian businesses and their stakeholders. There is a view that businesses are already socially responsible, when they may not always be. The situation is further aggravated by a lack of communication between the companies involved in CSR and the general public at the grassroots.

Need for expertise and trained organizations:

Lack of expertise in organizations is another obstacle in the way of effectiveness of CSR initiatives. There is need for a larger pool of well-trained and expert NGOs that can contribute efficiently to CSR interventions. This will enhance the level of CSR initiatives in India.

Narrow awareness towards CSR initiatives:

Government and Non-government agencies, organizations, local community and society give less emphasis to CSR initiatives because of

their limited awareness about these programmes. They have narrow outlook towards CSR interventions. Therefore corporates are hesitant and wonder if they should contribute in the CSR projects.

Need for capacity building of the local non-governmental organizations:

There is a need for capacity building of the local non-governmental organisations as there is dearth of trained and efficient organisations that can effectively contribute to the ongoing CSR activities initiated by companies. This seriously impedes scaling up of CSR initiatives and subsequently limits the scope of such activities.

Issues of transparency:

Lack of transparency is one of the key issues brought forth by the survey. There is an expression by the companies that there is lack of transparency on the part of the local implementing agencies as they do not make adequate efforts to disclose information on their programmes, audit issues, impact assessment and utilisation of funds. This reported lack of transparency negatively impacts the process of trust building between companies and local communities, which is a key to the success of any CSR initiative at the local level.

Non-availability of well-organized Non-governmental Organizations:

It is also reported that there is non-availability of well-organized non-governmental organizations in remote and rural areas that can assess and identify real needs of the community and work along with companies to ensure successful implementation of CSR activities which are aimed at addressing these needs. This also builds the case for investing in local communities by way of building their capacities to undertake development projects at local levels.

Visibility factor:

The role of media in highlighting good cases of successful CSR initiatives is to be welcomed as it spreads good stories and sensitizes the local population about various ongoing CSR initiatives of companies. This apparent influence of gaining visibility and branding exercise often leads many non-governmental organizations to involve themselves in event-based programs; in the process, they often miss out on meaningful grassroots interventions.

Narrow perception towards CSR initiatives:

Non-governmental organizations and government agencies usually possess a narrow outlook towards the CSR initiatives of companies, often

defining CSR initiatives more donor-driven than local in approach. As a result, they find it hard to decide whether they should participate in such activities at all in medium and long run.

Non-availability of clear CSR guidelines:

There are no clear-cut statutory guidelines or policy directives to give a definitive direction to CSR initiatives of companies. It is found that the scale of CSR initiatives of companies depend upon their business size and profile. In other words, the bigger the company, the bigger is its CSR programme.

Lack of Consensus on Implementing CSR Issues:

There is a lack of consensus amongst local agencies regarding CSR projects. This lack of consensus often results in duplication of activities by corporate houses in areas of their intervention. This results in a competitive spirit between local implementing agencies rather than building collaborative approaches on issues. This factor limits company's abilities to undertake impact assessment of their initiatives from time to time.

Suppliers' Relations:

These days, suppliers take interest in the companies' affairs and operations. They also show interest in the companies' policies and practices related to CSR initiatives because they want to maintain reputation and status in the society and do not want to tarnish their reputation. Because of that these stakeholders have much interest in working with the organizations that are working actively in the field of CSR.

Lack of consensus between the CSR agencies:

There is absence of consensus among the organizations that organize and contribute in CSR processes. Because of this there is duplication of CSR programmes by these business houses. Rather than duplication of these programmes there should be collective efforts and consensus between these organizations for the success of CSR initiatives in India.

Changing behavior of employees and customers:

In today's competitive world, employees and customers have a tendency of changing behavior; like employees want something more beyond the salaries and customers want more beyond the goods and services. This is a big challenge for the organizations to understand these changes and therefore need to plan and implement their CSR projects in accordance with these trends.

Absence of Trained Manpower:

Lack of efficient and well-trained staff for the execution and management of CSR initiatives is also an impediment for the success of CSR initiatives in India. The organizations engaged in the CSR initiatives must take some effective steps for the training and development of staff working on their CSR initiatives.

Suggestions to overcome issues and challenges of CSR

There is a need to develop a strategic approach to CSR based on understanding of the impacts and the tipping points in resource shortage or cost increases. There is also need to enhance the CSR initiatives by Indian companies especially in the education and environment protection in rural sector. Through CSR activities it is possible to demonstrate corporate values, concern, and commitment for the improvement of the condition of those less privileged.

In this context, the following measures may be considered:

i. For the success of CSR initiatives, there is need to increase the awareness about CSR initiatives in society.

ii. There is need for collective efforts by the government, management of organisations, employees, customers, and other stakeholders including the general public to make CSR initiatives more effective.

iii. It is responsibility of government to provide clear cut guidelines, principles and directions to drive the CSR processes.

iv. There is need of comprehensive approach to CSR which addresses all aspects like child labour, health care, education, girl child, and women empowerment.

v. Government could design programmes to recognize and reward good CSR projects in order to provide motivation and encouragement to others.

vi. To increase awareness about CSR in India, the subject could be made part of curriculum in schools, colleges, and universities.

vii. Companies could attempt to create more visibility for their activities by providing information about these in public domain.

viii. It will be helpful to create a pool of well-trained and organised Non-government organisations to implement various CSR projects effectively.

CONCLUSION

Corporate Social Responsibility is regarded as an important business issue of Indian businesses irrespective of size, sector, business goal, and location of the enterprise. Indian businesses are realizing that without socio-economic development of the local communities, there can be no stability and sustainability in the business sphere. The activity of Corporate Social Responsibility by initiating social and community initiatives is to benefit the society and nation at large which is sought to be achieved through the participation of its employees and implementation partners.

CSR can play a valuable role in ensuring that the invisible hand acts, as intended, to produce the social good. In addition, it seems clear that a CSR programme can be a profitable element of corporate strategy, contributing to risk management and to the maintenance of relationships that are important to long-term success of the enterprise. Businesses are not standalone entities but have a close relationship with the environment, society and the economy in which they function. Further, the corporate and the businesses while working for the improved returns to their shareholders are also aware of their responsibilities and obligations to society at large and work to address the needs of the larger community in a just, fair and equitable manner.

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- Contributions need to be in English.

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Report Review

World Population Prospects 2022: Summary of Results

Read the report here: https://www.un.org/development/desa/pd/content/World-Population-Prospects-2022

The Department of Economic and Social Affairs (DESA) of the United Nations has put out the 2022 Edition of the World Population Prospects and presented the Summary of Results. As stated, DESA works in three main interlinked areas:

(i) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which Member States of the United Nations draw to review common problems and take stock of policy options;

(ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and

(iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities.

The Population Division of DESA which has put out this Report provides the international community with timely and accessible population data and analysis of population trends and development outcomes for all countries and areas of the world. Thus, it works to strengthen the capacity of Member States to monitor trends and to address current end emerging population issues.

The Report is the twenty-seventh edition of the compilation which is being published by the UN since 1951.

The first few pages of the Report contain acknowledgements, listing of contents, abbreviations used and importantly Key messages emerging from the Report. Among the important Key messages under various sub-heads are:

The world's population continues to grow, but the pace of growth is slowing down

- The World's population is expected to reach 8 billion on 15 November 2022. Thereafter it is projected to grow to 8.5 billion in 2030, 9.7 billion in 2050, and 10.4 in 2100. It is expected to peak in the 2080s and remain there till 2100.

- Population growth is caused in part by declining mortality, i.e., increased life expectancy at birth. It increased to 72.8 in 2019 almost 9 years higher than in 1900, and is expected to reach 77.2 in 2050.

- Global average fertility has fallen from about 5 births per woman in 1950 to 2.3 at 2021. It is projected to fall further to 2.1 by 2050.

- The trend till 2050 will be driven by past momentum which has given rise to a young population. Therefore, even significant government action is unlikely to have much effect in slowing population till 2050 and may produce results only later.

- Sustained high fertility and rapid population growth present challenges for sustainable development, as in education where high child population may hinder quality of education.

- For countries with high fertility, achieving the SDGs (especially in areas of health education and gender) could hasten fertility reduction and slow down population growth.

Rates of population growth vary significantly across countries and regions

- In 2022, the two most populous regions were both in Asia: Eastern and South Eastern Asia – 2.3 billion (29% of global population), and Central and Southern Asia – 2.1 billion (26% of global population)

  China and India with about 1.4 billion each were the most populous in these regions.

- India is projected to surpass China as the world's most populous country during 2023.

- The 46 Least Developed Countries (LDCs) are the fastest growing and many are expected to double in population between 2022 and 2050 posing challenges to the achievement of the SDGs.

Levels and patterns of fertility and mortality vary widely around the world

- Some countries, including several in sub-Saharan Africa and in Latin America and the Caribbean, continue to experience high levels of adolescent fertility, with potential adverse consequences for the health and well-being of both the young mothers and their children.

The population of older persons is increasing both in numbers and as a share of the total

- The share of those aged 65 years or above is projected to rise from 10

per cent in 2022 to 16 per cent in 2050.

- Women will outnumber men in older age groups in almost all populations.
- Countries with aging populations must put in place appropriate policies – social security, pensions, universal healthcare, etc.

A sustained drop in fertility leads to an increased concentration of the population at working ages, creating an opportunity for accelerated economic growth per capita

- Countries of sub-Saharan Africa, as well as in parts of Asia and Latin America and the Caribbean could experience the opportunity of 'Demographic Dividend'. Countries need to invest in development of human capital (health and education) to leverage this opportunity.

More and more countries have begun to experience population decline

- The populations of 61 countries or areas are projected to decrease by 1 per cent or more between 2022 and 2050, due to sustained low fertility and in some cases to emigration.

International migration is having important impacts on population trends for some countries

- Over the next few decades, migration will be the sole driver of population growth in high-income countries. By contrast, for the foreseeable future, population increase in low-income and lower-middle-income countries will continue to be driven by an excess of births over deaths.

The COVID-19 pandemic has affected all components of population change, including fertility, mortality and migration

- Global life expectancy at birth fell to 71.0 years in 2021, down from 72.8 in 2019, due mostly to the impact of the coronavirus disease (COVID-19) pandemic.
- The pandemic's impact on life expectancy has varied across regions and countries. In Central and Southern Asia and in Latin America and the Caribbean, life expectancy at birth fell by almost three years between 2019 and 2021. The combined population of Australia and New Zealand gained 1.2 years. In some countries, the pandemic has been responsible for a significant reduction in life expectancy at birth. For Bolivia (Plurinational State of), Botswana, Lebanon, Mexico, Oman and the Russian Federation, estimates of life expectancy at birth declined by more than 4 years between 2019 and 2021.

- The Pandemic restricted all forms of international mobility including migration. The magnitude of its impact on migration is difficult to ascertain due to data limitations.

Thereafter, in the Introduction pages, the Report outlines the centrality of understanding population trends and anticipating demographic changes to their development planning and for achievement of the SDGs. It states that different sets of nations must prepare development plans according to their population trends. For example, those experiencing rapid population growth need to provide schooling and healthcare to growing numbers of children as well as quality education and employment opportunities for large numbers of their youth. Countries with slowing, stalled or witnessing reversal in population growth must prepare for growing population of older persons. The introductory section further touches upon the COVID-19 Pandemic noting that 'empirical evidence of the impact of the pandemic on demographic phenomena remains incomplete due to gaps in the collection of demographic data and to time lags between data collection and dissemination'. It goes on to say that the full impact of the pandemic on national demographic trends may not be known for many years.

Importantly the introduction touches upon the relationship between population and sustainable development. It notes that this should be considered in the context of climate change and other environmental challenges that have a direct impact on sustainable development. According to the report, while the growth of the population itself may not be the direct cause of environmental damage, it may nevertheless exacerbate the problem or accelerate the timing of its emergence. It further states that the more developed countries—whose per capita consumption of material resources is generally the highest—bear the greatest responsibility for implementing strategies to decouple human economic activity from environmental degradation.

The report is in three parts. Part one describes the most likely trends in population size, growth and age structure from 1950 to 2050. Part two discusses the demographic drivers of population change namely fertility, mortality and international migration while also covering the demographic impacts of the COVID-19 pandemic. Part three provides an overview of population trends until 2100 and their potential implications.

Part I

The beginning of Part I tracks the trends in population growth from 1950 and makes projections for the year 2050. Here it notes that while the projection of the global population is

'inherently uncertain' and more so over time, the size of the world population in the near future is relatively certain because the size and age structure of the population over the next few decades 'are largely the result of demographic processes that have already taken place in the recent past'.

Figure I.2 depicts the Population estimates for the period 1950-2022, and projections with 95 per cent prediction intervals for 2022-2050, by region.

Among other observations, the Report notes that between 2022 and 2050, the population of sub-Saharan Africa is expected to almost double, crossing 2 billion by the late 2040s. Average fertility levels will remain close to 3 births per woman in 2050, and thus this region is projected to account for more than half of the growth of the world's population between 2022 and 2050.

Europe and Northern America, another one of the 8 SDG regions, is projected to experience population decline from late 2030s due to 'sustained low levels of fertility which has been below 2 births per woman since the mid-1970s'.

Yet another important observation is with respect to the global sex ratio. While the world has greater number of men (50.3%) in 2022, the situation is expected to reverse over a period of time with the number of women equalling that of men by 2050. The Report dwells in detail on the concept of "Demographic Dividend" and its implications for policymaking and national programmes. Here, an important observation with implications for policy makers is that the proportion of persons aged 65 or over will increase globally between 2022 and 2050. This number which is about 10 percent in 2022 will rise to nearly 12 percent in 2030 and further to 16 percent in 2050. These projections are given for each of the 8 SDG regions in Table 1.2.

This Part I contains an important section titled 'Linkages between population trends and selected Sustainable Development Goals' which provides valuable insights into the subject.

Part II

This Part tracks trends in fertility, mortality, and migration.

Globally fertility and mortality have been declining. Now, nearly two-thirds of people of the world live in regions where the fertility is below 2.1, which is the level required, with low mortality, for population to stabilize over the long term.

Subjects such as country wise / region wise fertility trends, trends in life expectancy (including trends by

sex), adolescent birth rate, are discussed in detail. There is a separate box item titled 'The impact of the COVID-19 pandemic on fertility, mortality and international migration'.

Part III

Long Range Population Projections to 2100

This part begins by sating that long range population projections are highly uncertain especially for high fertility countries. The size of the world populations is almost certain to rise over the next several decades and there is 50 percent chance that the population will stabilise or begin to decrease around 2100. The Report says there is growing uncertainty about the projections as one goes further into the future. Here the impact due to migration is most difficult to estimate. Trends and projections for each of the 8 regions are discussed and also depicted in graphs.

In later pages, projections by other institutions (Joint Research Center of the European Commission and Institute of Health Metrics and Evaluation) with different scenarios are discussed.

The Report ends with a note 'What's new in the 2022 revision?' and References.

The World Population Prospects 2022: Summary of Results is an insightful document outlining the current state of the world population, its determinants, and projections for the future by regions of the world. It will prove valuable for academicians and policy makers alike in governments and elsewhere as for those who are otherwise students of the subject all over the world.

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OBJECTIVES

The main emphasis of the Institute's work is to see that the local bodies can contribute more effectively to the development process and provide the citizens with better living conditions by meeting their aspirations in terms of required amenities, infrastructure and better environmental conditions, thus contributing to social and economic development of the society as a whole by better management of the human settlements. While these are the long-term objectives, the immediate ones are:

- To advance knowledge of the principles and practices of Local Government by conducting research and by organising training courses and programmes at various centres in India for officials and elected representatives in the local bodies.
- To strengthen and improve Local Government Institutions by improving their performance through education, orientation and bringing them together for common endeavor by organising specialised conferences, conventions and seminars.
- To make available a platform for members of local bodies and officials for exchange of views and ideas related to urban development and administration.
- To represent the views of local authorities supported by research work to the concerned higher authorities from time to time.
- To publish bibliographies, articles, books and other literature on matters of interest to local bodies.
- To publish journals, bulletins and other literature on different aspects of Local Government and on the working of Local bodies in different states.
- To undertake research studies in public administration, problems of local bodies and also in related topics of urban and environmental factors and arrange for their publication etc.
- To establish and maintain an information-cum-documentation service for local bodies.
- To undertake consultancy assignments in various areas of urban development and problems of local bodies with a view to improve and develop organisational, managerial and operational efficiency.

In view of the above, the Institute has been collaborating with the relevant government departments, Central and State, Universities, Organisations and Research Institutions. The work of the Institute covers several aspects involving a multi-disciplinary teamwork.

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