



ANALYSING THE RELATIONSHIP OF INFRASTRUCTURE GROWTH WITH HUMAN DEVELOPMENT: EVIDENCES FROM GUJARAT

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ABSTRACT

The concept of human development fundamentally pertains to the individual in the context of development, encompassing all aspects that define humanity beyond mere survival necessities like food, clothing, shelter, and health, including dignity and the capacity to engage socially without embarrassment in public settings. It is the process of expanding individuals' options. The human development approach perceives income as a means to facilitate people's development, rather than an aim in itself, in contrast to previous growth theories. Numerous studies in the sociology of development contend that there is no inherent correlation between income and human advancement. The word human development refers to both the expansion of individual choices and the degree of attained well-being. It also aids in distinctly differentiating between two aspects of human growth. One pertains to the development of human capacities, such as enhanced health or education; the other concerns the use of these acquired talents by individuals. The human development approach, unlike previous theories and models, expands the term to encompass not just fundamental necessities and income but also individual choices, emphasising what individuals require to secure their livelihoods without becoming simply recipients. Human development pertains not only to the fulfilment of fundamental needs but also to the participatory and dynamic nature of the development process.

Infrastructure serves as a metric for economic progress, diversification, and modernisation, ultimately leading to enhanced living standards. It is consistently asserted that an efficient and sufficient infrastructure is a crucial prerequisite for achieving developmental objectives.

Infrastructure constitutes the physical framework of a region that facilitates its advancement and success. The insufficiency of infrastructure is identified as the primary cause of underdevelopment. Infrastructure enhances economic growth by augmenting productivity. It is essential to examine how infrastructure services, designed to enhance individual options, are influencing personal capacities.

The interconnections between infrastructure development and human development transcend any specific profession, rendering it a more intricate and multidisciplinary topic for examination.

Keywords: Infrastructure Growth, Human Development, Economic Growth.

INTRODUCTION

The study of development has remained a subject of interest in sociology since the inception of the field. The sociology of development seeks to analyse the origins and effects of economic transformations within society. Initial theories of Marx (1867) and Weber (1904) offer insights into the emergence and assessment of capitalism. The sociological tendency to analyse the causes and effects of development has facilitated the advancement of Parsonsian functionalism, Neo-Marxist ideas, and World Systems theories. These development theories examine the interrelationship between economic growth and individual life, influenced by demographic models, migratory patterns, historical transformations, and gender roles. It consistently depicted a dialectical representation of economic growth, labour force, social institutions, and the influence of monetary value (capital). Political sociology has presented theories concerning the State's role in fostering and sustaining economic growth, the transformation of political structures in response to economic changes, and the economy's influence on the distribution of power among social groups. Conversely, economic sociology has regarded economic development as the foundational basis for evaluating these theories. The sociology of development examines practices and processes of social change by addressing challenges related to international and internal migration, political transformations, alterations in family structures, technological advancements, demographic shifts, and economic growth, alongside the production and perpetuation of inequality resulting from these changes. Consequently, it is straightforward to perceive development as a major aspect of social endeavours. There is considerable dispute on the material and non-material perceptions of development and their impact on society. Scholars with a Marxist perspective exhibit a fixation on materialist frameworks and contend that power is crucial to the support and advancement of capitalism, facilitated by influential elites who instigate changes in economic institutions for personal gain (Collins, 1986). The origins of developmental capitalism in these theories are viewed as existing inside the interstices of systems established by elites or socially powerful actors (Mann, 1994). Some scholars attribute the development of capitalism to conflicts among European mediaeval elites (Lachmann, 2003). Recent cohorts of development sociologists concentrated on the relationships among nations or international relations, examining their dynamics to demonstrate dominance over the global market linked to political objectives, as evidenced by scholars such as Wallerstein (1979), Arrighi (1994), Chase-Dunn, and Hall (2016), among others. This perception demonstrated that the success of Europe's development is directly associated with the underdevelopment of several Asian countries situated in the capitalist periphery. Another aspect of development sociology offers insights into capitalist growth, state formation, warfare, and primitive capitalism, all influenced by imperialism (Emigh, Riley, & Ahmed, 2016). Researchers examining late capitalism also present corroborative arguments by associating development with surplus value derived from the Global South and the utilisation of armed force for capital accumulation in core regions (Frank, 1967). The sociology of development is a crucial element for comprehending stratification and inequities arising from developmental dynamics. Sociology is a powerful field that comprehends inter- and

intra-national economic disparities through many indices of human well-being (Logan, Molotch, Fainstein, & Campbell, 1987; Jorgenson & Burns, 2007; Shandra & Shor, 2015). This branch of sociological research employs quantitative and qualitative methodologies to illuminate humane, geographical, ecological, climatic, and gendered disparities in patterns of inequality and power dynamics (Lobao, 2016).

Similarly, public sociology, as an emerging facet of the sociological discipline, interacts with non-academic specialists or policy makers through the application of sociological insights. It is primarily perceived as a "style" of sociology rather than a method or theory. The word acquired prominence following Michael Burawoy's presidency address at the American Sociological Association in 2004. Burawoy (2005) distinguished public sociology from professional sociology, the latter being the realm of academically trained sociologists. Public sociology addresses themes of significant public interest, encompassing discourses and debates on public policy, activism, lobbying, the objectives of social movements, and the institutional processes of civil society. This field of disciplines utilises empirical methodologies and theoretical frameworks to understand discussions not only concerning "what is" or "what has been" in society, but also "what could be." Public sociology has thus far retained a normative and political character, which is crucial for understanding the phenomena of development via the lens of public policy perception (Piven, 2007 & Burawoy, 2014). The research adheres to certain features of public sociology to provide normative empirical data regarding human development and its correlation with public policies. This chapter seeks to delineate the principal theories, perspectives, and arguments pertaining to the sociology of development and human development, together with its formulation and measuring mechanisms. The chapter succinctly delineates key aspects and arguments of development theories, in addition to providing an overview of the study and essential demographic and geographic data of Gujarat.

GROWTH VS. DEVELOPMENT

The post-World War II development discourse asserts that the idea of income has dominated the discourse since its origin (Drèze & Sen, 1999). Income was seen as the exclusive metric for human well-being. The writers criticised the measurement of national or per capita income as a flawed approach to assessing social welfare or human well-being. Likewise, some researchers have criticised the concept of GDP or GNP as a measure of human well-being, as national income takes into account (McGillivray & White, 1993).

- Only registered monetary exchanges - Inclusion of goods, commodities, or services that possess minimal or no social well-being use, such as expenditures on nuclear weapons.
- Natural resources perceived as free or undervalued justice, creativity, and leisure regarded as non-essential
- Income distribution viewed as just and justifiable

Two principal assumptions: first, economic growth "trickles down" and disseminates its advantages throughout society; second, if economic growth fails to trickle down, income disparities increase, compelling governments to intervene or regulate the market, which can be deemed inconsistent with the understanding of development (Hicks and Streeten, 1979). In both scenarios, per capita income diminishes to poverty, as neither assumption

demonstrates that a high concentration of income or extended unequal growth fosters equitable growth, nor do governments motivated by political interests exhibit indications of rectifying inequities. An index of economic performance-based groups was established based on income and assets, with the weighted significance of each group's growth requirements considered prior to formulating measures for social welfare (Ahluwalia, Duloy & Jolly, 1974). Authors utilised this indicator to identify the most disadvantaged group with the greatest need for development. This index aligned with Rawls' concept of social welfare. This measure contends that each member of society should receive equal consideration regarding income; for instance, a minimum increase of 1% will elevate the income of all groups by 1%. It clarifies that an equitable distribution of income from total earnings is the paramount determinant for societal well-being, and this measurement approach translates GDP growth into social welfare. "Individuals constitute the true wealth of a nation." The primary aim of development is to establish a conducive atmosphere that allows individuals to lead long, healthy, and creative lives. This may seem to be an elementary truth. However, it is frequently overlooked in the urgent focus on the accumulation of goods and financial assets. - Human Development Report, United Nations Development Programme, 1990.

Jean Drèze and Amartya Sen (1991) distinguished between growth-mediated and support-led government interventions and regulations. The authors assert that the growth-mediated intervention method endorses a "trickle-down" strategy, implying that enhancements in private income will establish a foundation for funding social services. In such cases, governments tend to augment GDP and the tax base. Support-led policies prioritise the provision of social services directly, such as income guarantees, income equalisation, health, and education, rather than concentrating on the enhancement of national income, irrespective of the GDP growth rate. The authors assert that there is no necessary correlation between national GDP and quality of life. Political commitment and public initiatives convert GDP development into enhanced human well-being, poverty alleviation, and reduced disparities.

DEMOGRAPHIC & ECONOMIC GROWTH PATTERN OF GUJARAT

The enhancement of human talents and wellbeing is fundamentally reliant on economic growth. Economic ecology is crucial in assessing the quality of living. Aggregate incomes bolster and augment fiscal resources, hence facilitating increased per capita expenditure on health, education, and other capability indicators. Gujarat has successfully converted its economic progress into human welfare. The per capita income of Gujarat has consistently exceeded the national average, contributing to a reduction in poverty within the state. The population of Gujarat is 60.4 million, consisting of 31.5 million males and 28.9 million females. The rural population is 34.7 million, whereas the urban population is 25.7 million. Gujarat comprises 5.97% of India's land area and 4.99% of its population. The state's decadal growth rate is 19.28%, in contrast to the all-India growth rate of 17.68%. The population density in the 2011 census is calculated to be 308 individuals per square kilometre. The rural population comprises 57.4% of the total population, while the urban population accounts for 42.6%. The population of individuals aged 10-19 years (Adolescents) declined by 1.55% in the 2011 census (19.88%) compared to the 2001 census (21.43%). The population of individuals aged 15-24 years (Youth) declined by 0.51% in the 2011 census (19.27%) compared to the 2001 census (19.78%). The population in the 15-59 age group (working age) declined by 2.63% in the 2011 census (60.19%) compared to the 2001 census (62.82%). Individuals aged 60 years and over grew by 1.01% in the 2011 census (7.92%)

compared to the 2001 census (6.91%).

According to the 2011 Population Census, Gujarat has a total of 2,476,800 workers who have worked for at least one day during the reference year. The Work Participation Rate (WPR) of Gujarat is 41.0 percent, exceeding the national average of 39.8 percent. In Census 2011, marginal workers, defined as individuals who worked for fewer than six months in the reference year, were categorised into two groups: those who worked for less than three months and those who worked for three months or more but less than six months. In Gujarat, of the total 247.7 lakh workers,

203.7 lakh are primary workers, while the rest 44.0 lakh are secondary workers. Of the 4.4 million marginal workers, 3.93 million (89.3%) were employed for 3 to 6 months, while only 470,000 (10.7%) were employed for less than 3 months in the state.

The State economy has been assessed using the Gross State Domestic Product (GSDP) at factor cost, both at constant and current prices. GSDP estimations across time indicate the magnitude and trajectory of changes in economic development levels. The sectoral composition of GSDP provides insight into the relative significance of various sectors within the economy over time, reflecting genuine structural changes and aiding in the formulation of comprehensive economic development plans.

The current base year for estimating GSDP at constant prices is 2011-12. According to the Quick Estimates, the Gross State Domestic Product (GSDP) at market prices, adjusted to constant (2011-12) prices, for the fiscal year 2014-15 is projected at Rs. 782,820 crore, compared to Rs. 726,831 crore in 2013-14, reflecting an increase of 7.7 percent for the year. The Gross State Domestic Product at market prices for the fiscal year 2014-15 is estimated at Rs. 895,202 crore, compared to Rs. 806,745 crore in 2013-14, reflecting an 11.0 percent growth for the year. In 2014-15, the contributions of the primary, secondary, and tertiary sectors to the Gross State Value Added (GSVA) of Rs. 7,94,563 crore were reported as 19.4 percent, 42.6 percent, and 38.0 percent, respectively, at current prices.

PATTERN OF FISCAL ALLOCATION FOR CAPABILITY DEVELOPMENT

Transforming economic growth into human development and poverty alleviation has consistently been a fundamental approach in state planning and policymaking. The Government of Gujarat asserts that it prioritises the development of social sectors, which directly and indirectly influence poverty reduction, by providing almost half of the budgeted budget. Between 2002 and 2007, the government allocated Rs. 18,090 crore, constituting 38% of the planned budget. From 2007 to 2012, the allocation increased to Rs. 53,830 crore, representing 42% of the planned budget. From 2012 to 2017, the government further escalated the allocation to Rs. 1,58,736 crore, approximately 46% of the planned budget (Planning Division, 2016).

Allocation of financial resources is primary ingredient to strengthen and sustain any kind of development. Since decade commitment of Gujarat towards and poverty reduction can be gauged from table-1.

TABLE 1 FINANCIAL RESOURCE ALLOCATED FOR SOCIAL SECTOR

Sector\ Year	2007-08	2008-09	2009-10	2010-2011	2011-12	2013-14	2015-16	2016-17	
Education	1070	1366	1600	1900	2599	3850	6700	6900	
Health	565	845	1132	1300	2195	3845	6594	7005	
Water Supply	1120	1549	1549	1849	1886	2700	3463	3400	
Housing	917	771	1043	1422	1490	5474	3869	3876	
Urban Development	1716	2471	2611	2900	3014	3481	8819	9260	
Social Welfare	450	612	632	811	996	1450	2094	27	
Welfare of Tribes	210	255	270	405	700	954	1500	1600	
Labour / Employment	80	127	119	260	334	891	1183	1233	
Women/ Child Welfare	197	380	800	936	1264	1300	2450	2600	

Total Allocation	6426	8376	9758	12383	14478	24345	36672	38624	
Total Planned Budget	16000	21000	23500	30000	38000	59000	79295	85558	
% allocated for Social Sector	40.16	39.89	41.52	41.28	38.10	41.26	46.25	45.14	

source: authhor's own calculation

LINKAGES OF INFRASTRUCTURE & C A P A B I L I T Y D E V E L O P M E N T I N G U J A R A T

EDUCATION

The application of the MDGs has resulted in remarkable motivation for universal access to education worldwide. Numerous nations, like Korea, Sri Lanka, and Japan, have made substantial investments to ensure universal access to education, which subsequently enhanced their human development index. In 2009, India established access to education as a basic right through the Right to Education

Act. Educational services and infrastructure have garnered the attention of policymakers. Gujarat has implemented several legislative initiatives and augmented investment in educational facilities and services over sixfold over a decade, increasing from Rs. 1,070 crore in 2007 to Rs. 6,900 crore in 2017.

Diverse mission style programs have been designed and executed vigorously to enhance enrolment and retention in schools, connect education with vocations, promote skill development, and align labour supply with market demand to generate employment and entrepreneurship.

The initiative to enhance retention and reduce dropout rates at elementary levels (Grades I - V) seems promising. The dropout rate for the elementary section has significantly declined from 22.30 percent in 1999-00 to 1.97 percent in 2014-15. The dropout rate for standard I to VII has declined from 41.48 percent in 1999-00 to 6.61 percent in 2014-15. Gujarat is a leading state in India due to its ICT infrastructure and the provision of digital learning materials to the majority of schools. More than 95% of schools have access to electricity, allowing 71.23% of rural schools and 85.66% of urban schools to utilise ICT infrastructure.

TABLE: % OF SCHOOLS HAVING ICT INFRASTRUCTURE

	RURAL AREAS	URBAN
GUJARAT	71.23	85.66
INDIA	21.1	25

The literacy rate in Gujarat increased to 79.3% in 2011 from 69.1% in 2001. The female literacy rate dramatically improved throughout the specified decade, rising from 57.8% to 70.7%. The gender gap in education diminished to 16.1 in 2011 from 21.9 in 2001 (Directorate of Economics & Statistics, 2015). This development is attributed to universal access to education, which has earned Gujarat the third rank in the

Education Development Index.

HEALTH

In Gujarat, there is a greater emphasis on medical human resources and services than on physical health infrastructure. The health infrastructure of the state functions as a facilitating element for the delivery of healthcare services. In 2015, the state had 322 community health facilities, 1,300 primary health centres, and 7,710 sub-centres, which attended to 2.23 crore outdoor patients and 1.89 lakh indoor patients (Directorate of Economics & Statistics, 2016). "In 2016, we are establishing 32 Community Health Centres, 130 Primary Health Centres, and 1,035 Sub Centres."

- Senior Officer, Planning Division. Gujarat effectively integrated education with health through initiatives such as the School Health Check-up Programme, the largest time-bound health initiative encompassing all children aged 0-18 years. The program encompassed 1,579,600 children, of whom 125,696 received referral services and 6,207 were afforded super speciality care. The "Chiranjivi Yojana," another major initiative aimed at reducing maternal and child mortality rates, has significantly enhanced the nutritional status of the impoverished (table-3). The program encompasses nutrition, gender, and pre- and post-natal care components. The accessibility of hospitals, skilled personnel, information, and emergency services has resulted in 98.2% of institutional deliveries among both impoverished and affluent populations, representing a significant achievement for us. - Senior Officer, Department of Health and Family Welfare.

TABLE 3: HEALTH INDICATORS CONTRIBUTING TO CAPABILITY DEVELOPMENT

Infant Moratality Rate	2001	2003	2005	2007	2009	2011	2013	
Gujarat	60	57	54	52	48	41	36	
India	66	60	58	55	50	44	40	
Maternal Moratlity Rate	2001-03	2004-06	2007-09	2010-12	2011-13			
Gujarat	172	160	148	122	112			
India	301	254	212	178	167			
Life Expectancy	1998-2002			2013				
Male	62.4			69.2				
female	64.4			72.5				

POWER SUPPLY

The power sector of Gujarat is highly esteemed nationwide. The state has attained complete electrification. Across all geographies, both villages and towns are experiencing a continuous supply of electricity. This significant accomplishment in "Information Education and Communication" provides guidance to new mothers for handling, managing, and caring for their newborns. Approximately 253 trucks are active, facilitating access

for the most rural populations and enhancing awareness of institutional service.

According to the India Human Development Report (IHDR) 2011, Gujarat was placed 6th among 18 main states in India. A consistent rise in fiscal allocations for healthcare over the past decade (graph-1) in Gujarat's healthcare infrastructure is noted, substantiating the assertion of enhancements in health-related human development indicators and multidimensional poverty metrics overall.

CAPABILITY DEPRIVATION AND DEVELOPMENT IN GUJARAT

The allocation of public funds reflects socio-political decisions. Historically, Gujarat has been a significant contribution to India's economic progress. The global commendation for political commitment to development and the translation of economic growth into social advancement has been significant. For decades, the state has endeavoured to enhance the quality of life through comprehensive planning and innovative policy development and action. This innovative and proactive policy action has enhanced social indicators, so contributing to advancements in human development and the alleviation of poverty.

Every individual in the State of Gujarat, regardless of gender, caste, or creed, would, Possess literacy and health; Ensure shelter and a clean environment; Access drinking water and sanitation; Obtain meaningful employment; Live without fear; own equal opportunities.

To tackle particular challenges faced by underprivileged communities and regions, the State Government has initiated "Flagship Programmes" such as the Sagarkhedu Sarvangi Vikas Yojana.

Vanbandhu Kalyan Yojana, Garib Samruddhi Yojana, and 49 Developing Talukas. Additionally, various "Mission Mode Programmes" such as Kanya Kelavani, Gunotsav, Krishi Mahotsav, Nirmal Gujarat, Skill Development, Nirogi Bal, Bal Sakha Yojana, Balbhog Yojana, Mamata Abhiyan, e-Mamta, MA, Mukhyamantri Amrutum Vatsalya Yojana, eMPOWER, Chiranjeevi Yojana, Kaushalya Vardhan Kendra, and Mukhyamantri Yuva Swavalamban Yojana are being executed to enhance the Human Development Index of the State. - Senior Officer, Planning Division.

CONCLUSION

Gujarat's developmental initiatives reveal a correlation between infrastructure enhancement and capability development, which subsequently aids in mitigating multidimensional poverty. These connections are clearly observable regarding the establishment and preservation of certain standards advocated by political dedication to sustainable capability development. The extensive infrastructure, continuous electricity supply, educational institutions, and healthcare facilities in rural regions, together with access to finance, bolstered by substantial governmental investments, have guaranteed the welfare of the populace in Gujarat. The State must concentrate on more diverse and innovative methods to tackle capability deficit. For instance, catering to the unique demands of diverse social groups, such as nomadic and indigenous tribes, who refrain from participating in educational institutions due to their cultural frameworks. Such difficulties need to be addressed more thoroughly.

Gujarat has effectively demonstrated that economic progress can be converted into human development and can partially mitigate the challenge of multi-dimensional poverty. Certainly, there is evidence and potential for broader investigation in this domain. Infrastructure-driven economic growth can exert a direct and effective influence on well-being and the enhancement of human capabilities. Infrastructure associated with social causes,

such as mortality reduction, enhanced education and literacy, employment generation, public amenities, and consistent power and water supply, facilitates the dismantling of physical, economic, and financial barriers. Investing in the development of systems or the establishment of agencies to assist disadvantaged individuals and guarantee access to services can enhance community participation. Poverty alleviation and capability enhancement can be effectively achieved by orienting economic systems towards broader societal benefits. This further enables the populace to negotiate and to gain advantages from the external world beyond their own realm. Access to diverse options, life opportunities, and competencies positions citizenship, rather than solely the state, as a responsible stakeholder in development.

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