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Household Based Human Development Index in Lakshadweep

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Abstract

Since the evolution of the human development index in 1990 there has been a vivacious debate on measurement related issues of quality of human life among the nations. It is a long-established verity that the existing HDI presents averages and thus conceals wide discrepancy and disproportion in distribution of human development in overall population and does not take into account the distribution of human development within a population subgroup. This study is intended to look in to human development scenario at household level in Lakshadweep and found that the human development scenario in Lakshadweep is not very dismal and not so stupendous and outstanding in Lakshadweep, it is more or less moderate. No household has achieved highest development in human development index and none of household lags behind in Household Human Development Index. The study bring to a close that 45% of household has achieved high level of human development, 57.5 % attained moderate level of human development and remaining 2.5 % account for low level of human development. The study also found that the gap between two extreme households in respect of human development and three dimensional indices is comparably low and inter household variation in the level of human development in Lakshadweep is very low.

Keywords: Human Development, HDI, HHDI, Lakshadweep

1. Introduction

Prominence on human development and construction of human development index has been the most important contribution of development economists to economics. The achievement of economic growth nowadays is judged in terms of its real contribution to the quality of life and concentration of all the nations has shifted from 'quantity of growth' to 'structure and quality of growth'. Human development is indispensable for economic growth and development and economic growth is essential for human development. The base of human development lies in recognizing the improvement in living standard of all persons in the society. There has been always a critical trade-off between the growth of material resources and human resources in most of the countries.

Human development is a process of enlarging people's choice, including leading long and healthy life, to be educated and to have access to resources needed for a decent living standard. In fact, human development has two sides, one is the formation of human capabilities-such as improved health, knowledge of skills and the other is to use people acquiring their capabilities for productive purposes. If the scales of human development do not finally balance the two sides, frustration may occur among people. Thus, the concept of human development includes development of human beings by considering improvement of economic, social, educational, health and cultural condition of human beings of a state.

The development economist attacked the concept of using percapita income as a measure of development by viewing its serious limitations and shortcomings. Such limitations forced to look for a novel comprehensive and wide-ranging measure that would capture the assorted dimension of human development. This has first led to the configuration of PQLI and then to the definition and construction of human development Index (HDI) under the stewardship of Mahbub-ul-Haq in 1990. It considers three imperative facets of well being i.e. life expectancy, literacy and income and has been performing as the best indicator of human wellbeing as it is accepted since 1990 when the first Human Development Report was presented by UNDP. Nowadays HDI is widely used in academia, media and in policy circles to measure and weigh progress in human development between countries and over time.

The issue of this paper has derived from the limitations of HDI to analyze the position of household in human development. The study realized that the average is a statistical tool and it doesn't have the power to demonstrate the real situation. The current HDI presents averages only and thus conceals wide disparities in distribution of human development in overall population and does not take into account the distribution of human development within a population subgroup. As Harttgen and Klasen pointed out HDI concentrates only at macro level but remains silent about household level. Anand and Sen (1992) and Ranis, Stewart and Samman (2006) pointed out several other dimensions of human well being, such as security, political participation and human rights. Hicks (1997), Foster et al (2005) and Seth (2009) were concerned about the fact that the current HDI provides averages and thus shows large variation in distribution of human development in overall population. Sagar and Najam (1998) signified that UNDP based HDI is only looks at average achievements and thus, does not take into account the distribution of human development within a country or population subgroup.

There are enormous studies focusing on HDI, its methodology and limitations. But studies on Household Level Human Development Index based on household level data is not that much available. Thus a need was felt to calculate an alternative index based on household level data which will present grass root level scenario of well being. So the objective of this study is to look into human development scenario at household level and to explore the factors affecting human development in Lakshadweep.

Lakshadweep, tiniest territory of India with a total surface area of just 32 Km² and a total population of 64429 appears as a few blurred blotches on the national atlas. It is, in fact, a sparkling diamond adorning India's southwestern frontier. It is one of the marvels left untouched by the encroaching hands of Industrialization. The white beaches, the large lagoons of spectacular beauty that wash its shores with the coral reefs, the deep blue sea-all, these are symbiotically linked with each other. It is an archipelago of twelve atolls, three reefs and five submerged banks, with a total of about thirty-nine islands and islets, of which 10 are inhabited islands. The economy of Lakshadweep depends largely on coconut cultivation, fishing, coir industry and tourism. The gross domestic product of Lakshadweep amounted to US\$ 80 million in 2010.

To the extent of our knowledge, we couldn't find any writing which investigates the human development scenario in Lakshadweep. So, it is of crucial practical importance to trace out the condition of human development in Lakshadweep. Since the population is very limited and variations in all economic indicators and economic inequality are very less, the study understand that it is better to appreciate a household based human development rather than HDI. To get a real insight of human development at household level in Island, we thus need a separate treatment and the present study has made an attempt to fill up this research gap.

2. Review of Literature

Pandey and Annapurna (2012) constructed an alternative index to calculate Household Based Human Development Index and made an attempt to calculate HHDI for region wise, religion wise and social group wise at all India level as well as all the states and union territories by taking NSSO 63rd round unit level consumption expenditure survey data. They constructed three indices to measure Life expectancy index at household level, Education index at household level and Expenditure Index at household level adopting World Health Organisation (WHO 2008) life table for the calculation of life expectancy, UNDP methodology to calculate Education Index and Per capita monthly household consumption expenditure as a proxy of income. They constructed Household level Human development index (HHDI) by taking the simple average of the three dimension indices. The major contribution of this study is that, it found expenditure index for all the states and union territories as lowest in comparison with life index and education index. As per this study, the performance of UT of Lakshadweep is better than the national averages. Lakshadweep adjudged 0.682, 0.649 and 0.456 in Life Expectancy index, Education Index and Expenditure Index respectively, while national average were only 0.677, 0.499 and 0.416

Roy and Mandal (2012) constructed a household development index to study household based human development in rural areas of Assam, Nitai Nagar village. The study found that only one per cent household has achieved high level of human development, moderate level of human development is attained by 23 per cent households while the rest 76 per cent account for low level of human development. The study also revealed that a higher amount of inter household variation in the level of human development in Nitai Nagar village and high disparity among households in the village is high in respect of asset while it is relatively low in case of health and education.

3. Data and Methodology

The study is based on a primary survey carried out in the Kadmat and Amini Island of Lakshadweep on March 2013. The study adopted the 'purposive sampling' technique and selected 90 households as sample space. The selection of the households is made by keeping in mind that they are comprised of adult and non- adult members. A pre-tested schedule was used for the purpose of data collection. Using interview method the researcher directly collected the required data from all the members of the household.

To look into our objective, the study adopted a Human Development Index for the households (HDI^H) constructed by Roy and Mandal. Human Development Index for households is a composite index that measures the average achievement in a household in three basic dimensions of human development viz. health, education and standard of living. The indicators used for measuring various dimensions of household based human development in the present study are presented in appendix table 1.

The construction of the HHDI involves the following three steps.

Step 1: First some scores will be assigned to the various indicators based on self selection approach and value judgment. The scoring procedure is shown in appendix table 2.

Step 2: Then for all the indicators/variables an index will be constructed by following the UNDP's Max-Min approach i.e.

$$\text{Variable index} = \frac{X_{ij} - X_{min}}{X_{max} - X_{min}} \quad ; 0 \leq \text{Variable Index} \leq 1$$

Where X_{ij} = Value of the jth variable for the ith household

X_{min} = Minimum value of the jth variable

X_{max} = Maximum value of the jth variable.

Once the indices are calculated, we will take the simple average of the health and asset indicators to arrive at the respective health and asset indices. However, education index will be constructed as a weighted average of educational status index for adults with two-third weight and educational status index for non-adult members of the household with one-third weight. This is done so because at field level some households may be found with major percentage of adult members. Moreover, there may be some households where children have not reached the stage of school going age yet. Under such circumstances, educational status of the adults will truly depict the picture of educational accessibility of a household. Again it can be justified on the ground that adult members with higher educational status are likely to realize the real value of education and thus are cautious to send their children to the school. It is also to be noted that all the dimensional indices will lie between 0 and 1.

Step 3: Finally the simple average of dimensional indices will be calculated, which will give us Human Development Index for households (HDI^H). Criteria for Examining the Status of Human Development for the Households is show in appendix table 3.

$$HDI^H = \frac{Health\ Index + Education\ Index + Asset\ Index}{3} ; 0 \leq HDI^H \leq 1$$

4. Results and Discussion

Human development scenario of the households in Lakshadweep islands in terms of HDI value is shown in percentage.

HHDI Value	Highest	High	Moderate	Low	lowest
In Numbers	0	32	46	2	0
In Percentage	0	45%	57%	2.5%	0

It is clearly evident from the table that human development scenario in Lakshadweep is not very dismal and not so outstanding, it is almost moderate. No household has achieved highest development in human development index and none of household lags behind in HHDI. 45 per cent household achieved high level of human development. Moderate level of human development is attained by 57.5 per cent households while the rest 2.5 per cent account for low level of human development.

5.1 Descriptive Statistics

Statistics	life expectancy	Education index	Expenditure index	HHDI
Mean	0.655	0.735625	0.59925	0.663291667
Standard Error	0.013108602	0.017524706	0.01315051	0.009661372
Median	0.63	0.755	0.59	0.676666667
Mode	0.55	0.56	0.55	0.7
Standard Deviation	0.1172469	0.156745733	0.117621739	0.086413935
Sample Variance	0.013746835	0.024569225	0.013834873	0.007467368
Kurtosis	0.49232916	-0.263641994	-0.751777189	-0.592808044
Skewness	0.931557848	-0.56813406	0.304298395	-0.187465958
Range	0.56	0.68	0.48	0.373333333
Minimum	0.44	0.32	0.4	0.466666667
Maximum	1	1	0.88	0.84

The table shows a range of descriptive statistics of various human development indices. The Values of range indicates the gap between two extreme households in respect of HDI and three dimensional indices is comparably low (0.373), but in the cases of life expectancy and education index the gap is so high. HDI with a mean value of 0.66 shows that the level of human development in Lakshadweep, on an average is somewhat moderate, so we can deduce that the Lakshadweep people enjoy a good standard of living and improved human development. The mean of educational index is high, which can be consistent with the fact of high literacy rate of Lakshadweep.

The lower values of standard deviation indicates a lower amount of inter household variation in the level of human development. The values of coefficient of variation exert that education index is more varying followed by health index and expenditure index. This reveals that the disparity among households in the island is high in respect of education while it is relatively low in the case of health and asset. The rationale of this disparity in education is that, the old generation of Lakshadweep islands is amateurish and uneducated since it is geographically an isolated area, in recent decade only the educational institution and other mission have started to function.

5.2 Correlations between Different Dimensional Indices

Health Index and Education Index	Health Index and Asset Index	Education Index and Asset Index
0.281329138	0.195966495	0.274450787

The table gives the correlation among the variables. As expected, all the indices have positive correlation. Health index, education index and asset index are positively correlated with each other and thus supporting the theory but the degree of association is not that much strong among them. Health index has a low correlation with asset index. However the correlation between education index and asset and health and education index is moderate.

5. Conclusion

The study concludes that improvement in the economic condition of the households is necessary to realize the goal of household based human development in rural areas in its truest sense. The role of the government in this regard is to create more relevant employment opportunities for the Islanders and create awareness about the necessity of small family size among them. Major Findings are

1. Human development scenario is not very dismal and not outstanding in Lakshadweep Island, it is almost moderate. No household has achieved highest development in human development index and none of household lags behind in HHDI.
2. 45 per cent household has achieved high level of human development. Moderate level of human development is attained by 57.5 per cent households while the rest 2.5 per cent account for low level of human development.
3. The gap between two extreme households in respect of HDI and three dimensional indices is comparably low (0.373), but in the cases of life expectancy and education index the gap is so high. HDI with a mean value of 0.66 shows that the level of human development in Lakshadweep, on an average is somewhat moderate
4. The Lakshadweep people enjoy a good standard of living and better human development.
5. The mean of educational index is high, which can be consistent with the fact that high literacy rate of Lakshadweep.

6. The inter-household variation in the level of human development in Lakshadweep Island is relatively low.
7. The disparity among households in the island is high in respect of education while it is relatively low in case of health and asset.
8. Health index, education index and asset index are positively correlated with each other and thus supporting the theory but the degree of association is not that strong among them. Health index has a low correlation with asset index. However the correlation between education index and asset and health and education index is moderate.

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Appendix

Table (1) Indicators for Various Dimensions of Household based Human Development

Dimensions	Indicators
Health	Access to Safe Drinking Water
	Access to Ideal Toilet Facility
	Access to Primary Health Centres
Education	Educational Status of the Adult Members of the Households
	Educational Status of the Non-Adult Members of the Households
Standard of living (Asset Holdings of the Households)	Cultivable Land (in hectare)
	Housing Condition
	Livestock
	Vehicle
	Financial Access of the Households

Table (2) Scoring Procedure Adopted in the Study

Source of Drinking Water	Score
public authority Supply Water using by boiling or filtering	4
public authority Supply Water using without boiling or filtering	3
Water from tube well/hand pump by boiling or filtering	2
Water from tube well/hand pump without boiling or filtering	1
Water from pond/well with boiled or not boiled	0

Type of Toilet	Score
Modern well equipped	3
Slab used latrine	2
Bamboo made latrine	1
In open air	0

Access to Primary Health Centres	Score
Good access	3
Average access	2
Bad access	1
No access	0

Educational Status of the Adults	Score
Post graduate or above	7
Graduate	6
HS pass	5
HSLC pass	4
High school	3
Primary pass (5 to 7)	2
Below primary level	1
Illiterate	0

Educational Status of the Non – Adults	Score
Continuing education	12
Dropout after passing SSLC	11
Dropout after class ten	10
Dropout after class nine	9
Dropout after class eight	8
Dropout after class seven	7
Dropout after class six	6
Dropout after class five	5
Dropout after class four	4
Dropout after class three	3
Dropout after class two	2
Dropout after class one	1
Illiterate	0

Type of Cultivable Land	Score
Large	5
Medium	4
Semi medium	3
Small	2
Marginal	1
No cultivable land	0

Type of House	Score
concrete	3
Semi concrete	2
Tiled	1
Semi tiled	
Thatched and scientifically not ideal for living	0

Livestock	Score
Cattle/buffalo	3
Goat/sheep	2
Hen/duck/dove	1
No livestock	0

Vehicle	Score
Bus/car/truck	5
Auto rickshaw/ power tiller	4
Two wheeler	3
Rickshaw/thela	2
Bicycle	1
No vehicle	0

Type of Financial Access	Score
Having bank/post office savings account plus other investment policies	3
Having only bank/ post office savings account	2
SHG membership	1
No formal financial access	0

Table (3) Criteria for Examining the Status of Human Development for the Households

HDI^H	Nature of Human Development
$\text{HDI}^H = 1$	Highest
$0.7 \leq \text{HDI}^H \leq 0.99$	High
$0.5 \leq \text{HDI}^H \leq 0.69$	Moderate
$0.1 \leq \text{HDI}^H \leq 0.49$	Low
$\text{HDI}^H = 0$	Lowest

Source: Developed Manash Roy and Raju Mandal