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A Study on Utilisation of Health Care Services in India – A Special Reference to Child Care

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ABSTRACT

The concept of childcare has been essential to the development of society throughout history. Other institutions, like religion, the legal system, and the modern nation-state, depend on the family system for their existence. There has always been a secular concern for the welfare of children, as it was considered as their job to carry the family into the next generation. The Lorenz curve and Gini coefficient are used to illustrate the state of inequality in the prioritisation of health care services. A Multinomial Logit Analysis was conducted to investigate the factors that influence the usage of health care services. This study reveals the positive influence of socioeconomic and educational factors on preventative medical treatment. Ion frequency was the third sign of health care prioritisation. Significant variables included family income, opinions of government hospitals, and medical expenditure priorities. The family's income is negatively correlated with hospitalisation. The public hospital enjoys an extremely positive and significant reputation. When the number of visitors to a government hospital in a backward block is positive, medical expenses are prioritised. In industrialised nations, health expenditures, family income, and mother's education are all negatively correlated. This confirms the idea that the mother's socioeconomic status and degree of education have an inverse relationship with the frequency with which people visit government hospitals. Additionally, as public impression of government hospitals improves, individuals visit government hospitals more frequently. Thus, it has been demonstrated that a family's financial resources, the mother's level of education, and an individual's impression of a government hospital all impact the decision between public and private health care.

Key Words: Health care, Child care, utilization, equity, priority of health care, developed blocks, backward blocks.

INTRODUCTION

The distinction between health and health care is crucial because health is sometimes misunderstood as a direct result of health care. Clearly, the absence of sickness is not synonymous with health. Good health endows an individual or group with the capacity to enjoy a disease-free existence and to reach their full potential. Consequently, health is best viewed as the fundamental foundation upon which an individual's sense of happiness is constructed.

A country's residents' standard of life is determined by basic requirements such as nutrition, clothing, and housing, as well as some qualitative services such as health care and education. It is self-evident that these basic needs and services cannot be produced at the same rate in a developing country like India, where the population continues to expand. Health reform has risen to prominence as a goal for both industrialised and middle-income developing countries in recent years. Health is a critical issue in developing countries, and our country's use pattern has resulted in a number of beneficial effects, including the growing popularity of indigenous non-allopathic systems of medicine and the increase of private sector involvement in this expensive tertiary care. Contrary to national health policy standards, regional disparities in health care service consumption among states' major expenditure groups, as well as rural-urban disparities, persist. Socioeconomic disparities in low birth weight and infant death are paralleled in child health care. Children from low-income families and minorities are more likely to suffer health-harming conditions such as inadequate nutrition, pollution, and improper housing. These initiatives will very certainly have a range of consequences for healthcare utilisation. Barriers related to finances, logistics, stigma, and traditional beliefs, as well as attitudes about mental health

issues and treatment. Children's mental health treatments are inadequately understood, confusing, and not based on evaluation; rather, they are based on traditional practices.

International Linkage on Child Health Care Services

Abor, Patience Aseweh, et al, (2011). The study generally suggested that most women in Ghana are undergone the necessary prenatal care visits and are also taking both doses of the tetanus toxoid vaccine as required by the The findings of the regression revealed that the mother's age, birth type, education, race, economic level, geographic area, domicile, and religious affiliation all influence the usage of maternal health services and the rate of use of prenatal services.

Arthur, Eric, (2012). The impact of wealth on the use of maternal health care in Ghana was investigated through the usage of prenatal care. Using secondary data from the 2008 Ghana Demographic and Health Survey, the findings revealed that money still has a significant impact on the adequate utilisation of prenatal care.

Singh, Aditya., et al, (2016). In developing nations, there are still a number of barriers to using maternal health services. As a result, the goal of this study is to look into the supply-side factors of maternal service use in rural India at HSCs.

Paul, Pintu., et al, (2019). In an effort to improve the utilisation of maternal health care services, policymakers and programmers have paid little attention to the age at which girls marry. Child marriage has been proven to have a negative impact on maternal health in studies. Furthermore, there are few research that investigate the link between child marriage and the utilisation of maternal health care.

Barman, Bikash., et al, (2020). The purpose of the study was to illustrate the impact of women's (15-49 years) education on the use of Maternal Health Care (MHC) services in India, as well as to identify other variables of MHC service use.

Vidler, Marianne, et al, (2016). At 144/100,000 live births, Despite being lower than the national estimates of 190-220/100,000 live births, Karnataka State continues to have the highest maternal death rates in southern India. Multiple barriers to the timely and effective utilisation of resources exist during pregnancy, labour, and postpartum.

Objectives of the Study

- To study the growth and trends in the supply side variables of health care services in India
- To measure the equalities and inequalities of health care services relevant with child care
- To analyses the health care utilization condition in the selected study area.

Research Question or Hypotheses

The hypotheses are framed under the consideration of following elements to accomplish the objectives of the present study.

- There is inequality in utilization of child health care services between social classes and the selected regions.
- Impact of income determines the priority of medical expenditure.
- Examine the awareness level of government health schemes in the selected regions.

Scope of the Study

The increased focus on core needs by many developing nation governments has inspired a number of econometric studies on the nutritional consequences of food price fluctuations. Indian healthcare is a highly competitive industry, with a huge number of private enterprises. With the exception of a few ultramodern corporate hospitals, the majority of commercial and public sector hospitals deliver subpar care. Private physicians and small clinics provide the majority of healthcare services in the private sector. With India's per capita income continuing to rise, clients expect a greater standard of service (mainly functional quality). The purpose of this research is to focus specifically on child health care utilisation among members of the social group.

Limitations of the Study

• The current study relies on primary data collected by interview, which frequently suffers from recall bias.
• This study is limited to the consumption of child health care patterns in industrialised and backward countries, the data and final implications must be extrapolated carefully.
• This study is limited to a few places, the findings may not be generalizable across the country.
• Secondary data were used sparingly in order to focus the study's attention on primary data.

• Data collection occurs predominantly during the COVID-19 period, normalisation may be minimally different from the usual period.

Data and Methodology

This study depends heavily on Primary data. Prior to the primary data collection, a pilot survey is conducted to test and refine the schedule to fit the criteria of the present study. Random stratified sampling is used to collect data on a block-by-block basis for this investigation. The technique of interviewing the head of the household was used to collect data on specific families. The structured questionnaire is used to collect information on household size, religion, community, types of homes, mother and father's level of education, types of assistance received, length of hospital stay, frequency of hospital use, medical expenditure, priority of medical expenditure, demographic factors, immunisation knowledge, reason for use or non-use of government hospital, and awareness of preventive medical care. Secondary data are from the National Sample Survey Organization (NSSO) survey on "morbidity and healthcare" and the following source:

1. Department of welfare, Ministry and Family welfare
2. National Family health survey Reports
3. Various issues of Health information of India
4. Various issues of Economic Survey
5. Various issues of World Development Report
6. Reports from Family Welfare Office (zone wise)
7. The Census of India Report

The survey contains information regarding household size, religion, level of education, priority of medical expenditures, knowledge of vaccines, awareness of medical treatment, and more. This study may estimate an association between the current rate of economic growth and the distribution of hospitalised treatment among socioeconomic groups. The parameters are relevant for evaluating the health status of children under five years old.

Design the Sample

The primary data were acquired using a random stratified sampling technique. As the native location of the researcher, the Thanjavur District is chosen in the first step for practical reasons. Due to the fact that the Thanjavur district is comprised of 14 blocks, a ranking has been devised to identify the lagging blocks. The development of Blocks was guided by the examination of the following broad criteria: Under the three major characteristics, the data necessary to construct the undeveloped blocks has been revealed.

1. Education 2. Income 3. Employment.

The last four blocks (according to the ranking) are considered undeveloped. The projected population in three blocks is around 2500 to 3000 on average, hence the estimated sample size for 5% of details obtained is 360 on average for both underdeveloped and developed blocks. This research aims to investigate both developed and backward block.

Backward Blocks	Developed Blocks
Ammapettai Block Orathanadu block Thiruvonam block Thiruvidaimarudur	Thanjavur Kumbakonam Pattukottai Peravurani

8.2 **Sample Drawn**

Backward Blocks	Developed Blocks
364 Respondents	360 Respondents

Method of Analysis

In order to study the growth of child health care services measured by using annual growth rate, compound growth rate, Log Quadratic and Multiple regression techniques. To study the utilization of health care services has been tested by the Chi-square and Anova test. Lorenz curve and Gini coefficient are used to prove the inequality condition in the utilization of health care services. Multinomial Logit Analysis has been used to determinants the utilization of health care services.

RESULTS AND DISCUSSSION

Developed and Backward Blocks in Multinomial Logistic Regression (Table 1 & 2)
Multinomial Logistic Regression on the Stage of Transporting the Child to the Hospital for Treatment
Developed Blocks
Each characteristic in Developed Blocks will be associated with five independent variables, namely, (X1) household size (X2) monthly family income (X3) mother, father, or guardian education (X4) awareness of health programmes (X5). According to the proposed regression model, location is a determining factor in determining the earliest potential child care development decision. In other words, while selecting whether or not to promptly relocate a hospital, the location is a key determining factor in compared to the other independent variables. To wait and severity are dependent variable attributes that are influenced by household size, implying that household size has an effect on the decision to "wait and severity" a child. The dependent variable for other attributes was unaffected by any of the proposed models' independent variables. We deduce that location and household size are key influencing variables in developed blocks when compared to the suggested model.

Backward Blocks
Backward Blocks takes into account the respondent's desire for health care services. This component will be influenced by a vector of educational, economic, and psychological qualities, it is anticipated. The following economic variables were discovered to have an effect on willingness: (X1) Family size (X2) Family monthly income (X3) Months of schooling for fathers/guardians (X4) Awareness of health programmes (X5) Medical spending and household size are prioritised. Educational aspects include the father's and mother's education levels.

Multinomial Logistic Regression on the Stage of Transporting the Child to the Hospital for Treatment
Developed Blocks
The above table summarises the produced blocks Multinomial Logistic Regression on Medical Expenditure Priority in Developed Blocks. The proposed model successfully captured the relationship between a small number of parameters and the dependent variable. The first equation for this model's variables demonstrates a high degree of explanation for the model's household size (X2), family monthly income (X3), mother father guardian education, and household size (X2) (X4). The proposed equations 2,3,4, and 6 indicate how the independent variable, Family Income, has a significant effect on food expenditure, housing expenditure, and education expenditure (X3). None of the variables in equation 5 account for a large portion of Medicare. Pearson's chi-square test indicated that the value was significant.

Backward Blocks
Multinomial Logistic Regression on Medical Expenditure Priority in Backward Blocks Except for equation 4, the suggested model failed to provide any variables that were significantly explained by the dependent variable. However, equation 4 indicated that the variable mother father guardian education (X4) had a significant effect on the dependent variable, as well as a significant intercept. Pearson's chi-square value is insignificant statistically. The recommended strategy for dealing with backward blocks is diametrically opposed to the blocks that have been built. In other words, the proposed model contains a high proportion of unexplained variables, implying that the specific model must account for the backward model condition about expenditure priority.

Gini Ratio Results (Table 3 & 4 and Image 1 &2)
Gini Coefficient Distribution of Income in Developed and Backward Blocks
In the developed block, the Gini coefficient concentration ratio is 0.1523; in the backward block, it is 0.2128. Due to the fact that the ratio is greater in the backward block than in the developed block, the inequality is greater in the backward block. This is what has become of employment opportunities and diverse sources of income in the developed area's organised and unorganised sectors.

Gini Coefficient Effects on Medical Expenditure for Developed and Backward Blocks
When compared to the amount spent on medical care, the Gini coefficient concentration ratio in terms of income level is 0.4739 in the developed world and 0.7608 in the developing world. Because the ratio is bigger in the backward block than in the developed block, the inequality in the backward block is greater. This is what has happened to employment opportunities and different sources of income in the organised and unorganised sectors of developed countries.

CONCLUSION

In the developed block, family income, opinions toward government hospitals, and the cost of delivery were found to be significant. Additionally, they are inversely connected. Additionally, family income and the number of instances

available to a household were found to be significant and inversely related in the backward blocks. This study bolsters the notion that higher-income individuals are unwilling to pay for government services. The findings of the study substantiate this assertion. In the backward block, increased health expenditure was found to be positively related to willingness to pay.

In terms of curative health care, household size and mother's education were discovered as significant variables; whilst household size is positively related to curative expenditure, mother's education is adversely related to it. This supports the concept that mothers' educational attainment and access to preventative treatment are positively related. In wealthy countries, health expenditure and father education are statistically significant. This research illustrates the beneficial effect of economic and educational qualities on preventative medical therapy. The third indication of health care utilisation was the frequency of hospital visits. Significant variables included family income, opinions of government hospitals, and medical expenditure priorities. Family income is negatively correlated with hospital attendance. The public perception of the public hospital is overwhelmingly positive and substantial. When the number of visitors to a government hospital in a backward block is positive, medical expenditures are prioritised. In developed countries, health expenditure, family income, and mother's education are all inversely related. This corroborates the notion that income and the level of education of the mother have an inverse relationship with the frequency with which people visit government hospitals. Additionally, when public attitude about government hospitals improves, the frequency with which persons visit government hospitals increases. Thus, it has been demonstrated that the money of a family, the education of the mother, and one's impression of a government hospital all influence how people select between public and private health care.

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Multinomial Logistic Regression – Developed and Backward Blocks

Equity and efficiency in health status and health service utilisation should be assured. It would be beneficial to gain a better understanding of the health impacts of public fiscal and income policies.

$W_{(Immediately)}$= a + $X1_{(Location)}$ + $X2_{(Household\ size)}$+ $X3_{(Family\ Monthly\ Income)}$+ $X4_{(Mother\ /Father/Guardian\ Education)}$ + $X5_{(Awareness\ of\ Health\ Schemes)}$ + μ ---- equation 1

W(Wait and the severity) = a + $X1_{(Location)}$ + $X2_{(Household\ size)}$+ $X3_{(Family\ Monthly\ Income)}$+ $X4_{(Mother\ /Father/Guardian\ Education)}$ + $X5_{(Awareness\ of\ Health\ Schemes)}$ + μ ---- equation 2

W(starts affecting day-to-day work) = a + $X1_{(Location)}$ + $X2_{(Household\ size)}$+ $X3_{(Family\ Monthly\ Income)}$+ $X4_{(Mother\ /Father/Guardian\ Education)}$ + $X5_{(Awareness\ of\ Health\ Schemes)}$ + μ ---- equation 3

W(incapacities me) = a + $X1_{(Location)}$ + $X2_{(Household\ size)}$+ $X3_{(Family\ Monthly\ Income)}$+ $X4_{(Mother\ /Father/Guardian\ Education)}$ + $X5_{(Awareness\ of\ Health\ Schemes)}$ + μ ---- equation 4

Table – 1: Developed Blocks - Multinomial Logistic Regression on Stage to Carry the Child for Treatment to the Hospital

Child Development	Variables	B	Std. Error	Wald	DF	Sig.
Immediately	Location (X1)	.638	.349	3.335	1	**.068 ***
	house hold size (X2)	.161	.133	1.469	1	.226
	Family mon income (X3)	-.109	.140	.599	1	.439
	moth fat guar education (X4)	-.001	.147	.000	1	.994
	aware of health schemes (X5)	-.034	.390	.008	1	.931
Wait and the severity	Location (X1)	.527	.335	2.468	1	.116
	house hold size (X2)	.288	.126	5.200	1	**.023****
	Family mon income (X3)	-.037	.132	.080	1	.777
	moth fat guar education (X4)	-.027	.139	.036	1	.848
	aware of health schemes (X5)	.041	.371	.012	1	.913
starts affecting day-to-day work	Location (X1)	.032	.430	.005	1	.941
	house hold size (X2)	.117	.160	.532	1	.466
	Family mon income (X3)	-.003	.167	.000	1	.985
	moth fat guar education (X4)	.028	.176	.025	1	.875
	aware of health schemes (X5)	-.357	.486	.540	1	.462
when it incapacities me	Location (X1)	.136	.411	.109	1	.741
	house hold size (X2)	.071	.155	.213	1	.645
	Family mon income (X3)	-.005	.161	.001	1	.974
	moth fat guar education (X4)	.037	.169	.049	1	.825
	aware of health schemes (X5)	-.223	.461	.235	1	.628

Pearson Chi-Square	119.236 (0.000)
Pseudo R-Square Cox and Snell	0.468
Nagelkerke	0.488
McFadden	0.196
Note : values in brackets denotes p-values Source : Computed from primary data	

Table – 2: Backward Blocks - Multinomial Logistic Regression on Stage to Carry the Child for Treatment to the Hospital

Child Development	Variables	B	Std. Error	Wald	DF	Sig.
Immediately	**Location (X1)**	-.060	.292	.042	1	.838
	house hold size (X2)	-.078	.090	.752	1	.386
	Family mon income (X3)	-.186	.138	1.820	1	.177
	moth fat guar education (X4)	-.077	.126	.380	1	.537
	aware of health schemes (X5)	.430	.310	1.922	1	.166
Wait and the severity	**Location (X1)**	.197	.256	.592	1	.442
	house hold size (X2)	-.033	.081	.167	1	.682
	Family mon income (X3)	.172	.113	2.326	1	.127
	moth fat guar education (X4)	-.093	.112	.695	1	.405
	aware of health schemes (X5)	-.212	.284	.559	1	.455
starts affecting day-to-day work	**Location (X1)**	-.294	.259	1.284	1	.257
	house hold size (X2)	.006	.077	.006	1	.940
	Family mon income (X3)	.111	.110	1.033	1	.309
	moth fat guar education (X4)	-.124	.108	1.322	1	.250
	aware of health schemes (X5)	.426	.270	2.497	1	.114
when it incapacities me	**Location (X1)**	-.080	.251	.100	1	.752
	house hold size (X2)	.035	.076	.213	1	.645
	Family mon income (X3)	.028	.111	.065	1	.798
	moth fat guar education (X4)	-.174	.109	2.519	1	.112
	aware of health schemes (X5)	.379	.268	1.990	1	.158
Pearson Chi-Square					1107.918 (0.300)	

Pseudo R-Square Cox and Snell	.097
Nagelkerke	.101
McFadden	.032
Note : values in brackets denotes p-values Source : Computed from primary data	

Gini Coefficient Ratio

The Gini coefficient Ratio can also be used to explain inequality. This is the ratio of the area enclosed by the Lorenz curve to the area enclosed by the line of equal distribution. This ratio has a value of '0' at the minimum and a value of '1' at the maximum. When no inequality exists and the Lorenz curve intersects the line of equal distribution, the ratio is '0'. The Lorenz ratio is T when the curve coincides with the triangle produced by the line of equal distribution. Its value is '0' in an equal distribution. As the inequality increases, the value of the coefficient increases. The Gini ratios were calculated in order to comprehend the existence of inequality.

Image - 1

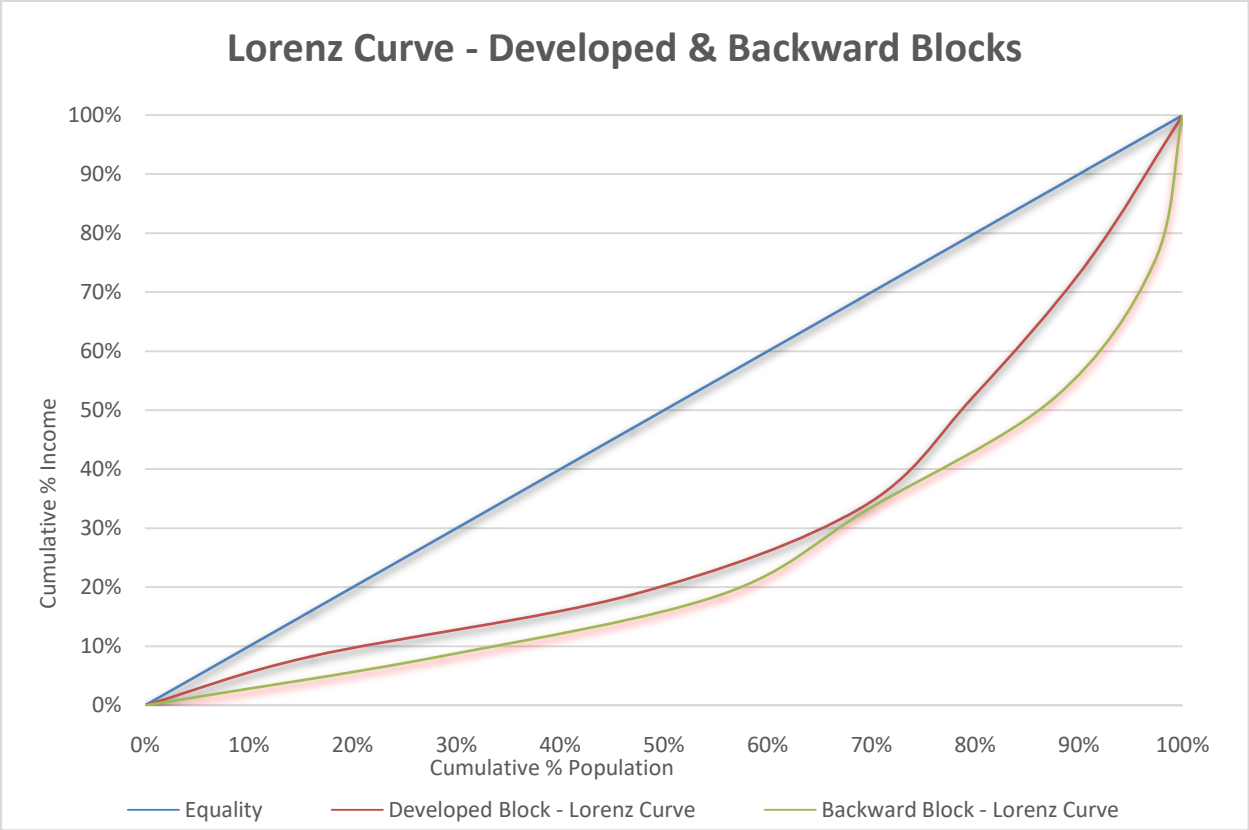

Table – 3: Gini Coefficient Results on Income Distribution of Developed and Backward Blocks

Particulars	Developed Blocks	Backward Blocks
Area	0.0761	0.1064
Gini	0.1523	0.2128

Image – 2

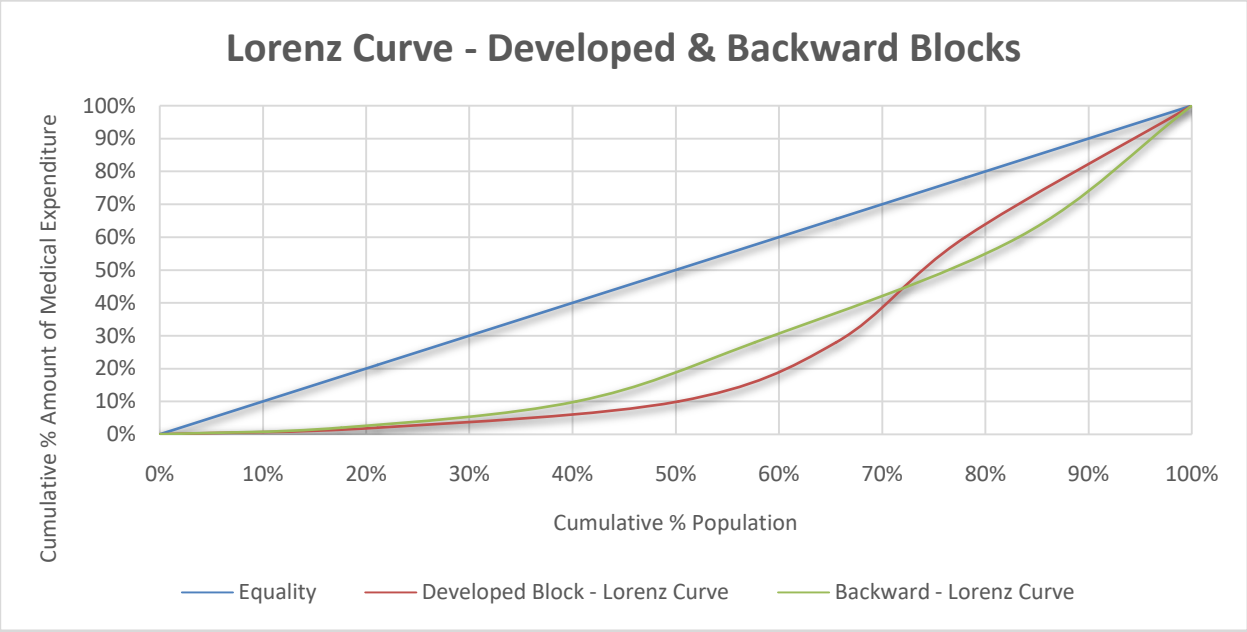

Table – 4 : Gini Coefficient Results on Amount Spent to Medical Expenditure of Developed and Backward Blocks

Particulars	Developed Blocks	Backward Blocks
Area	0.23697	0.3804
Gini	0.4739	0.7608