

Economic Determinants of Maternal Health: An Evaluation of Dhubri, Assam

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Abstract: In developing countries, complications of pregnancy and childbirth are the leading causes of death among the women of reproductive age. According to WHO report 2015, every minute 830 women dies from complications of childbirth and almost 20% of the births in developing countries still take place without a medically skilled attendant to aid the mother. Undoubtedly, the ratio of childbirth without medically skilled attendant is decreasing, but the coverage of the health sector is lagging behind.

Although, the maternal health care is very much related to biological processes, the importance of the economic factors is no less significant. It is because if economic performance of the family is not good, we can't think about good maternal health. Therefore, this article has made an attempt in determining economic factors which affects maternal health. In determining the importance of these factors, the author has also used statistical tools and softwares. Among the dependent economic factors of household income, education level, access to health facility and type of family, family income and access to health facility comes out to be the most significant explanatory variables. While the education level and family type has failed to influence the explained variable. The article concludes with some suggestive measures for improving maternal health.

Key words: maternal mortality, infant mortality, haemoglobin, per capita income

Introduction: While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill-health and even death. Maternal health refers to the health of women during pregnancy, childbirth and post-partum period. It encompasses the health care dimensions of family planning, pre-conception¹, pre-natal², post-natal³ care in order to reduce maternal morbidity and mortality.

In developing countries, complications of pregnancy and childbirth are the leading causes of death among the women of reproductive age. The risk of a woman dying from maternal related causes in a developing country is 33 times higher than the woman of a developed country. Though, there is a growing awareness among the people in general for a safer childbirth with the aid of medically skilled attendants, the picture of

completely different in the remote rural areas. Decreasing the rates of maternal morbidity and mortality in developing countries is important because poor maternal health is both indicator and a cause of poverty. According to the National Family Health Survey(NFHS)-3, Assam has made an insignificant improvement in terms of institutional delivery compare to NFHS-2, while Manipur, another state of northeastern region has made tremendous improvement in this aspect. Again, the maternal mortality rate in Assam has improved from 480, Sample Registration Survey(2004-05) to 328 women per 1,00,000, according to Sample Registration Survey (2010-12).

Objectives: Although, maternal health is very much related to biological processes, the importance of the economic factors is also highly significant. It is because if economic performance of the family is not good, we can't think about sound maternal health. Therefore, the author has tried to focus on the economic causes of maternal health and laid down the following objectives.

- i. To find out the existing maternal health status in this district.
- ii. To find out the importance of economic factors which influence maternal health.

1pre-conception care includes education, health promotion, screening and other interventions among women of reproductive age to reduce the risk factors that might affect future pregnancy

2pre-natal care implies detection of any potential complication of pregnancy early to prevent them if possible

3post-natal care means recovery from childbirth, concerns about new born care, nutrition, breastfeeding and family planning

Review of literature: A number of studies were made from different perspectives to know the maternal health status. According to development economist, A. Shiva Kumar, lack of investment in the health care sector causes high maternal mortality in this region (UNICEF, 2013). Maternal deaths are both caused by poverty and cause of it. The cost of childbirth can quickly exhaust a family income, bringing with it even more hardship (Tomar Manuelyan, 2009). But it is difficult to pinpoint one particular reason for such results. There is a gamut of social issues, no development, lack of infrastructure, lack of respective manpower and do other such things which contribute to such drastic results (Aparajita Gogoi, 2007). In spite of having many government sponsored programmes, maternal mortality rate and infant mortality rate are still too high in Dhubri (Ministry of Minority Affairs, 2010). The Government of India has been making a continuous thrust on the improvement of maternal child health care services. Beyond these, there is much more efforts required to be put into for the improvement of maternal health care services in order to have safe child delivery and sound health of child as well as mother.

Methodology: In dealing with the real life problems, it is often found that the data collected from primary sources are more effective to demonstrate fruitful results. Therefore, the investigation is made on the basis of primary data collected from randomly selected mothers of an development block area. While collecting primary data, the method of schedules and questionnaires were applied. It is to be mentioned here that the required data were collected with the help of experts. Since the present study was undertaken in order to analyse the significance of economic parameters influencing maternal health, Haemoglobin count in mothers has been taken as the variable representing maternal health. So, the dependent variable has been indicated as HC. There are multiple variables influencing the dependent variable, i.e., haemoglobin count in mother's blood. Therefore, the variables that influences the dependent variable are discussed below:

- a) Economic status: Household Per Capita Monthly Income (PCHHI) has been taken as the variable representing the factor. The variable

is expected to influence positively maternal health. Hence, its coefficient is expected have a positive sign.

- b) Educational level of the mother: The number of years of formal education of the mother's (YoS) has been taken as the variable representing this factor. The factor is expected to influence positively maternal health. Hence, its coefficient is expected to have a positive sign.
- c) Access to health care: It is assumed that closer the residence of the mother to the health centre, better is the access to health facilities. The variable is used for capturing this factor is distance from health centre (DHC). The variable actually captures this lack of access rather than access to health facilities. So, the coefficient is expected to be negative.
- d) Family Type: Maternal health may be affected by the type of the family. While some believe that being in a joint family positively influence maternal health. Some others hold the opposite view. Two types of families are considered here joint and nuclear. Since this qualitative variables has two categories, one dummy variable was used to capture it. The dummy variable FT takes '1' for joint families and '0' for otherwise. Its coefficient is the differential effect on the maternal health of joint families over nuclear families.

Hence, the regression model is constructed keeping in view the above variables in consideration. The regression model takes the following form:

$$HC = b_0 + b_1PCHHI + b_2YoS + b_3DHC + b_4FT + e$$

Where 'e' is the random disturbance term which is assumed to satisfy classical least square assumptions. The regression model is formulated and estimated by OLS method using data from a sample of 300 (three hundreds) randomly selected mothers.

Data Analysis:

Model summery

Model	R	R square	Corrected R ²	STD. error of estimate
1	.988 _a	.977	.972	.70980

- a. Predictors: (constant), FT, YoS, DHC, PCHHI

ANOVA_b

Model 1	Sum of squares	Degrees of freedom	Mean square	F	Significance
Regression	420.889	4	105.222	208.853	.000 _a
Residual	10.076	20	.504	-	
Total	430.965	24	-	-	

a. Predictors: (Constant), FT, YoS, DHC, PCHHI

b. Dependent Variable: HC

The results presented in the table tell us that the model has a very high R² value and it has a high Adjusted R² too which shows that the model is good fit. The R² value of .977 implies that 97.7% of the variation in Haemoglobin count is explained by the independent variables jointly.

Coefficients_a

Model 1	Unstandardised coefficients		Standardised coefficients	t	Sig.
	B	Std. error	Beta		
Constant	.789	4.332	-	.182	.857
PCHHI	.009	.002	.467	3.735	.001
YoS	.034	.120	.023	.284	.779
DHC	-1.484	.351	.522	-4.228	.000
FT	.402	.296	.048	1.349	.192

a. Dependent Variable: HC

Again, the model shows that among the explanatory variables, PCHHI and DHC are most significant. PCHHI influences maternal health most and positively while DHC negatively influences it most.

On the other hand, YoS and FT are the variables which comes out to be insignificant at their level. But, when we look at the output of the parameters(Table below), the independent variable DHC influences maternal health mostly and negatively. The F value of the model(=208.853) is significant at 10%, 5%, 1% level of significance. It means that the model is overall significant. Hence, the regression results suggests that better access to health centers and raising household income can improve maternal health scenario in the Dhubri ditrict.

Econometric Analysis of Multiple Regression Results of Maternal Health

Sr. No	Variables	Estimate d coefficients	Std. error	t-value
1	PCHHI	.009	.002	3.735
2	YoS	.034	.120	.284
3	DHC	-1.484	.351	-4.228
4	Constant	.789	4.332	.182
5	R square	.977	-	-
6	F{4,20}	208.853	-	-
7	FT	.402	.298	1.349

Suggestions: Since there is tremendous growth of health centers in the urban places both government sponsored and private nursing homes, the people in general and people of remote areas in particular cannot access required health facilities due to the high cost structure of the private health practitioners and distance of the city centers from their places. Another reason for the inaccessibility of health care services by the rural people is due to the fact that government appointed health personnel are not willing to go to the villages. It may be mentioned here that in the urbanised health care market, government appointed physicians are also running parallel private practices with the help of private health clinics. These factors have made the health services very costly and unaffordable for the poor villagers. Maternal health care issues are very prominent to the mother, child and the family because when the mother is not well due to maternal issues, a child can not be born with sound health. Though, government has sponsored a numbers of programs related to maternal health, there is still uncovered areas which need to be addressed urgently. For this, government should workout some need based and focused plans to reach the unreachable areas and government must ensure that maternal health care services be provided at affordable costs.

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