MODELLING OF SOME FACTORS INFLUENCING CHILDBEARING BY TEENAGERS

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Abstract – Concern is often expressed regarding the potentials harm that early childbearing imposes on the teen mother, the child and to the society at large. Hence the need to study and model some factors that may be considered as contributing to early child bearing by teenagers. These factors among others are parent's economic status, environmental factors, secondary school attended, peer groups and parents spiritual levels. Logistic regression was used and it is observed that environmental factors and peer groups are significant factors that influence early child bearing, while the other factors considered does not contribute significantly to factors that influence teenager child births.

Keywords: teenagers, childbearing, Logistic regression, modeling, factors

INTRODUCTION:

Teenage child bearing has been described as a cause of persistent poverty and such poverty can be transmitted inter-generationally (Trussell 1976). For the past several years, social scientists have documented a strong association between the age at which a woman has her first child and social economy indicators of her subsequent well-being. Most of these studies find that women who bear children at early age are therefore less likely to complete high school, not likely to participate in the labour force accordingly, likely to have low earnings, more likely to have a less social life and less likely to marry early than women who do not have children at their teen age. Recent econometric studies indicate that the opportunity costs of teen childbearing appear to be lower where teen childbearing is common than in settings where it is less common (Haveman and Wolfe 1993). Such findings underscore the importance of controlling carefully for differences in socioeconomic background when studying the effects of teen childbearing on the future well-being of women or their children. They also suggested that further consideration should be given to the possibility that the women who actually have their first-births in their teens may not be damaging their future prospects.

The National Campaign to Prevent Teen Pregnancy in 2007 has summarized many of the statistics that are often used to support arguments about the potential problems associated with teen childbearing. They emphasize the fact that women who give birth as teens tend to subsequently have lower educational attainment and higher rates of financial problem. Their children are more likely to be born with low birth weight, more likely to give birth at early age and some may have weaker performance in school. Notwithstanding it is difficult to determine the extent to which the teen birth is the causal reason for these poor outcomes, these relationships are both sufficiently strong and alarming that they receive a great deal of attention. Wikipedia reports that teenage pregnancies are usually linked with several issues that include "lower educational levels, higher rates of poverty and other poorer life outcome in children of teenage mothers". It is also argued that teenage pregnancy in developed countries is often outside of marriage and this comes with certain social stigma in many communities and cultures.

Teenage pregnancy is not like any other issue, although it seems to be a common concern, it does not seem to bother people that much, not until they are personally affected by the issue or until they finally realized that it had been increasing in the number of affected people that it is now considered as being abnormal. Teenage pregnancy is mostly unplanned, and as a result, people react to the experience differently. The teenager has to come to terms with the unexpected demands of being an adult, and in some cases, she may also have to deal with disapproval and dissatisfaction shown by parents and relatives. Teenage pregnancy is a social problem that leads to the disruption of schooling, poor obstetric outcomes, inadequate mothering, and poor child outcomes relationship difficulties with relatives, partners and peers, and demographic concerns about increasing population numbers. In some cases, teenage mothers are not in a position to go back to school after giving birth they are forced to look after their children. In some cases, these young mothers have physical health conditions that do not make it conducive for them to go back to school, while some young women may be prevented from going back to school by their

parents. It was found that there are some cases of teenagers who may use their pregnant status to deliberately escape the demands of high school education.

Many factors can contribute to a teen's risk of becoming pregnant; Family history and home life seem to have an impact on teenage girls. Ditsela and Van Dyk (2011) did an exploratory study on the risk and protective factors associated with teenage pregnancy.

Through their study, they found a correlation between the parenting style in the girl's home and teenage pregnancy. The findings suggest that adolescent pregnancy will be more common in young women who grow up with authoritarian or permissive parents. In contrast, teenage who perceived their parents to be more responsive, communicative and allowed them to develop were less likely to get pregnant as a teenager. The duo emphasized the importance of parental relationships with their children as a protective factor against teen pregnancy. In their article, the authors encouraged parents to foster open communication in their home, especially around the topics of sex and sexuality. Unfortunately, some parents resist talking with their teenage children about strategies to prevent pregnancies (Wu and Wolfe 2001). Wright, Randall, Arroyo, 2013 in their studied, found that there was no relationship between mothers and the effects of sexual media on their daughters' sexual behaviors; conversely, the researchers did find a correlation with fathers. Teenage girls who watched the MTV shows often were shown to have an increased probability of engaging in sexual intercourse; however, "frequent viewing was associated with a decreased probability of having engaged in recent intercourse for females whose fathers often communicate about sex with them while growing up". This finding is similar to the research that Ditsela and Van Dyk (2011) presented, which showed that lack of parental support is related to risky sexual behaviour.

Researchers have also taken a close look at teenagers' attitudes about adolescent pregnancy. Cavazos-Rehg, et. al. (2013) found that 16% of the girls in their study, who were sexually active, would be pleased, 11% a little pleased, 5% very pleased if they became pregnant. They found a correlation between the pleased attitude towards pregnancy and prior pregnancy, the parent's level of education, and racial or ethnic group. Similar to the research presented earlier, they also found a relationship between young women's attitudes toward pregnancy and their parents. Girls who had discussed sexual health and types of birth control with their parents were less likely to say they would be very pleased being pregnant at their teen age. "Participants who had not yet discussed sexual health topics or had only discussed birth control with a parent were more likely to be very pleased with a teenage pregnancy". It is noteworthy that the majority of the sample groups "would be upset with a teenage pregnancy (Cavazos-Rehg, et. al., 2013,). In their studied, East, Chien, Barber, 2012, estimated that one in four teenage pregnancies is unwanted and that "three fourths of all teenage pregnancies are unintended" Melissa (2012 observed that teenage pregnancy could lead to incomplete education, unemployment and other numerous emotional traumas. Early motherhood had been linked to affects the psychological development of the child adversely. Beside psychological, physical risks cannot be ignored. Teenage girl's body is not as developed as adult women in term of childbearing, thus, they are often faced with certain complications during pregnancy. Lack of sexual education caused teens get abortions since they realize that they are not ready yet to take responsibility of being a parent at such a tender age and still have many things to pursue and probably achieve in life.

The chance of maternal death cannot also be ruled out as possibilities in teenage pregnancy. Marnnach et al., (2013) opined that medically, teenage pregnancy maternal and prenatal health is of particular concern among teens that are pregnant or parenting. The world wide incidence of premature birth and low birth weight is higher among adolescent mothers. Teenage mothers between 15-19 years old were more likely to have anaemia, preterm delivery and low birth than mothers between 20-24 years old. The teen mother can become easily frustrated and find violence as the way to overcome grief. She might become distraught thinking that she is a failure as a parent and might become depressed and consider suicide.

Nigeria Demography and Health Survey of 2003 reveals that teenage fertility level varies greatly in Nigeria due to different socio-economic, cultural, family background, peer group, spiritual level and environmental back- ground characteristics of the people in the country, which include teenage marital status, level of education, occupation, place of residence, the kind of environment they grow up in and more importantly, the region of the country where the teenage girls are living(Berger (1991). If early childbearing is associated with poor outcomes for both mothers and their children, then why do women give birth at such an early age? Public discussions directed at answering this question have focused on a number of potential explanations: the incentives of the welfare system, poor labour market outcomes for teens, lack of access to affordable contraception, poor parental and peer influences, and socioeconomic disadvantage, among others. Socioeconomic disadvantage can lead to early childbearing through a

number of different mechanisms. The poor may lack the resources available to know about the different opportunities available to them or to take advantage of those opportunities. This could hinder their ability to make optimal choices regarding contraceptive use, educational attainment, labor market training, and the like. Alternatively, those at the bottom of the economic ladder may have given up hope of improving their economic conditions or those of their offspring. Schools and/or labor market conditions in their communities may be so weak that staying in school and avoiding early motherhood might not be seen as offering any material benefit. In addition, some evidence suggests that those who grow up in disadvantaged situations have a stronger "taste" for children. Bissell (2000) argues that the daily stresses of an impoverished adolescence breed a deep sense of need for something positive to look to. This paper examines some of the factors that influence early childbearing among teenager in Ekiti State and Lagos state, Nigeria.

MATERIAL AND METHODOLOGY

The data used for this study is a primary data, the method of data collection is through questionnaires. Two hundred questionnaires each were administered to residents of Ado Ekiti, in Ekiti State and of Agege, in Lagos State. The questions on the questionnaire contain information about the social economy outcome of childbearing at early age (Teenage).

LOGISTICS REGRESSION

Logistic regression analysis studies the association between a categorical dependent variable and a set of independent (explanatory) variables. The name logistic regression is used when the dependent variable has only two values, such as 0 and 1 or Yes and No. The name multinomial logistic regression is usually reserved for the case when the dependent variable has three or more unique values, such as Married, Single, Divorced, or Widowed. Although the type of data used for the dependent variable is different from that of multiple regressions, the practical use of the procedure is similar.

Logistic regression competes with discriminant analysis as a method for analyzing categorical-response variables. Many statisticians feel that logistic regression is more versatile and better suited for modelling most situations than is discriminant analysis. This is because logistic regression does not assume that the independent variables are normally distributed, as discriminant analysis does. This program computes binary logistic regression and multinomial logistic regression on both numeric and categorical independent variables. It reports on the regression equation as well as the goodness of fit, odds ratios, confidence limits, likelihood, and deviance. It performs a comprehensive residual analysis including diagnostic residual reports and plots. It can perform an independent variable subset selection search, looking for the best regression model with the fewest independent variables. It provides confidence intervals on predicted values, and provides ROC curves to help determine the best cutoff point for classification. It allows validating results by automatically classifying rows that are not used during the analysis.

BINARY LOGISTIC REGRESSION

Binary logistic is typically used when the dependent variable is dichotomous and the independent variables are either continuous or categorical. Y and single independent variables. Assume that Y is coded so it takes on the values 0 and 1. In this case, the logistic regression equation is $ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X$

Now consider impact of a unit increases in X. the logistics regression equation becomes $ln\left(\frac{p'}{1-p'}\right) = \beta_0 + \beta_1 X\ (X+1) = \beta_0 + \beta_1 X + \beta_1$

We can isolate by taking the difference between these two equations. We have $\beta_1 = \beta_0 + \beta_1 X\ (X+1) - (\beta_0 + \beta_1 X) = ln\left(\frac{p'}{1-p'}\right) - ln\left(\frac{p}{1-p}\right)$

$$= ln\left(\frac{p'}{1-p'}\right) \div ln\left(\frac{p}{1-p}\right) = ln\left(\frac{odds'}{odds}\right)$$

That is, is the log of the ratio of the odds at X+1 and X. removing the logarithms by exponentiating both sides gives $e^{\beta 1}\frac{odds'}{odds}$

The regression coefficient is interpreted as the log of the odd ratio comparing the odds after a one-unit increase in X to the original odds. Note that, unlike multiple regressions, the interpretation of depends on the particular value of X since the probability values, the p's, will vary for different X

DATA ANALYSIS AND RESULTS USING LOGISTIC REGRESSION ANALYSIS

Result of Binary Logistic Regression Analysis

	B	S.E.	Wald	df	Sig.	Exp(B)
Parents' Economic Status	-.147	.151	.949	1	.330	.863
Environmental factor	-.384	.136	7.913	1	.005	.681
Secondary school attended	-.501	.257	3.810	1	.051	.606
Peer group	-1.862	.243	58.840	1	.000	.155
Parent Spiritual level	-.029	.116	.062	1	.803	.971
Constant	4.287	.714	36.007	1	.000	72.767

SUMMARY, CONCLUSION AND RECOMMENDATION

All the explanatory variables were entered/removed from the binary logistic regression using a step-wise procedure with a p-value of 0.05 to enter and a p-value of 0.10 to remove. The Wald statistic was used to test the null hypothesis that each coefficient is zero. The Table looks at the women who gave birth to their first child birth as teenager. The result is given by the Wald test. The P value (0.330, 0.051 and 0.803) of the Parents' economic status, secondary school attended and parent spiritual level are greater than 0.05, this shows that Parents' economic status, secondary school attended, and parent spiritual level respectively are not significant in the model. However, Environmental factor and peer group are significant in the model. This is obvious from the p value of 0.005 and 0.000 respectively that is seen to be less than 0.05.

From the result, we can conclude that Parents' economic status, secondary school attended and parent spiritual level are not significant factors that influence teenager child birth. However, Environmental factor and peer group are very significant factors influencing teenager child birth.

One can therefore recommend base on the above results that parent should educate their children on sex, birth control and to spend few hours with them telling them the rightful ways to take in their teens years, to teach the female how to say NO and mean it, the male should prove his manhood either by participating in competitive sports or academic pursuits, not having canal knowledge of the opposite sex. Teenagers should be well informed that the only best way to prevent teen pregnancy is abstinence so as not to be influenced by peer groups.

Parents, schools, churches, mosques, government should educate the teenagers of the importance of education.

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